

Susan Weese and Terri Wagner

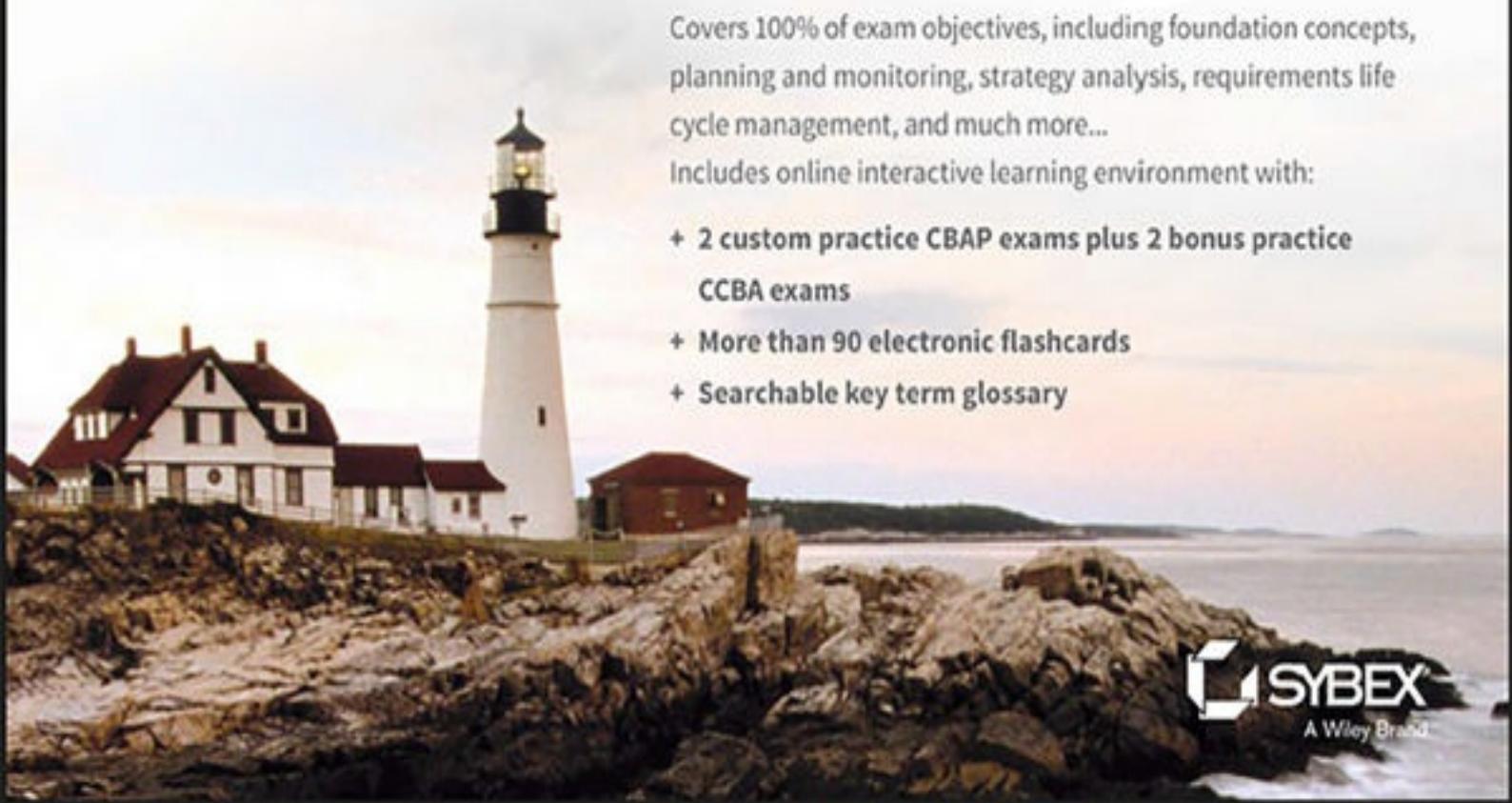
CBAP®/CCBA®

Certified Business Analysis

STUDY GUIDE

Second Edition

UPDATED FOR THE BUSINESS ANALYST
BODY OF KNOWLEDGE VERSION 3.0



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Certified Business Analysis

Study Guide

Second Edition



Susan Weese

Terri Wagner



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Good luck to all the planners, crammers, and refreshers getting ready to sit for the CBAP® or CCBA™ business analysis certification exam!

Dedicated to my family, friends, and colleagues who put up with me spending so much time on this book.

—Susan

Lovingly dedicated to my niece, Jenna, for her generous spirit, keen analytic skills, and leadership acumen. Fueled by passion and purpose, blended with the right mix of values, skills and experience, I have no doubt her leadership influence will be felt around the world. And it all started with being an awesome Business Analyst!

—Terri

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A big thank-you goes out to the founders and supporters of the International Institute of Business Analysis (IIBA™) and the team who developed the contents of the *BABOK® Guide*. I would also like to thank my colleagues and good friends, Ginger Sanchez, Peggy Oglesby, and Phil Bennett, for sharing their wonderful business analysis stories and ideas that became the basis for many tales in this book. Thanks also to Melisa Pearce of Touched by a Horse for sharing her barn project.

This book is the result of collaboration between Susan Weese and Terri Wagner. Susan authored the book. Terri reviewed text and lent her experience and expertise to parts of the overall project.

Finally, Little Man, thank you for lying on my computer every morning and helping me think through things. You are the prince of cats.

—Susan

My deepest gratitude to Susan for taking the helm and navigating these waters. Your dedication, talent, and wisdom never cease to amaze me. Thank you for all your hard work and perseverance masterfully integrating the many enhancements to the Business Analysis Body of Knowledge into this updated study guide. I admire your professionalism and cherish your friendship!

—Terri

About the Authors

Susan Weese, PgMP, PMP, PRINCE2, MSPM, MoP Susan is a management consultant, curriculum designer, and professional speaker specializing in project management and requirements development process development and implementation for complex information technology projects. She started her work career as a software engineer, designing and developing complex mathematical algorithms for satellite and radar systems. Halfway through her work life, Susan crossed to the dark side of technology and became actively involved with managing programs, projects, large consulting organizations, and business processes. She is still having a blast and has never looked back.

Susan founded Colorado-based Rhyming Planet, Inc., in 2000 to motivate, lead, and enable technical and business professionals to accomplish their program and project goals. Susan is also an adjunct faculty member at Colorado State University, delivering courses on project management and the underlying competencies that turn good managers into great managers.

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Introduction

The content of this book revolves around *A Guide to the Business Analysis Body of Knowledge® (BABOK® Guide) Version 3.0*, published in 2015 by the IIBA™ headquartered in Toronto, Canada. You will notice references to the *BABOK® Guide* throughout this book. Its contents drive the discussions on performing successful business analysis work across the project life cycle. In some cases, certain phrases are used verbatim to ensure strict conformance with the *BABOK® Guide*. Both certification exams focus on the contents of the *BABOK® Guide*. Consider getting a copy of the guide to assist you while you are using this book to prepare you for the exams.

The book contains many hints and tips about preparing for and passing the exam and using what you have learned in your everyday work. The first tip for anyone wanting to become familiar with the *BABOK® Guide* is that you need to learn its language. Speaking this language gives you a common business analysis language, regardless of the industry or organization you work in. The terms and definitions found there may be different from the terms and definitions you use at work. So, your first step is to familiarize yourself with the terms and definitions so you are comfortable with *BABOK® Guide*—speak.

The second tip is that you need to be familiar with the six knowledge areas defined in the *BABOK® Guide*. These knowledge areas divide your business analysis knowledge and skills into six common areas. You will start with the high-level definitions and then drill down into the detailed tasks and techniques that successful business analysts use to get the job done. Let's move on and talk a little bit about the focus of this book.

What You Will Learn

This book helps you prepare to take the CBAP® or CCBA™ certification exam. The CBAP® exam is designed for experienced business analysts, while the CCBA™ exam targets people who have less experience in the business analysis profession. Reading this book does not guarantee that you will pass the exam, but ideally you will find its contents motivating and helpful.

In the new certification exam structure, the CCBA™ exam provides less experienced business analysts with their first step toward obtaining the CBAP® designation. This exam targets individuals who are proficient in some aspects of business analysis, are in the process of developing business analysis skills and expertise, and who apply business analysis to smaller scope projects and less complex tasks. The CCBA™ certification expires after five years. The expectation is that you will then apply to take the CBAP® exam when you have gained more business analysis experience. You can also retake the CCBA™ exam if you have not yet met the required CBAP® exam level of business analysis experience.

What Is Covered in This Book

The *CBAP®/CCBA™: Certified Business Analysis Study Guide, Second Edition* follows a simple project life cycle frequently used as the basis for many projects. The life cycle consists of three high-level phases.

- Controlled start, where you plan for your project's business analysis activities and define the scope of the new solution your project will create
- Controlled middle, where the project work is actually being performed to define, design, and build the new solution
- Controlled end, when you wrap up your work activities and transition the new solution into operational use

The knowledge areas of the *BABOK® Guide* are placed within these three life cycle phases in order to work through the business analysis tasks and techniques from project start to end.

To get the most out of this book, you should read each chapter from start to finish and then check your memory and understanding with the chapter-end elements. Even if you're already familiar with a topic, you should skim the chapter; business analysis is complex. There are often multiple ways to accomplish a task, and you may learn something even if you're already competent in an area.

Chapter 1, “Foundation Concepts,” lays the groundwork for navigating and understanding the content and intent of the *BABOK® Guide*. This chapter gives you a high-level look at what it means to be a business analyst and reviews the underlying competencies of the business analyst, the key business analysis stakeholders, and the *BABOK® Guide* requirements classification scheme.

Chapter 2, “Controlled Start: Business Analysis Planning and Monitoring,” takes you through planning the business analysis activities for your project using tasks from your first knowledge area. To achieve a controlled start to a project or project phase, you must plan what needs to be done, how to go about doing it, and who needs to be involved with the work.

Chapter 3, “Controlled Start: Strategy Analysis,” steps you through translating your organization's business strategy into a proposed new business solution. During your project's controlled start, you will define and document the business requirements for your project. The business requirements justify why a particular project should be initiated to address a particular business need.

Chapter 4, “Overarching Tasks: Requirements Life Cycle Management,” focuses on ensuring that the right people are involved with developing, understanding, and approving the project requirements. In addition, your project requirements must be accessible and managed during your requirements development work and throughout the project life cycle.

Chapter 5, “Controlled Middle: Elicitation and Collaboration,” guides you through gathering, organizing, and understanding the necessary information to develop the business, stakeholder, solution, and transition requirements for your project, and understanding what your project stakeholders need from the new solution.

Chapter 6, “Controlled Middle: Requirements Analysis and Design Definition,” takes your elicited requirements information and makes sense of it. The tasks in this knowledge area focus on analyzing the stated requirements from your elicitation efforts and building the real stakeholder or solution requirements for your project.

Chapter 7, “Controlled End: Solution Evaluation,” focuses on assessing proposed solutions, allocating requirements to solution components, and validating the solution to make sure that it will meet the business need and deliver value to the organization and its stakeholders.

Chapter 8, “Underlying Competencies,” defines the core framework of business, technical, and domain knowledge possessed by effective business analysts. Your core framework of knowledge is enhanced by your management, interpersonal, business, and structured problem-solving skills.

Chapter 9, “Perspectives,” steps through five perspectives on business analysis. You will dig into business analysis work on agile, business intelligence, information technology, business architecture, and business process management projects.

Appendix A, “Advice on Completing Your Exam Application,” examines the required qualifications and application process for successfully completing and submitting your application to sit for the CBAP® or CCBA™ certification exam.

Appendix B, “Knowledge Areas, Tasks, and Elements,” lists the knowledge areas, tasks, and elements to assist you in your study efforts.

Appendix C, “Mapping Techniques, Stakeholders, and Deliverables to Knowledge Areas and Tasks,” provides you with a coverage matrix mapping business analysis techniques, deliverables, and stakeholders to the knowledge area tasks that use them.

Appendix D, “Quick Summary of Business Analysis Techniques,” provides you with brief descriptions of each business analysis technique in the *BABOK® Guide*.

Appendix E, “Quick Summary of Business Analysis Deliverables,” provides you with brief descriptions of each deliverable produced as a business analysis task output in the *BABOK® Guide*.

Appendix F, “Answers to Review Questions,” contains both the answers and explanations for the chapter review questions.

Glossary: A glossary of terms is available with the online testing materials in PDF format.

BABOK® Techniques Matrix: Maps of techniques, stakeholders and deliverables across the knowledge area tasks are available for download in Microsoft Excel format.

How to Become CBAP®/CCBA™ Certified

The CBAP® and CCBA™ certification exams each address all six knowledge areas from the *BABOK® Guide*. The exams also test your knowledge of sources referenced by the *BABOK® Guide* and your own business analysis experience.

The CBAP® exam is designed for experienced business analysts, while the newer CCBA™ exam targets folks who have less experience in the business analysis profession. You can apply and pay for the exams online using the IIBA™ website. Most people schedule and take the exams in a testing center and complete the questions on a computer. Feedback is immediate as to whether you have passed or failed the exam once you submit your finished set of questions. Let's take a look at each exam in a bit more detail.

More on the CBAP® Exam

The CBAP® exam targets experienced business analysts. The exam contains 150 questions that must be answered within 3.5 hours. The questions you will be facing are based on Bloom's Taxonomy, which is discussed later in this section.

Requirements for candidates sitting the CBAP® exam include 7,500 hours of business analysis work experience in the last 10 years, demonstrated experience and expertise in four of the six knowledge areas, a high-school education or equivalent, and 21 hours of business analysis-related professional development in the last four years. You will also be required to provide two references from a career manager, client, or CBAP®. These requirements to take the exam are discussed in detail in Appendix A, "Advice on Completing Your Exam Application."

More on the CCBA™ Exam

The CCBA™ exam provides newer, less experienced business analysts with their first step toward obtaining the CBAP® certification. This exam targets individuals who are proficient in some aspects of business analysis, are in the process of developing business analysis skills and expertise, and who apply business analysis to smaller scope and less complex tasks and projects.

Requirements for candidates taking the CCBA™ exam include a minimum of 3,750 hours of business analysis work, aligned with the *BABOK® Guide*, in the last seven years with at least 900 hours in two of the six knowledge areas or 500 hours in four of the six knowledge areas, a minimum of 21 hours of Professional Development, and a high-school education or equivalent. You will also be required to provide two references from a career manager, client, or CBAP®.

The CCBA™ certification expires after five years. The expectation is that recipients will then apply to take the CBAP® exam as a more experienced

business analyst. There is also an option to retake the CCBA™ exam if you have not yet met the required CBAP® exam level of experience during that time period.

What's on the Exams

Both CBAP® and CCBA™ exams contain 150 questions that must be answered within 3.5 hours. The passing mark for your scored exam is calculated based on psychometric procedures that the IIBA™ does not disclose to the public. The CBAP® and CCBA™ Exam Blueprints indicate the relative weight of each knowledge area by providing you with the percentage of questions from that knowledge area on your exam. The percentages are provided for you in [Table 1.1](#). Because of rounding issues, some of the percentages do not add up to exactly 100 percent.

TABLE 1.1 Exam knowledge area and question breakdown

Knowledge Area	CBAP® Exam % of Questions	CCBA™ Exam % of Questions
Business Analysis Planning and Monitoring	14%	12%
Elicitation and Collaboration	12%	20%
Requirements Life Cycle Management	15%	18%
Strategy Analysis	15%	12%
Requirements Analysis and Design Definition	32%	30%
Solution Evaluation	14%	6%

All the questions on your exam are multiple-choice questions with four possible answers from which to select. There are no penalties for incorrect answers, so remember to attempt to answer every question.

Types of Questions

In 1956, Benjamin Bloom, an educational psychologist at the University of Chicago, proposed his Taxonomy of Educational Objectives, classifying learning objectives into six hierarchical levels: knowledge, comprehension, application, analysis, synthesis, and evaluation. This taxonomy drives the structure and style of the exam questions you will be seeing on your CBAP® and CCBA™ exams, as the questions will range across this entire taxonomy. Questions may also have a scenario for reading before the body of one or more questions.

The breakdown of questions across Bloom's Taxonomy is not provided in the IIBA™'s exam blueprint. As a rule of thumb, you should expect to see approximately 70 percent to 80 percent of your questions taken from the easier

question types (knowledge, comprehension, application, and analysis) in the taxonomy and 20 percent to 30 percent taken from the more difficult question types (synthesis and evaluation).

If you are able to recognize the type of question you are being asked, you can use this recognition to arrive at the correct answer to that question. Let's take a look at each question type in more detail:

Knowledge Questions Knowledge questions test your ability to know specific facts and recall information that you have learned. This information may be straight from the *BABOK® Guide*, or it may be something you have learned from another source. These questions are straightforward and remind us of the traditional multiple-choice questions from exams we took in our younger days. Here is an example of a knowledge question:

Which type of requirement describes high-level organizational needs?

- A. Business
- B. Stakeholder
- C. Functional
- D. Transition

This is a “define the term” question, and the correct answer is A. As stated in the *BABOK® Guide* glossary, business requirements describe the higher-level business rationale for your project or initiative. Answering this question correctly requires you to recall the definitions for the different types of requirements found in the *BABOK® Guide*.

Exam Spotlight

Notice that the wording of the question and the correct answer may not be word for word from the *BABOK® Guide*. This is something you will commonly see in the certification exams, so be sure that you understand what you are learning versus simply memorizing the information.

Comprehension Questions Comprehension questions require you to interpret facts and understand meanings. This is a step up from a knowledge question, where simple memorization and recall usually provide you with the correct answer. Here is an example of a comprehension question:

What type of requirements contains the environmental conditions of the solution?

- A. Transition requirements
- B. Stakeholder requirements
- C. Business requirements
- D. Solution requirements

This is a “check your understanding” question, and the correct answer is D. As stated in the *BABOK® Guide* glossary, solution requirements include both functional and nonfunctional requirements for a particular project. This question requires understanding of the requirements types found in the *BABOK® Guide* and the knowledge that environmental conditions are nonfunctional requirements, which are a subset of the solution requirements.

Exam Spotlight

Notice that all of the answers in this example deal with the actual classes of requirements found in the *BABOK® Guide*. There are no distracter answers that jump up and tell you they are incorrect. Each possible answer is something you have been studying. Beware of the distracter answers that are good answers, and make sure you know the correct answer for the question you are being asked!

Application Questions Application questions raise the bar a bit more by asking you to use information to solve problems. These questions take your knowledge and comprehension, combine them, and ask you to do something with the result. Here is an example of an application question:

Transition requirements are typically prepared after which requirements document is completed?

- A. Solution requirements
- B. Stakeholder requirements
- C. Business requirements
- D. System requirements

This is a “use the information” problem asking you about the logical sequence for developing the types or classes of requirements on a project. Be sure to answer using the *BABOK® Guide* classification scheme and a generic life cycle versus answering from your organization’s scheme and life cycle models unless they are exactly the same. The correct answer is A. Once the solution requirements are defined, the transition requirements for the solution can be built.

Exam Spotlight

Watch for the modifiers in your exam questions, such as *most, least, best, or worst*. They add difficulty to the question as they ask you to select the correct answer that falls at the appropriate end of this sliding scale—best versus worst or least versus most. That usually means all of the answers are correct, but some answers may be more or less correct than others.

Analysis Questions Analysis questions are a bit more difficult to navigate. This question type asks you to recognize patterns and seek hidden meanings in the information you are provided. A common type of analysis question is looking at and analyzing a series of process or activity-related steps performed by the business analyst. Here is an example of an analysis question:

To capture the process of provisioning a circuit, the business analyst observed an ordering supervisor for half a day. The resulting information could then be incorporated into all of the following types of requirements *except*:

- A. Transition requirements
- B. Solution requirements
- C. Stakeholder requirements
- D. Functional requirements

This question is a pattern question focusing on a recommended series of steps to be followed by the business analyst who is using observation as a technique to elicit or analyze project requirements. The twist is that you are looking for the wrong answer this time around. The correct (wrong) answer is A. The solution capability is not usually found in the transition requirements for a solution.

Exam Spotlight

Watch for the positives and negatives in your exam questions, such as *not* or *except*. If you miss the negative, it is easy to get an answer wrong, even for a question to which you know the answer.

Synthesis Questions Synthesis questions test your ability to relate facts and draw conclusions based on the information you are given. Here is an example of a synthesis question:

After reviewing the existing process to approve a new cell phone order, Ginger realized that the senior manager is not always available to manually approve the purchase. She documented the capabilities that facilitate a faster ordering approval process relative to the existing situation. She felt that the existing process was inefficient and that it needed to be changed. What would be an appropriate way for Ginger to express the cause of the current cell phone ordering delays?

- A. Blame the manual process for the inefficiencies.
- B. State all of the facts in a neutral manner.
- C. Express opinions on how to fix the process.
- D. Insist that approvers adhere to strict deadlines.

You are being asked to “draw a conclusion” based on the specific scenario you have been provided within the body of the question. Ginger is being asked to

effectively use her underlying competencies as a business analyst to solve a problem. Her best choice is to confront the problem and lay out all the information for the decision makers to analyze and then decide what to do. The correct answer is B.

Exam Spotlight

Watch for too much information. Occasionally (as in the previous question statement) more information is given than is needed to answer the question correctly. Don't let extra, unrelated information lead you to select an incorrect answer or waste too much time on a particular question.

Evaluation Questions Evaluation questions expect you to assess ideas and make reasoned judgments. Take a look at the following example of an evaluation question:

To document why your project was initiated, it is appropriate to include the:

- A. Business case
- B. Project mandate
- C. Solution approach
- D. Business goals

This is a “reasoned judgment” style of question based on what you know and the fact that you understand what is required in this particular situation. Typical business analysis documents used to initiate a project are created in the Strategy Analysis knowledge area and include the business case, required capabilities, solution scope, and business need. The correct answer is A.

Exam Spotlight

When you are taking the exam, make sure you are able to read the questions and possible answers swiftly but accurately. You need to understand what the question is about before you can select the correct answer. Adult readers are notorious for skimming, scanning, and searching when they read. This can cause you to jump to selecting the wrong answer based on what you think you just read. Train yourself out of these bad habits and learn to read the actual question being presented.

Remember that you will face 150 questions of various question types on your CBAP® or CCBA™ exam. You need to navigate these questions efficiently and effectively to achieve a passing score on your exam. Although there is no substitute for knowing and understanding how the *BABOK® Guide* says you

should do your business analysis job, your comfort with question types may also be of assistance.

How to Use This Book

The book includes several testing features, both in the book and available for download. Following this introduction is an assessment test that you can use to check your readiness for the actual exam. Take this test before you start reading the book. It will help you identify the areas you may need to brush up on. The answers to the assessment test appear after the last question of the test. Each answer includes an explanation and a note telling you in which chapter this material appears.

An “Exam Essentials” section appears at the end of every chapter to highlight the topics you’ll most likely find on the exam and help you focus on the most important material covered in the chapter so that you’ll have a solid understanding of those concepts. However, it isn’t possible to predict what questions will be covered on your particular exam, so be sure to study everything in the chapter.

Review questions are also provided at the end of every chapter. You can use these to gauge your understanding of the subject matter before reading the chapter and to point out the areas in which you need to concentrate your study time. As you finish each chapter, answer the review questions and then check to see whether your answers are correct—the correct answers appear in Appendix F. You can go back to reread the section that deals with each question you got wrong to ensure that you answer the question correctly the next time you are tested on the material. If you can answer at least 80 percent of the review questions correctly, you can probably feel comfortable moving on to the next chapter. If you can’t answer that many correctly, reread the chapter, or the section that seems to be giving you trouble, and try the questions again.



Don’t rely on studying the review questions exclusively as your study method. The questions you’ll see on the exam will be different from the questions presented in the book. There are 150 randomly generated questions on the CBAP® exam and the CCBA™ exam, so it isn’t possible to cover every potential exam question in the “Review Questions” section of each chapter. Make sure you understand the concepts behind the material presented in each chapter and memorize all the formulas as well.

Finally, you will notice various “Real World Scenario” sidebars throughout each chapter. These are designed to give you insight into how the various tasks and knowledge areas apply to real-world situations.

Interactive Online Learning Environment and Test Bank

The interactive online learning environment that accompanies the *CBAP®/CCBA™: Certified Business Analysis Study Guide, Second Edition* provides a test bank with study tools to help you prepare for the certification exam—and increase your chances of passing it the first time! The online test bank runs on multiple devices. It includes the following:

Sample Tests All the questions in this book are provided, including the assessment test at the end of this introduction and the chapter tests that include the review questions at the end of each chapter. Use these questions to test your knowledge of the study guide material. In addition, there are two CBAP bonus practice exams with 50 questions each, as well as two CCBA bonus practice exams with 50 questions each. Take these practice exams just as if you were actually taking the exams (that is, without any reference material). When you have finished the first exam, move on to the next exam to solidify your test-taking skills. If you get more than 85 percent of the answers correct, you're ready to take the real exam.

Flashcards The online text bank includes more than 100 flashcards specifically written to hit you hard, so don't get discouraged if you don't ace your way through them at first. They're there to ensure that you're really ready for the exam. And no worries—armed with the review questions, practice exams, and flashcards, you'll be more than prepared when exam day comes. Questions are provided in digital flashcard format (a question followed by a single correct answer). You can use the flashcards to reinforce your learning and provide last-minute test prep before the exam.

Other Study Tools A glossary of key terms from this book is available as a fully searchable PDF. A BABOK® Techniques Matrix is also available as an Excel spreadsheet.



Go to www.wiley.com/go/sybextestprep to register and gain access to this interactive online learning environment and test bank with study tools.

Test Taking Tips And Advice

On your exam day, it is important that you be relaxed, psychologically prepared, and confident. Try to be well rested and adequately nourished when you take the exam. Staying up all night before the exam for some last-minute studying is not a good idea.

It is a good idea to make sure you know the location of your testing center prior

to exam day. We suggest that you do a “drive by” of the location so you know where you are going and exactly how to get there. You should also call the day before to confirm your exam date and time and the hours of operation. A friend, Peggy, showed up at her testing center to sit a certification exam only to discover that the testing center location had been moved the week before. Peggy had to rush to the other location and then begin the exam. Luckily, Peggy was an early bird, so the damage was minimal. The testing center staff told her that she had been notified of this testing center relocation by email, but Peggy could find no message from them in her inbox. Try to avoid that kind of last-minute stress if you can.

When you arrive at the testing center, you will have to lock up your personal belongings in a locker or leave them in your car for the duration of your exam. You cannot take any food or beverages into the exam, so they must be consumed ahead of time or stored in the locker as well. Be sure to give yourself plenty of time to drink that extra-large latte with four shots of espresso in it. The testing center staff will provide you with scratch paper and pencils. They will also take you into the testing area, seat you at your computer, provide you with headphones to muffle the noise, and confirm that the correct exam is being provided to you.

You have some time before the exam must start if you take the tutorial on how to use the exam software. We recommend that you take the tutorial even though you already know how to point and click. You can use this time to jot down any cheat sheet notes on the scrap paper that you have prepared prior to the exam. Of course, these notes and reminders must all be in your head since you can't take your own paper into the testing area.

Be aware that there might be other people in the testing area taking a wide variety of exams, so people may come and go during your testing window. If you are easily distracted, this activity may take your attention away from your exam. You may take a break at any time during your exam; however, the timer keeps going while you are away from your seat.

How to Contact the Author

Feedback about this book is welcome. If you have specific questions or comments, please send a message to Susan Weese at susanweese@icloud.com. You can also post questions and comments on Susan's exam-focused blog at cbapccba.blogspot.com. Her blog offers CBAP® and CCBA™ exam advice and support. Sybex strives to keep you supplied with the latest tools and information you need for your work. Please check the book's update page on the Sybex website at www.sybex.com/go/cbap. Additional content and updates that supplement this book will be posted if the need arises.

CBAP®/CCBA™: Certified Business Analysts Study Guide

BABOK® Guide Version 3.0 Knowledge Areas and Underlying Competencies

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Plan Business Analysis Approach	2
Plan Stakeholder Engagement	2
Plan Business Analysis Governance	2
Plan Business Analysis Information Management	2
Identify Business Analysis Performance Improvements	2
Strategy Analysis	
Analyze Current State	3
Define Future State	3
Assess Risks	3
Define Change Strategy	3
Elicitation and Collaboration	
Prepare for Elicitation	5
Conduct Elicitation	5
Confirm Elicitation Results	5
Communicate Business Analysis Information	5
Manage Stakeholder Collaboration	5
Requirements Analysis and Design Definition	
Specify and Model Requirements	6
Verify Requirements	6
Validate Requirements	6
Define Requirements Architecture	6
Define Design Options	6
Analyze Potential Value and Recommend Solution	6
Solution Evaluation	
Measure Solution Performance	7
Analyze Performance Measures	7
Assess Solution Limitations	7

Assess Enterprise Limitations	7
Recommend Actions to Increase Solution Value	7
Requirements Life Cycle Management	
Trace Requirements	4
Maintain Requirements	4
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Approve Requirements	4
Underlying Competencies	
Analytical Thinking and Problem Solving	8
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Business Knowledge	8
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The BABOK® Guide Version 3.0 is subject to change at any time without prior notice and at the IIBA™'s sole discretion. Please visit IIBA™'s website (www.theiiba.org) for the most current listing.

Assessment Test

1. Who determines what *BABOK® Guide* tasks are appropriate for their project?
 - A. Portfolio governance board
 - B. Business analysis team
 - C. Program or project manager
 - D. Key project stakeholders
2. Which statement about business analysis stakeholders is *false*?
 - A. They are likely to participate in business analysis tasks.
 - B. They are a set of roles that must be filled for the project.
 - C. They have a vested interest in the project and its outcome.
 - D. They interact with the business analyst in specific ways.
3. What term is used to define an area undergoing analysis, including both an organization and its external stakeholders?
 - A. Domain
 - B. Solution
 - C. Requirement
 - D. Scope
4. Which statement best describes the relationship between the lead business analyst (BA) and project manager (PM) when planning the resources and tasks for business analysis activities?
 - A. BA manages all stakeholders; PM manages project team.
 - B. BA assigns all team roles; PM manages team work efforts.
 - C. BA oversees project processes; PM manages overall project.
 - D. BA manages business analysis work; PM manages overall project.
5. The business analysis plan is typically with and is a of the overall project plan.
 - A. Estimated, element
 - B. Managed, subproject
 - C. Integrated, component
 - D. Produced, subset
6. What output is produced from conducting stakeholder analysis?
 - A. Stakeholder summary matrix and chart

- B. Stakeholder roles and responsibilities
 - C. Stakeholder RACI matrix and onion diagram
 - D. Stakeholder list, map, or personas
7. What does the Business Analysis Core Concept Model (BACCM™) define?
- A. Roles and characteristics of stakeholder groups and individuals
 - B. Conceptual framework for the business analysis profession
 - C. Levels or types of requirements that will be defined for a project
 - D. Key terms and definitions used by the business analysis team
8. What describes the parts of the enterprise a change will impact?
- A. Business analysis scope
 - B. Change scope
 - C. Methodologies, approaches, and techniques
 - D. Underlying competencies
9. Which knowledge area's activities are often performed as pre-project work?
- A. Solution Evaluation
 - B. Strategy Analysis
 - C. Requirements Analysis and Design Definition
 - D. Requirements Life Cycle Management
10. Your organization has received a customer complaint about errors that the customer encountered when trying to place an order on the company website. As a result, a business need is evaluated. At which level of the enterprise was this business need identified?
- A. Top-down
 - B. External drivers
 - C. Middle management
 - D. Bottom-up
11. What describes an organization's business processes, software, hardware, people, operations, and projects?
- A. Business architecture
 - B. Strategic architecture
 - C. Enterprise architecture
 - D. Technical architecture
12. The business analysis team is defining new capabilities for a current software system along with the potential value expected from these changes. Which task are they performing?

- A. Perform gap analysis
 - B. Analyze current state
 - C. Define future state
 - D. Define change strategy
3. Ginger has decided that making a new, innovative sales application available to the company's sales force is a way to increase sales revenue in the future. Her company and their competitors have not used this technology in this way before. Which type of risk tolerance does this example illustrate?
- A. Risk-averse
 - B. Risk-seeking
 - C. Risk-neutral
 - D. Risk-ready
4. Which technique compares an organization's strategies, operations, and processes against the "best-in-class" strategies, operations, and processes of their competitors and peers?
- A. Decision analysis
 - B. Benchmarking
 - C. Feasibility study
 - D. Brainstorming
5. What type of elicitation is taking place when a business analyst uses a software prototype to elicit and confirm user requirements regarding the usability of the interface?
- A. Contextual
 - B. Collaborative
 - C. Experiment
 - D. Research
6. Which technique is used when managing stakeholder collaboration to stimulate teamwork and collaboration?
- A. SWOT analysis
 - B. Observation
 - C. Prototypes
 - D. Collaborative games
7. You are preparing to elicit requirements from a group of key stakeholders. Which of the following high-level preparation activities will you *not* be performing?
- A. Determine work products.
 - B. Conduct a contextual inquiry.

- C. Decide the elicitation techniques.
 - D. Establish elicitation logistics.
8. All of the following are inputs, guidelines, or tools used when confirming elicitation results *except*:
- A. Elicitation results (confirmed)
 - B. Elicitation activity plan
 - C. Elicitation results (unconfirmed)
 - D. Existing business analysis information
9. As part of your elicitation efforts, you are inspecting a person's work environment for the tools and information assets they use to perform their daily work. Which type of observation are you performing?
- A. Active observation
 - B. Contextual inquiry
 - C. Passive observation
 - D. Temporary apprentice
10. What output is produced when preparing for elicitation?
- A. Business analysis information
 - B. Stakeholder engagement
 - C. Elicitation results (confirmed)
 - D. Elicitation activity plan
11. When does the requirements life cycle begin?
- A. With development of a solution
 - B. With representing a need as a requirement
 - C. With retiring all or part of a solution
 - D. With approval of a business case
12. What traceability relationship is used when you are including a requirement that is necessary only if another requirement is implemented?
- A. Necessity
 - B. Effort
 - C. Satisfy
 - D. Derive
13. Which deliverable defines how requirements will be managed for reuse in an organization?
- A. Business analysis approach
 - B. Governance approach

- C. Requirements architecture
 - D. Information management approach
- !4. What key input should be available to the business analyst when they are preparing to prioritize requirements?
- A. Designs
 - B. Requirements
 - C. Proposed change
 - D. Solution scope
- !5. What are the things you believe to be true on your project but that you have not actually verified?
- A. Capabilities
 - B. Constraints
 - C. Assumptions
 - D. Limitations
- !6. What types of requirements are typically developed using the tasks found in the Requirements Analysis and Design Definition knowledge area?
- A. Business
 - B. Stakeholder
 - C. Solution
 - D. All of the above
- !7. Which of the following tasks is not part of the Requirements Analysis and Design Definition knowledge area?
- A. Verify requirements.
 - B. Allocate requirements.
 - C. Define solution options.
 - D. Validate requirements.
- !8. You have decided to prioritize your solution requirements based on a cost-benefit analysis of their relative value to the organization. What is your basis for prioritization?
- A. Policy compliance
 - B. Business risk
 - C. Technical risk
 - D. Business value
- !9. You are describing the key objectives of modelling the project's requirements to the project manager. The first objective is to understand what models are appropriate for the business domain and solution scope. What is the second

objective?

- A. Decompose business analysis information into components.
 - B. Explicitly represent requirements and their attributes.
 - C. Articulate requirements at the right level of abstraction.
 - D. Define measurable evaluation criteria for each requirement.
- o. Which task is an ongoing process to ensure that stakeholder, solution, and transition requirements align to the business requirements?
- A. Allocate requirements.
 - B. Validate requirements.
 - C. Organize requirements.
 - D. Verify requirements.
31. What is a key distinction between Solution Evaluation knowledge area tasks and similar tasks performed as part of Strategy Analysis or Requirements Analysis and Design Definition?
- A. Iterative and incremental approach to doing work
 - B. Existence of a working solution or solution component
 - C. Involvement of the testing team and the business analyst
 - D. Level of detail found in the actual work efforts
32. Which of the following items is not a stage of solution development?
- A. Pilot release
 - B. Proof of concept
 - C. Network diagram
 - D. Operational release
33. Which element is *not* one of the five elements used to analyze performance measures?
- A. Risks
 - B. Trends
 - C. Complexity
 - D. Accuracy
34. Which technique assists you in understanding current business decisions as part of assessing solution limitations?
- A. Functional decomposition
 - B. Business rules analysis
 - C. Decision analysis
 - D. Process modelling

5. Which tools and guidelines are used when recommending actions to increase solution value?
- Business objectives, current state description, and solution scope
 - Risk analysis results, change strategy, and business objectives
 - Business objectives, future state description, and change strategy
 - Risk analysis results, current state description, and solution scope
6. Sam has worked for you for 11 months and has commented several times how much he appreciates all the coaching he has received while working for you. He stated that he has learned a lot just by observing your leadership style when working with others in the organization. This is an example of which of the following types of power?
- Reward power
 - Expert power
 - Legitimate power
 - Referent power
7. Haley is a junior business analyst assigned to job shadow a senior user to discover how this user does their daily job. What business analysis technique is Haley using?
- Brainstorming
 - User stories
 - Observation
 - Interviews
8. Experienced business analysts are familiar with existing solutions and their capabilities within the organization. This allows them to effectively:
- Recommend appropriate team members to carry out the solution.
 - Challenge the “as-is” state and create new paradigms.
 - Identify, assess, and implement changes to those solutions.
 - Document those existing solutions to expedite project delivery.
9. What is the formula for calculating the number of lines of communication in a network?
- $(n \times (2n))/2$
 - $(n \times (n-2))/2$
 - $(n \times (n-1))/2$
 - $(n \times (n-1))/4$
10. You are a business analyst applying leadership and facilitation skills to help a larger team reach a decision on a set of solution requirements. You are exhibiting skills from which underlying competency area?

- A. Analytical thinking
- B. Behavioral knowledge
- C. Communication skills
- D. Interaction skills

Answers to Assessment Test



The chapter references given for the solutions to this exam are chapters of this book, *not* the chapters of the *BABOK® Guide*. You will find the *BABOK® Guide* reference information in parentheses following the chapter reference.

1. B. The business analyst and the business analysis team determine which *BABOK® Guide* tasks and techniques are appropriate for their organization and their projects. For more information, see Chapter 1. (Intro)
2. B. The list of business analysis stakeholder roles is *not* a set of roles that must be filled for a project or initiative. They are a suggested set of generic stakeholder roles that may play a role in business analysis activities. For more information, see Chapter 1. (Intro)
3. A. A domain is the area undergoing analysis and may include both the organization and its stakeholders. For more information, see Chapter 1. (Intro)
4. D. The lead business analyst or the business analysis team needs to develop, define, and manage the roles and tasks associated with business analysis activities in coordination with the project manager. The business analyst is responsible for providing clearly defined requirements deliverables for the project. For more information, see Chapter 1. (Intro)
5. C. The business analysis plan is typically integrated with and a component of the overall project plan. This is the responsibility of the project manager. For more information, see Chapter 2. (BAPM)
6. D. The output from conducting stakeholder analysis is the stakeholder list, map, or personas. For more information, see Chapter 5. (E&C)
7. B. The BACCM™ provides a conceptual framework for the business analysis profession. The model covers six core concepts for each knowledge area: change, need, solution, stakeholder, value, and context. For more information, see Chapter 1. (Intro)
8. B. In the *BABOK® Guide* structure, the change scope defines the parts of the enterprise a change encompasses and to what extent it impacts the objectives and operations of the enterprise. For more information, see Chapter 1. (Intro)
9. B. Many activities performed by a business analyst are not part of a specific project. Strategy Analysis activities are often considered pre-project work or an early feasibility phase of a project. For more information, see Chapter 3. (SA)

- o. B. The business need evaluation was triggered by a customer complaint. This trigger is an external driver. For more information, see Chapter 3. (SA)
11. C. The enterprise architecture describes an organization's business processes, software, hardware, people, operations, and projects, as well as the relationships between them. For more information, see Chapter 3. (SA)
2. C. The Define Future State task in the Strategy Analysis knowledge area defines new capabilities and the potential value expected from these changes. For more information, see Chapter 3. (SA)
3. B. Risk seeking is the risk tolerance showing a willingness to accept or even take on more risk relative to a change in return for higher potential value. For more information, see Chapter 3. (SA)
4. B. Used during Strategy Analysis activities, benchmarking compares an organization's strategies, operations, and processes against the "best-in-class" strategies, operations, and processes of their competitors and peers. For more information, see Chapter 3. (SA)
15. C. When conducting elicitation, there are three types of elicitations the business analyst can use: collaborative, research, or experiments. Experiments can be either observational studies, proofs of concept, or prototypes. For more information, see Chapter 5. (E&C)
6. D. Collaborative games are used during elicitation to stimulate teamwork and collaboration by immersing participants in a safe and fun situation to share knowledge and experience on a given topic. For more information, see Chapter 5. (E&C)
17. B. When preparing for elicitation, the *BABOK® Guide* recommends the following activities take place: Determine the work products to be produced by the elicitation activity, decide the elicitation techniques to use, establish elicitation logistics, identify any supporting materials, and foster stakeholder collaboration. For more information, see Chapter 5. (E&C)
8. A. The elicitation results (unconfirmed) are an input to the Confirm Elicitation Results task. The elicitation activity plan and existing business analysis information are tools and guidelines for the task. The elicitation results (confirmed) are the output of the task. For more information, see Chapter 5. (E&C)
9. B. The three variations on the observation technique are active, passive, and contextual inquiries. Contextual inquiries involve inspecting a person's work environment for the tools and information assets they use to perform their work. For more information, see Chapter 5. (E&C)
- o. D. The output produced when preparing for elicitation is the elicitation activity plan. For more information, see Chapter 5. (E&C)
21. B. The requirements life cycle begins with the representation of a business need as a requirement. For more information, see Chapter 4. (RLCM)
22. A. Necessity, a subset of depends, is the traceability relationship used when including a requirement that should be implemented only if a related

requirement is also implemented. For more information, see Chapter 4. (RLCM)

- :3. D. The information management approach defines how requirements will be managed for reuse in an organization as part of the Maintain Requirements task. For more information, see Chapter 4. (RLCM)
- :4. B. When preparing to prioritize requirements, the key task inputs include the requirements themselves. For more information, see Chapter 4. (RLCM)
- :5. C. Assumptions are agreed-to facts that may influence an initiative. Assumptions are typically documented in the Business Case along with the solution alternatives to be considered. For more information, see Chapter 3. (SA)
- :6. D. All types of requirements can be developed in more detail using the tasks of the Requirements Analysis and Design Definition knowledge area. For more information, see Chapter 6. (RADD)
- :7. B. The allocate requirements task is part of the Solution Evaluation knowledge area. For more information, see Chapter 6. (RADD)
- :8. D. Business value is a basis for prioritizing requirements using a cost-benefit analysis of their relative value to the organization. For more information, see Chapter 4. (RLCM)
- :9. A. The four elements of the Specify and Model Requirements task are: 1. Understand what models are appropriate for the business domain and solution scope, 2. Decompose business analysis information into components, 3. Explicitly represent requirements and their attributes, and 4. Articulate requirements at the right level of abstraction. For more information, see Chapter 6. (RADD)
- :o. B. The Validate Requirements task in the Requirements Analysis and Design Definition knowledge area is an ongoing process to ensure that stakeholder, solution, and transition requirements align to the business requirements. For more information, see Chapter 6. (RADD)
- :j1. D. An important distinction between the tasks performed in the Solution Evaluation knowledge area and tasks performed in other knowledge areas is the existence of an actual solution or solution component that is implemented and operating in some form. For more information, see Chapter 7. (SE)
- :j2. C. A network diagram is a project planning technique and is not a stage of solution development.” For more information, see Chapter 7. (SE)
- :j3. C. The five elements used to analyze performance measures during Solution Evaluation are solution performance versus desired value, risks, trends, accuracy, and performance variances. For more information, see Chapter 7. (SE)
- :j4. C. The decision analysis technique assists you in understanding current business decisions as part of assessing solution limitations. For more information, see Chapter 7. (SE)

- 5. A. The tools and guidelines for the recommended actions to increase solution value task are the business objectives, current state description, and solution scope. For more information, see Chapter 7. (SE)
- 6. D. Referent power is given to you by your subordinates based on their respect and regard. For more information, see Chapter 8. (Competencies)
- 7. C. Haley is learning what the end user does in their job by observing how end users do their work. For more information, see Chapter 5. (E&C)
- 8. C. Experienced business analysts are familiar with existing solutions and their capabilities within the organization. This allows them to effectively identify, assess, and implement changes to those solutions. For more information, see Chapter 8. (Competencies)
- 9. C. The correct calculation for the number of lines of communication in a network is $(n \times (n-1))$ divided by 2, where n = the number of people or nodes in the network. For more information, see Chapter 8. (Competencies)
- 0. D. Interaction skills include the ability to work as part of a larger team and to help that team reach decisions. This is done through a combination of leadership and facilitation. For more information, see Chapter 8. (Competencies)

Chapter 1

Foundation Concepts

CBAP®/CCBA™ EXAM TOPICS COVERED IN THIS CHAPTER

- ✓ **Describe business analysis and the role of the business analyst.**
- ✓ **Explain the Business Analysis Core Concept Model (BACCM™).**
- ✓ **Explore the six business analysis knowledge areas.**
- ✓ **Recognize the basic contents, structure, and intent of the *BABOK® Guide*.**
- ✓ **Define the *BABOK® Guide* requirements classification scheme.**
- ✓ **Map business analysis activities to a generic project life cycle.**
- ✓ **Understand the content and intent of the *BABOK® Guide*.**



This chapter lays the foundation for navigating and understanding the content and intent of *A Guide to the Business Analysis Body of Knowledge®* (*BABOK® Guide*). It is our high-level look at what it means to be a business analyst and how to successfully perform business analysis work. Business analysts can be found in all facets of an organization—projects, programs, strategic planning, operations, or other initiatives. Although the examples in this chapter use projects and the project life cycle to step through the discipline, remember that business analysts do not have to be members of a project team to do their jobs. They can work almost anywhere.

The set of generally accepted best practices defined by the *BABOK® Guide* provides a business analysis framework defining areas of knowledge, associated activities and tasks, and the skills required to perform them. The scope of this standard covers pre-project activities, the full project life cycle, and the final product's operational life.

What Is Business Analysis?

Let's start with an example of how difficult it can be to do *business analysis* work when you are not certain where to begin. New business analysts start their careers in a number of ways. In the past, it was not uncommon for young software engineers to transition into the business side of an organization when their manager called them into their office, saying, "We are short-staffed, and I need you to figure out what the users need this new software application to do." The fledgling *business analyst* needed to discover who to talk to, what to ask, how to ask, and how to document the information that they discovered in a way that made sense to the development team and to the business. This was not an easy task the first time around!

In this situation, performing basic business analysis work took a lot longer than it seemed like it should. These unprepared rookie business analysts had great difficulty deciding exactly how to get started. There was no process in place to guide them and no one available to point them in the right direction. They found themselves longing to go back to their cubicles and just write some more code. Luckily, there is no need for business analysts to feel this way today. There are standards, books (like this one), websites, blogs, and tons of experienced folks out there to mentor and guide business analysts in getting the job done right.

Business analysis is the glue that holds successful organizations together. It is a distinct discipline focusing on identifying business needs, problems, and opportunities, and on determining the appropriate solutions to address them. The resulting projects and initiatives may focus on systems development, process improvement, organizational change, or some combination of the three. Business analysis touches all levels of an organization: strategic, tactical, and operational. Business analysts participate across the project and the product life cycles as they look at all aspects of an organization's enterprise architecture, stakeholder needs, business processes, software, and hardware.

The set of generally accepted best practices defined by the *BABOK® Guide* make this book an essential resource for every business analyst. You should take this basic business analysis framework and make it work for you and your projects. The areas of knowledge, associated activities and tasks, and the skills required to perform them will give you a valuable starting point for introducing, validating, or improving your business analysis processes throughout an organization. Even better, the scope of the *BABOK® Guide* covers pre-project activities, the full project life cycle and the final solution's operational life.

The *BABOK® Guide* focuses on building underlying competencies that make for a successful business analyst on today's projects and initiatives. The *BABOK® Guide* defines business analysis as "the practice of enabling change in an enterprise by defining needs and recommending solutions that deliver value to stakeholders." Put simply, a business analyst is defined as anyone performing these business analysis activities.

When looking at business analysis in an organization, you need to make sure

that you know how the organization views its business analysts. First, what is the role of the business analyst? Second, what is the expected relationship between the business analyst and the project manager? And third, who are the stakeholders with whom the business analyst will be interacting along the way? We will look at each of these topics next.

The Business Analyst's Role

The linchpin of successful business analysis is the business analyst performing the actual work. Their involvement in defining and validating *solutions* that address key business needs and goals is essential to both project and business success. According to the *BABOK® Guide*, “a business analyst is any person who performs business analysis tasks described in the *BABOK® Guide*, no matter their job title or organizational role.” Business analysts work as liaisons among *stakeholders* in order to understand the structure, policies, and operations of an organization, and to recommend solutions that enable the organization to achieve its goals.

So, what exactly is the job description for the business analyst? There have been many job postings lately that came straight from the *BABOK® Guide* role definition. That is a good sign. The adoption and integration of these principles as best practices in the corporate environment will lead to stronger business analysis process, better business analysts, and more credibility and consistency in the role of business analysts today. Here is a short list of the business analyst's job responsibilities from the *BABOK® Guide*:

- Discovers, synthesizes, and analyzes enterprise information
- Understands enterprise problems, opportunities, and goals in the context of the requirements
- Analyzes needs and solutions
- Devises strategies and drives change
- Facilitates stakeholder collaboration



In many organizations, the folks performing business analysis work do not have the job title of “business analyst.” The business analyst role can be filled by anyone performing business analysis work regardless of job title. The *BABOK® Guide* lists a number of job roles that may do business analysis work, such as business system analysts, requirements engineers, process analysts, product managers or owners, enterprise analysts, business architects, and management consultants.

Essential Skills of Effective Business Analysts

Business analysts must possess a wide spectrum of skills and knowledge. Being a technical expert in a particular area does not guarantee success as a business analyst on a project. In addition to the necessary business, technical, and *domain* knowledge, the business analyst should have management, interpersonal, business, and structured problem-solving skills.



Real World Scenario

Reviewing Requirements over a Cup of Coffee

Years ago, Phil was the technical team lead for a team working on an executive compensation system for top-level management. The team needed input from a small, closed community of senior and executive management customers in order to define the current and future processes.

Unfortunately, his key contact from this group felt that the job of customer interface had been given to a young, up-and-coming star who didn't have a clue. This made developing a rapport with the key customer contact almost impossible. However, the project deadlines remained inflexible, as they usually do.

Taking what little input was offered and doing significant research from other sources, the team compiled their draft of the business requirements document. The document was huge. It was single-spaced and double-sided, and it filled a 3-inch binder. There was a meeting to step through it. The customer contact was there and took her place at the head of the table. Phil sat at the opposite end of the table.

During the meeting, the customer's demeanor grew increasingly agitated. She hurled the requirements document down the table along with the exclamation, "I don't do this kind of menial work." Unfortunately, Phil reacted by returning the document in the same manner. His aim wasn't quite as true, and the document slammed into her coffee cup sending a spray of hot, sugary liquid into her lap. Her color changed from the red of aggravation to the scarlet of rage. She stalked out of the room. So much for creating rapport with the customer! In the end, it all worked out. Both parties apologized, and the project (meeting the business requirements that had been approved) was delivered. But how much better things could have been if this situation had been avoided in the first place.

Technical skills and expertise are necessary on the project team, but they are not the skills and knowledge that separate effective business analysts from the pack. Superior business analysis skills are not necessarily derived from a superior set of technical skills.

Soft skills and knowledge support and enable effective business analysis. Knowing what to do and when to do it is a good start for a business analyst, but how you actually do that work makes a big difference! The *BABOK® Guide*

refers to these behaviors as the *underlying competencies* of effective business analysts. The underlying competencies are in addition to knowing what business analysts produce from a work activity and a deliverable perspective. They encompass the interpersonal skills and additional business and technical knowledge that are necessary for doing the business analyst's job well. These essential skills range from applying structured analysis techniques to issue management to addressing solution usability concerns.

The *BABOK® Guide* puts the essential skills and knowledge of effective business analysts into six categories. Let's take a quick look at each of these categories that are the building blocks for the business analyst's skill and knowledge.

Analytical Thinking and Problem-Solving Skills Facilitating solutions to business problems would be impossible without a logical mind. Analytical thinking and problem-solving skills enable the business analyst to assess and understand a situation. Once that situation is fully understood, the business analyst assesses and recommends one or more potential solutions to address the business need, problem, or opportunity.

Behavioral Characteristics Effective business analysts apply personal integrity and strength of character when dealing with people, including the business analysis team, project team, and internal and external project stakeholders. The ability to build strong, lasting working relationships serves the business analyst, the enterprise, and the project or initiative well.

Business Knowledge It is impossible to be a liaison between the business and the technology if you have no understanding of the business. Skilled business analysts understand the internal and external business environment surrounding their projects, and they use that knowledge to make good decisions and recommendations.

Communication Skills The number-one reason for project failure is poor communication. Business analysts must have excellent communication skills, verbal, nonverbal, and written, in order to complete business analysis tasks.

Interaction Skills Good business analysts are team players. In large part, this is because of their ability to interact and work well with other members of the team. Leadership, negotiation, and facilitation skills play a key part in defining and agreeing to a solution to a business problem or need.

Tools and Technology Software applications are typically used by the business analyst to develop and manage requirements. This can range from using a word processor to document project scope to using a requirements management tool to develop detailed user and system requirements. Although using a requirements management tool is not a required skill, the ability to master and apply requirements management, word processing, and spreadsheet tools are desirable traits in experienced business analysts.



The underlying competencies of effective business analysts have

numerous pieces and parts. In Chapter 8, “Underlying Competencies,” we will discuss them in more depth along with a few additional skills that you might want to use on your projects.

The Business Analyst and the Project Manager

There is much buzz about the potential for overlap and conflict between the *project manager* and the business analyst. Interestingly enough, many project managers perform business analysis work early in their projects—developing feasibility studies, business cases, scope statements, and business-level requirements as part of project selection, initiation, and scope definition. Many project managers were part of the business analysis team earlier in their careers. As a result, many project managers have business analysis skills to complement and overlap their project management skill set.

The project manager’s responsibilities differ from the responsibilities of the business analyst in several ways. The project manager focuses on meeting the project objectives. They initiate, plan, and manage the project. The project manager makes sure the project team delivers a solution that meets requirements, the acceptance criteria, and the customer’s quality expectations. The project manager juggles the many constraints present on a project, such as scope, budget, schedule, resources, quality, and risk. On a large project, the business analysis team is only one part of the project resources the project manager is managing.

The business analyst and the project manager typically work closely together on projects and must maintain good communications. However, there is potential for the project manager and the business analyst to be in conflict with one another. The business analyst works with key stakeholders to understand the structure, policies, and operations of an organization and to recommend solutions. The project manager focuses on planning and managing the project to achieve the project objectives and deliver those solutions to the stakeholders. Where are they going to step on each other’s toes? There are two key areas for conflict: stakeholder communication and planning.

The project manager and the business analyst both need to communicate well with key stakeholders. Without planning and discussion, the project manager and the business analyst could easily come to blows about who “owns” the stakeholders, when in actuality the project “owns” the stakeholders. A good project-level communications plan needs to be built and followed to minimize potential areas of political game play and conflict. As far as planning goes, the business analysis team must remember that it is a subset of the project team. As such, any business analysis work plans they put together must be consistent with and roll up into the overall project plan.

Dealing with Key Stakeholders

There is no project without stakeholders. Stakeholders have a vested interest in the project and its outcome, and they are the major source of requirements,

constraints, and assumptions for the business analyst. Remember that stakeholder roles are like hats—one person may wear multiple hats and fill more than one role on a project.

There are a number of generic stakeholders who will interact with the business analyst across the project life cycle. While the list in [Table 1.1](#) doesn't cover every possible role, it is a good starting point for who should be involved with your business analysis activities. Many organizations have different names for the same role, so don't get excited if these are not the generic stakeholder roles with which you are familiar. In addition to the business analyst, there are a number of key stakeholder roles involved with business analysis activities. They are summarized in [Table 1.1](#).

TABLE 1.1 Key business analysis stakeholders

Stakeholder	Description
Customer	Uses the products, services, or solutions
Domain subject matter expert (SME)	Possesses detailed, in-depth knowledge of a particular topic or problem area of the solution scope or the business need
End user	Directly interacts with the resulting solution when it has been completed and deployed
Implementation SME	Is responsible for designing and implementing potential solutions and providing specialist expertise Subsets of the implementation SME role include developers, software engineers, organizational change management professionals, system architects, trainers, and usability professionals.
Operational support	Helps to keep the solution functioning by providing end-user support or day-to-day operational support
Project manager	Manages the work performed to deliver the solution
Tester	Verifies that the designed and constructed solution meets the requirements and quality criteria for that solution
Regulator	Defines and enforces standards for developing the solution or for the resulting solution itself
Sponsor	Authorizes the solution development work to be performed and controls the budget
Supplier	Provides products or services to the organization

Exam Spotlight

These stakeholder role names and definitions from the *BABOK® Guide* are exactly what you will see in your exam questions. The business analyst is a

stakeholder for all business analysis activities and is responsible and accountable for their execution. Remember that stakeholder roles are like hats. One person can wear one or many hats across the project life cycle. The roles are not necessarily the same as their job titles; however, they do indicate the job responsibilities and the level of accountability for the person filling that particular role on a project.

Reviewing the Business Analysis Core Concept Model (BACCM™)

The Business Analysis Core Concept Model (BACCM™) provides you with a conceptual framework that shows what it really means to be a business analyst. This framework creates a common, generic language describing the business analysis profession. You can use this common language to discuss what you do with a business analyst working in a different industry.

There are six concepts in the BACCM™: change, need, solution, stakeholder, value, and context. You need to understand all of these concepts in relation to one another to be an effective business analyst. They are the framework for a successful business analysis effort.

Change Change is the driving force for most projects and initiatives. Change takes place when one responds to satisfy a need. You need to be aware of the enterprise-level changes that will result from your project efforts and outcome.

Need Businesses and their stakeholders have needs that often result in projects. Needs are value-driven ways to address business problems or opportunities.

Solution Solutions are the end result of projects and initiatives. They resolve the problems or take advantage of the opportunities. Solutions satisfy needs within the context of the enterprise and its environment.

Stakeholder Stakeholders are the people who have a relationship to the change, need, or solution. Stakeholder analysis often groups stakeholders relative to these relationships.

Value Value is the worth of something to a stakeholder within the context of the enterprise. Business analysts assess value as a tangible or intangible thing. Business analysts should assess value from the key stakeholder's point of view.

Context Context is the environment where the change is taking place.

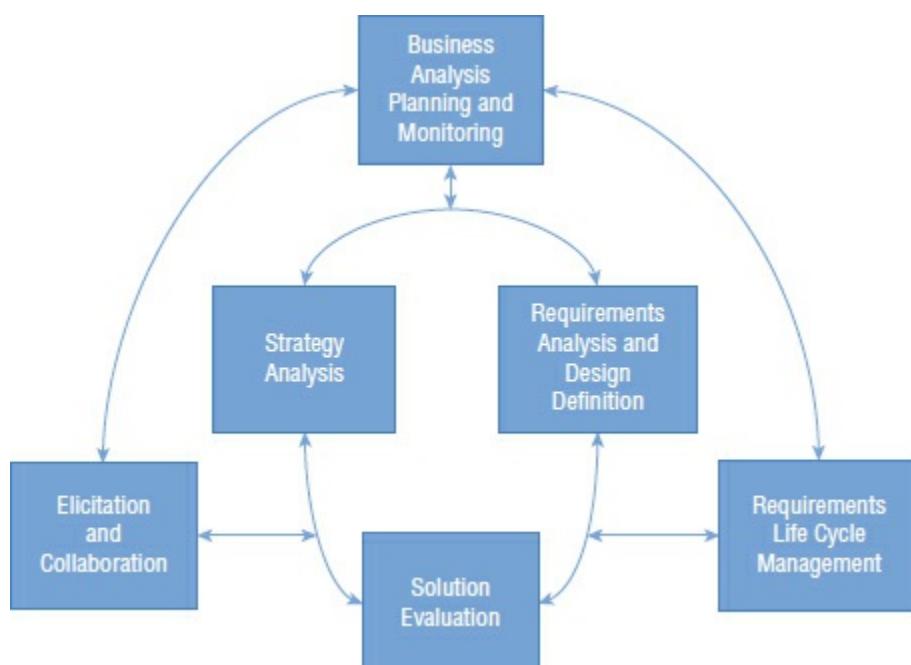
The BACCM™ and its six concepts help you assess the quality and completeness of the work you are doing. As you will see, the concepts intertwine as you work through a project. A change that affects the tasks, tools, inputs, or deliverables covered by one of the concepts presents an opportunity for reevaluation of the impact on the other five concepts. The magnitude of the change, as well as where you are in the project life cycle, determines how significant the changes may be. The effects can be felt both in your current projects and in what may need to change moving forward.

Exploring the Business Analysis Knowledge Areas

The *BABOK® Guide* is based on a set of *knowledge areas* guiding the business analyst when they perform business analysis activities at any point in the project or product life cycle. Knowledge areas define what business analysts need to understand and the *tasks* they should perform. They do not represent project phases, and their activities are not intended to be performed in a linear fashion. Tasks from one or more knowledge areas may be performed in any order (such as in succession, simultaneously, or iteratively), provided that the necessary inputs to each task are available.

Six knowledge areas are defined by the *BABOK® Guide*. If you are planning to take the Certified Business Analyst Professional (CBAP®) or Certification of Competency in Business Analysis (CCBA™) exam, you will need to memorize the high-level definition of each knowledge area, as well as the more detailed tasks, elements, inputs, and outputs. If you are interested in applying these knowledge areas to your work world, you will need to master the tasks and the skills in order to become an effective business analyst. [Figure 1.1](#) shows the relationships between the six knowledge areas listed here:

- Business Analysis Planning and Monitoring
- Elicitation and Collaboration
- Requirements Life Cycle Management
- Strategy Analysis
- Requirements Analysis and Design Definition
- Solution Evaluation



[FIGURE 1.1](#) Relationships between knowledge areas

Knowledge Area: Business Analysis Planning and Monitoring

In the Business Analysis Planning and Monitoring knowledge area, a business analyst plans how to approach the business analysis effort. The approach is a set of processes, templates, and activities used to perform business analysis in a specific context. The tasks organize and coordinate the performance of all other business analysis tasks. These planning and monitoring activities take place throughout the project life cycle. The results of this knowledge area guide the tasks found in the remaining five knowledge areas and set the performance metrics to be used to evaluate all business analysis work.

So, what is a business analyst to do? Well, the business analyst's task list for this particular knowledge area consists of the following:

- Planning the business analysis approach for the project
- Determining how to engage stakeholders, including stakeholder identification, analysis, and categorization
- Defining the business analysis governance activities for decision making
- Addressing business analysis information management needs
- Planning the requirements development and management process
- Managing and reporting on the business analysis effort

Knowledge Area: Strategy Analysis

Strategy Analysis focuses on how the business analyst identifies the business needs driving a project by performing problem definition and analysis. In addition to defining and refining these strategic or tactical needs, the business analyst is responsible for defining a feasible solution scope that can be implemented by the business. This work may also include developing a business case or feasibility study for a proposed project. Typically, the tasks in this knowledge area occur prior to or early in the project life cycle. The business analyst's task list for this knowledge area includes translating business strategy into proposed new business or enterprise solutions by doing the following:

- Defining and understanding the business problem or opportunity
- Assessing capability gaps in the organization by analyzing the current and future states
- Assessing risks relative to the proposed solution
- Defining the change strategy for the initiative
- Determining the most feasible business solution approach

Knowledge Area: Requirements Life Cycle Management

Requirements Life Cycle Management defines how the business analyst approaches managing and maintaining requirements. Tasks and techniques for managing changes, conflicts, and issues related to requirements are also

described. Business analysts perform requirement management tasks as part of requirements development work by doing the following:

- Managing requirements traceability
- Maintaining requirements for accuracy and reuse
- Addressing requirements prioritization
- Determining how requirements should change
- Facilitating requirements approval

Knowledge Area: Elicitation and Collaboration

Elicitation and Collaboration defines how business analysts work with stakeholders to elicit requirements and understand stakeholder needs and concerns. This knowledge area also addresses ongoing collaboration and communication during all business analysis activities. The business analyst's task list for this knowledge area consists of the following:

- Preparing for elicitation activities
- Meeting with stakeholders to conduct the elicitation activity
- Confirming, documenting, and recording the elicitation results
- Communicating and confirming elicitation results with key stakeholders

Knowledge Area: Requirements Analysis and Design Definition

Requirements Analysis and Design Definition describes how the business analyst progressively elaborates to define, refine, prioritize, and organize requirements. In essence, the business analyst takes the elicited information and makes sense of it to derive the real requirements for the project. This knowledge area also focuses on graphically modeling the requirements and resulting designs as well as documenting them. When performing these tasks, the business analyst should ensure the feasibility of the requirements while defining, describing, and refining the characteristics of an acceptable solution. The business analyst's task list for this knowledge area consists of the following:

- Specifying and modeling requirements and designs
- Verifying requirements and designs
- Validating requirements and designs
- Defining the architecture and structure of requirements
- Defining solution options
- Analyzing value and recommending a solution

Knowledge Area: Solution Evaluation

Solution Evaluation focuses on assessing and validating proposed, in progress,

and implemented solutions before, during, and after the project life cycle. A business analyst's attention is on the value that the solution will deliver to the enterprise, including the constraints that may impact value. While many tasks in this knowledge area take place later in the project life cycle, some solution-focused activities may occur quite early. The business analyst's task list for this knowledge area consists of the following:

- Defining solution performance measures
- Collecting and analyzing solution performance data
- Assessing solution limitations
- Assessing enterprise limitations
- Recommending actions to increase solution value

You will examine each knowledge area and every task within it in great detail in the coming chapters. You will need this level of knowledge to successfully prepare for and pass the certification exam. You will also need this level of knowledge to be an effective business analysis practitioner in your organization.

How Are the Knowledge Areas Organized?

The *BABOK™ Guide* breaks down knowledge areas into tasks that specify what work business analysts need to perform. The business analyst can dip into one or more tasks at any time—in any order—to select a deliverable or learn to apply a particular technique. The knowledge areas are not a road map or a methodology; they simply break business analysis stuff into common areas.

To achieve the purpose of a particular knowledge area, the business analyst must perform a defined set of high-level tasks. Each task has a particular purpose and adds value to the overall effort when performed. The expectation is that a business analyst will perform each task at least once during any project. Each knowledge area task is broken down into the following pieces:

- Purpose
- Description
- Inputs
- Elements
- Guidelines and Tools
- Techniques
- Stakeholders
- Outputs

The content of each task is defined using the same structure. Let's take a closer look at this structure now.

Purpose Each task starts off with a short description of its *purpose*: why that task is needed and what value performing the task creates.

Description The task description explains a task to the business analyst in greater detail, including what the task actually is, why the task is performed, and what the task should accomplish.

Inputs Inputs consist of the information and preconditions tasks require so that task can begin. These *inputs* must be usable by the task that needs them. Single or multiple business analysis tasks produce inputs externally.

Elements Elements are the detailed concepts that are necessary to perform a particular task. For some tasks, the *elements* are categories of things a business analyst must consider. For other tasks, the elements are subtasks a business analyst performs.

Guidelines and Tools Guidelines and tools list resources a business analyst uses to transform a task input into the resulting task output. *Guidelines* provide instructions to the business analyst for executing a task. *Tools* provide things the business analyst can use to perform the task.

Techniques Techniques guide the business analyst in the ways a particular task might be done. The *techniques* in the *BABOK® Guide* are best practices that many business analysts use. However, business analysts can certainly use techniques that are not found in the *BABOK® Guide*.

Exam Spotlight

When you are reviewing and learning the techniques from the *BABOK® Guide*, make sure you don't miss anything! Techniques are summarized in Appendix C, "Mapping Techniques, Stakeholders, and Deliverables to Knowledge Areas and Tasks," of this book and are defined in Chapter 10 of the *BABOK® Guide*. They can be used by any task, and many are used by more than one task.

Stakeholders All tasks come with a generic list of stakeholders who may be involved in performing that task or who might be affected by the task and its outcome. Interestingly enough, the business analyst is a stakeholder for every business analysis activity found in the *BABOK® Guide*. This makes perfect sense—the business analyst is responsible and accountable for making sure that these tasks are done and done well. Remember that earlier in this chapter we took a look at the key generic stakeholder roles that typically interact with business analysts on their projects.

Outputs Outputs are the results that successfully completed tasks deliver. One task can have a single or many *outputs*.

Exploring Requirements

Projects are successful when stakeholders, including business analysts, clearly state and agree upon desired accomplishments. For most projects, this statement consists of defining the high-level scope of the project along with its more detailed project requirements. The general definition of a requirement is something wanted or needed. Business analysts in many organizations spend a lot of time developing requirements. This is a good thing. Defining and documenting requirements allow a business analyst to quantify and document the needs, wants, and expectations of project stakeholders.

The *BABOK® Guide* uses the term *requirement* to cover many aspects of the business and its needs. Their broad view of requirements addresses both the current state of the business and its desired future state. Requirements may focus on the business, the users, or the systems and subsystems that already exist or are being considered. Requirements range from high-level enterprise capabilities to organizational structure and roles to processes and policies. Information systems fall into the requirements realm, as do business rules. Requirements analysis activities are also quite broad in nature. There is no prescription for the correct level of detail in your project requirements other than what is sufficient for understanding and subsequent action.

Distinguishing Between Requirements and Design

Requirements and *design* are closely linked. Many times, the distinction between requirements and design is unclear. Business analysts will use the same techniques to elicit, model, and analyze requirements and designs on their projects. [Figure 1.2](#) shows the relationship between requirements and design in the *BABOK® Guide*.

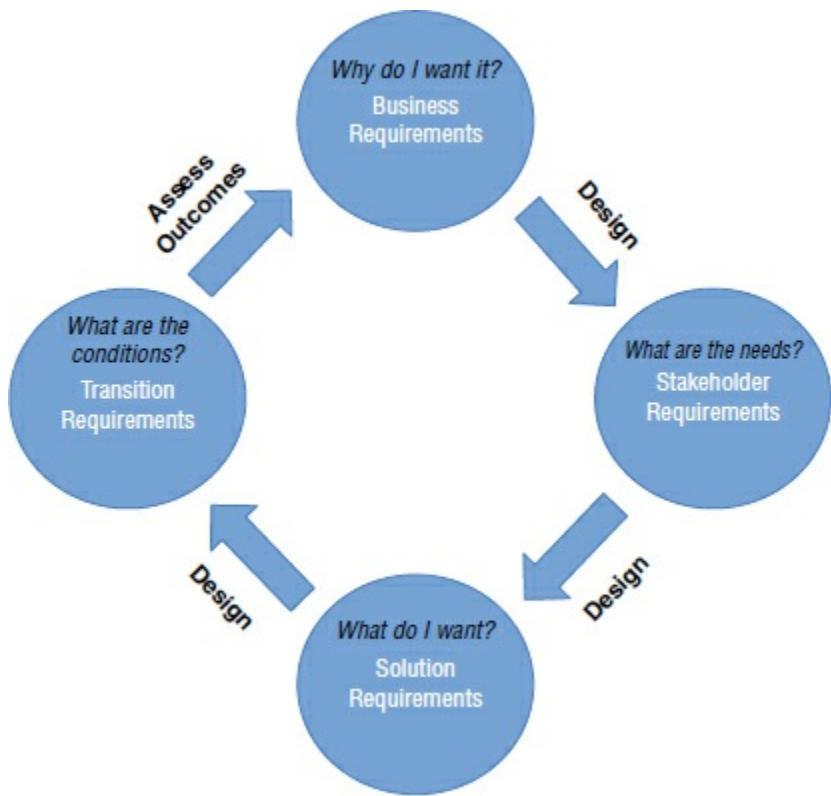


FIGURE 1.2 Requirements and design cycle

For the exam, remember that requirements focus on defining the opportunity or need to be addressed. Design focuses on the solution that will result from addressing that opportunity or need. When a business analyst is defining and documenting project requirements, the business analyst is building a “usable representation of a need.” When the focus of specifying and analyzing elicitation results is on the solution, the outputs being produced are referred to as *designs*.

Exam Spotlight

Remember that requirements focus on the need, and designs focus on the solution that will address that need.

Defining the Requirements Management Process

The requirements management process is a detailed subset of the business analysis approach, targeting how the team performs requirements development activities for a project. The process should be documented in the requirements management plan. This deliverable defines many things, including the following:

- How the team will deal with requirements traceability
- The explicit process for developing requirements

- How requirements will be prioritized
- What requirements attributes will be collected
- How changing requirements will be handled both during requirements development and after the requirements are agreed upon and baselined
- Who will review and approve requirements and any requested changes

In addition, the requirements management process defines the types or classes of requirements found on the project. Often, these requirements classes are associated with a particular requirements document. Classifying requirements allows the business analysis team to make sure that their project requirements are reviewed and understood by the correct stakeholders. Requirements classes help you determine the appropriate level of detail and the specificity needed in the project requirements, and they help you decide how many documents you will use to define what is needed.

Requirements classes can be defined using two dimensions: focus and type. Requirements classified by focus tend to be named in a more traditional way. Here are some examples:

- High-level business requirements
- User requirements
- System requirements
- Software requirements

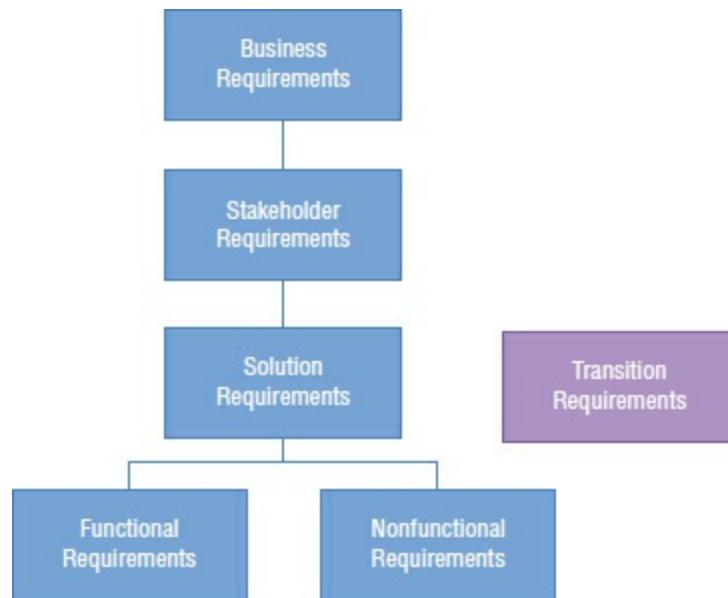
Each lower level of requirements defines the level above it in greater detail. This is a form of progressive elaboration, where the characteristics of the solution are determined incrementally and in greater detail as the project moves forward in time. After all, the more information you have, the better your solution definition will become. Solutions are typically defined at a high level of detail early in a project or initiative and then are refined into more detail over time as additional information is gathered and analyzed.

Classifying Requirements

The *BABOK® Guide* defines a *requirement* as a condition or capability needed by a stakeholder to solve a problem or to achieve an objective. This aligns nicely with the International Institute of Electrical and Electronics Engineers (IEEE) definition of requirements for software-intensive systems. Regardless of project type, a business analyst must use project requirements to design, develop, and deliver a solution that adds value to the business as a whole.

Different organizations use different names for requirements classes. To implement the *BABOK® Guide* requirements classification scheme, a business analyst needs to assess and map the levels of requirements in their organization's existing requirements process documents. While the exam requires that you know the requirements classification scheme, you don't have to use *BABOK® Guide* requirements classes. However, it is good practice that your requirements development approach addresses all of the *BABOK® Guide*

requirements classes in some way. [Figure 1.3](#) shows the relationships between the *BABOK® Guide* requirements classes.



[FIGURE 1.3](#) Classes of requirements

Let's take a closer look at each class of *BABOK® Guide* requirements.

Business Requirements Business requirements are the highest level of requirements and are developed during Strategy Analysis activities. They define the high-level goals, objectives, and needs of the organization. They also describe and justify the high-level business functionality that is needed in the resulting solution. To define a solution, business analysts will progressively elaborate and decompose *business requirements* to the next level of detail, the *stakeholder requirements*.

In the *BABOK® Guide*, business requirements are not contained within a single, standalone document. They are contained in a set of Strategy Analysis task deliverables, including the business need, the required capabilities, the solution scope, and the business case. (We will look at these deliverables in more detail later when we dig into this knowledge area in Chapter 2, “Controlled Start: Strategy Analysis.”)

Stakeholder Requirements These requirements define the needs of stakeholders and how they will interact with a solution. Stakeholder requirements bridge between the business requirements and the more detailed *solution requirements*. Many folks refer to stakeholder requirements as high-level user requirements. They identify what is needed from the user’s perspective and define “big picture” capabilities that the resulting solution must possess.

Business analysts develop and define *stakeholder requirements* as part of the tasks found in the Requirements Analysis and Design Definition knowledge area. Like with the business requirements, the business analyst will progressively elaborate stakeholder requirements into the more detailed solution requirements.

Solution Requirements Solution requirements are the most detailed type of requirements found in the *BABOK® Guide*. They describe the solution characteristics that meet the higher-level business and stakeholder requirements. Typically, a business analyst divides solution requirements into two specific types: *functional requirements* and *nonfunctional requirements*. A business analyst develops and defines solution requirements as part of the tasks found in the Requirements Analysis knowledge area.

Functional Requirements Functional requirements define the capabilities that a product or solution must provide to its users. They are a subset of the solution requirements that the business analyst develops for the project.

Nonfunctional Requirements Nonfunctional requirements describe quality attributes, design and implementation constraints, and external interfaces that the product must have. They are a subset of the solution requirements that the business analyst develops for the project, and they are typically paired up with the functional requirements that they constrain in some way. They would add characteristics to the functional requirements.

Transition Requirements *Transition requirements* define the solution capabilities required to transition from the current state to the future state and are no longer needed once the transition is complete. Typically, the business analyst creates transition requirements later in the project life cycle after defining both the current and new solutions. Business analysts develop and define transition requirements as part of the tasks found in the Solution Evaluation knowledge area.



Real World Scenario

Case Study: Palmer Divide Vineyards

You are a team member at Palmer Divide Vineyards, currently defining its new green initiative. The owners would like to conserve energy and water resources, reduce pollution, recycle more effectively, and become a certified Green Business. Your manager has assigned you to lead the team to discover the IT requirements for the project.

Following discussions with the IT group, you learn that the existing information systems will not support the ongoing green initiative research studies. You recommend that Palmer Divide's business requirements include the following statement: "*The vineyard operation shall upgrade existing information systems to support ongoing green initiative research studies.*"

Breaking down the IT system business requirement for the vineyard yields the following stakeholder requirement focusing on stakeholder interaction with the system: "*The research team sets up the tracking data for a new green initiative study.*" This would be one of many stakeholder capabilities

that the upgraded systems would provide.

Next, you look into the solution requirements for the stakeholder study parameter capabilities and recommend that the project solution requirements include the following: *"The research study leader logs into the system with study leader access privileges. The research study leader defines the set of research study data fields for their research project."* This would be a functional requirement.

A nonfunctional requirement accompanying the previous set of functional requirements addresses the access and authentication parameters for logging in to the system. *"Logging in as a study leader provides read, write, update, and delete capabilities for selected study data."*

Transition requirements included data conversion activities for the upgraded IT system.

Our favorite requirements classification scheme comes from the software engineering standards developed by the Institute of Electrical and Electronics Engineers. It focuses on the three Cs—capabilities, conditions, and constraints. According to the IEEE, a *requirement* is a capability needed by a user to solve a problem to achieve an objective. These capabilities must be met or possessed by a product to satisfy a contract, standard, specification, or other formally imposed documentation. Conditions and constraints together equal the nonfunctional requirements classification found in the *BABOK® Guide*. *Conditions* are statements that determine a possible outcome, like the “if” part of an “if-then” statement. *Constraints* are limits or boundary values for a particular function or capability.

Classifying Project Requirements Your Way

The IEEE requirements classes align quite nicely with the *BABOK® Guide* requirements classes. Basically, the capabilities are the functional requirements, and the other two classes are the nonfunctional requirements. Functional requirements define the capabilities provided to users and other interested parties, while nonfunctional requirements define conditions of the system or product as a whole as well as any constraints or limits on all or part of the system. You can easily extend the three Cs to focus across the different levels of requirements focus, such as the business, stakeholder, and solution requirements found in the *BABOK® Guide*.

The Requirements State Machine

When you look at requirements across the project life cycle, you will notice that they change as the project progresses. They start as a bunch of information and are analyzed into meaningful requirements. The analyzed requirements are reviewed and approved by their key stakeholders. Following review and approval, the requirements are used as the basis for designing a solution. See the pattern? Requirements development fits nicely into a state machine approach as the requirements change over time—they transition from state-to-

state based on actions that have been taken. Many requirements deliverables are modified based on the state that they are in at a particular point in time. This is particularly true for the requirements found in the *BABOK® Guide*.

Exam Spotlight

When preparing for your exam or simply trying to apply the best practices in the book, be aware of states and how they affect where you are in the project life cycle relative to your business analysis work, what has been done, and what should be done next.

You will see these different types and states of requirements used when naming inputs and outputs to business analysis activities. This will help you recognize where you are in the project life cycle and where you are in your requirements development process. You may also see the term *Requirements* with no modifiers attached or noted as *Requirements [Any State]*, indicating any class of requirement in any state. Inputs and outputs from business analysis tasks may use this notation.

Let's say you are developing your project's business requirements. According to the *BABOK® Guide*, the solution requirements include the business need, the required capabilities, the *solution scope*, and the business case. This is the set of deliverables produced by Strategy Analysis activities. The solution scope defines the capabilities that a solution must possess in order to meet a business need. In addition to modifying your requirements to the specific class of requirements you are focusing on, business requirements, you can also reflect the state of these business requirements at a particular point in time.

When you develop business requirements, you will need to elicit information from key stakeholders about what they and the business actually need. These stated requirements reflect what the users have told the business analyst about what they need. As part of your elicitation results, these stated business requirements will be analyzed, prioritized, validated, and verified prior to becoming the accepted set of business requirements for the project. Once these requirements have been reviewed and approved by the stakeholders, they would be named *Requirements [Approved]* in the inputs or outputs for a particular task. At this point, the business analysis team will have reviewed and obtained approval for the requirements that were received from the users when they expressed their needs.

The requirements state machine is worth watching; it provides the business analyst with guidance and recommendations about what has already taken place and what might be the logical next step in the requirements development process. [Table 1.2](#) summarizes the possible states and may be of assistance when you are navigating the *BABOK® Guide*.

TABLE 1.2 The BABOK® Guide requirements state machine summary

Requirements State	Description
Approved	Agreed to by stakeholders and ready for use in subsequent business analysis or implementation efforts
Maintained	Formatted and suitable for long-term or future use by the organization; may be saved as organizational process assets
Modelled	Well-structured and represented using correct modeling notations
Prioritized	Having an attribute describing its relative importance or assigned priority to stakeholders and the organization
Specified	Well-formed requirements documented using text, matrices, and models
Traced	Having clearly defined and identified relationships to other requirements or designs within the solution scope
Validated	Demonstrated to deliver value to stakeholders; are within the solution scope and are aligned with business goals/objectives
Verified	Requirements have been checked and are of sufficient quality to allow further work to be performed.

Keep an eye on the classes of requirements and their current states as you navigate and use all of the knowledge area tasks. They provide valuable road signs to keep you headed in the right direction.

Exam Spotlight

As part of your studies, be sure that you are comfortable with the requirements classes from the *BABOK® Guide*. They represent the requirements taxonomy used on the exam. If you classify your requirements another way, try to forget about that as you take your exam! It will also be helpful to remember which knowledge area creates which type of requirements.

Understanding How This Applies to Your Projects

As you can tell from this first chapter, successful business analysts bring a serious mixture of skills, dedication, and knowledge to their projects in order to solve business problems and meet business needs. It isn't just the ability to execute the business analysis techniques that gets the job done, either. Effective business analysts must also possess excellent interpersonal skills as well as a strong set of business and technical knowledge.



Real World Scenario

The Fledging Business Analyst Makes a Mistake

Everyone has to start somewhere. Phil's first formal solo assignment as a fledgling business analyst was to aid in the automated tracking of key performance measurements for one of the operating departments in a large telecommunications firm. The process was manual, and senior management felt that it was time to make it computer-based. Phil left his software engineering role behind, put on his business analysis hat, and went to figure out exactly what was required.

Phil followed the rules for being a business analyst on this new assignment. He interviewed the client and captured every word. He parroted back the key elements of the conversations. He carefully documented the current processes as described. He obtained sign-off from the client sponsor. Phil was proud of following the rules and getting this complex manual algorithm explained in concise and well-understood terms.

When programmed (by someone else), the automated results didn't come close to what the manual process reported. Phil proceeded to put his technical hat back on and spent days pouring through reams of manual data, comparing that data with the automated results. After consulting with the client sponsor (along with his reams of data), Phil discovered that he had missed an unrevealed rule about how the data values were tracked on a daily and monthly basis. Because he understood the math, the business, and the technology of the automated system, he was able to ripple this new requirement and deliver a solution that met the client's requirements.

It's OK for Phil to wear multiple hats on his projects, as long as he realizes which hat he has on at any particular time. People often find it difficult to leave the technical work behind and think about the business when they are wearing their business analyst hat. Doing so can lead the fledgling business analyst into trouble, resulting in incorrect or incomplete requirements and project problems downstream. Phil was lucky that he was able to put his technology hat back on and address his requirements problem sooner rather than later.

Business analysts must also be able to map the proven principles, best practices, and deliverables of the *BABOK® Guide* across their organization's project life cycle. This allows them to create a flexible framework for the essential work activities of the business analyst. The *BABOK® Guide* allows business analysts to build a business analysis methodology providing an integrated framework of elements for successful business analysis work that business analysts can tailor to the project environment.

Exam Spotlight

This generic life cycle model is not on the exam. However, if you plan to use the *BABOK® Guide* as the basis for your business analysis work activities, you have to make it work for your organization. Mapping to your existing life cycle model is the first step in integrating these best practices into your own projects.

Different business analysis skills, techniques, and knowledge are used at different places in the project life cycle. To implement the contents of the *BABOK® Guide* on your projects, you will need to map what needs to be done to when you would like to do it. If you have an existing project life cycle in your organization, this is the time to dust it off and use it. If not, it's time to build one. Our generic project life cycle consists of three parts: controlled start, controlled middle, and controlled end. When you think about your projects, one way to keep track of what needs to be done is to know "when and where" you are in this simple model (see [Figure 1.4](#)).

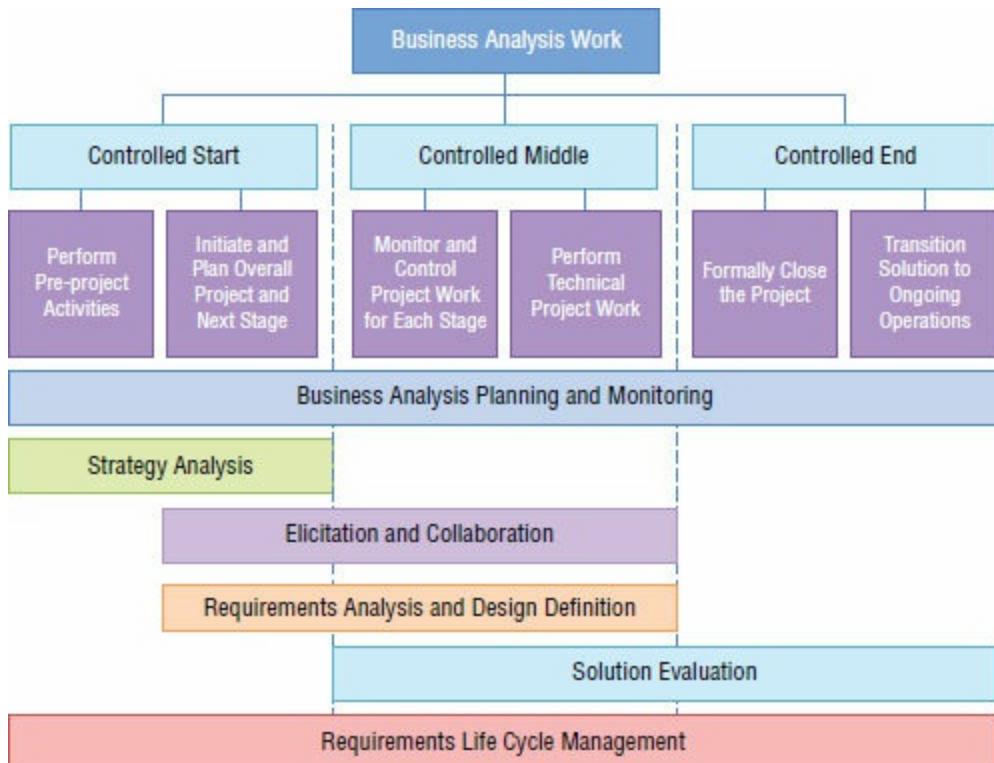


FIGURE 1.4 Mapping the *BABOK® Guide* to a generic life cycle



Don't confuse the six knowledge areas of the *BABOK® Guide* with the phases of the project life cycle. The *BABOK® Guide* is not a methodology or a road map for business analysis. Instead, it is a set of best practices that can be used to build a framework for business analysis activities supporting the activities and deliverables defined by an organization's project life cycle. The organization is responsible for mapping these best practices to their selected project life cycle.

Controlled Start The controlled start to a project includes the pre-project activities where you determine whether this is a viable and worthwhile project for the business. It also covers the project initiation, where business analysts do more detailed planning for the overall project and for the next detailed project stage. At the end of the controlled start activities, the business analyst should have project scope finalized, business justification in place, and the high-level project plan built. The project team should be ready to get to work. The team uses numerous tasks and deliverables from the Strategy Analysis and Business Analysis Planning and Monitoring knowledge areas at this point in time with a little Requirements Life Cycle Management work thrown in for good measure.

Controlled Middle The controlled middle of a project is where the technical work gets done, one stage or phase at a time. The project manager uses the plan to measure and monitor project performance and to control what takes place. This is management by walking around (MBWA), where business analysts are

into everything—regular status, informal conversations, checking the health of the project, dealing with stakeholders, forecasting future performance, and dealing with issues and risks. The business analysis work is a subset of this plan, and the business analyst manages and controls business analysis work performance during this time. Business analysis tasks typically include those from the Elicitation and Collaboration, Requirements Life Cycle Management, Requirements Analysis and Design Definition, and Solution Evaluation knowledge areas.

Controlled End A controlled end to a project is when the business analyst wraps up a job well done. This can also take place if the project was prematurely terminated for one reason or another (ideally a rare event). The business analyst takes stock of achievements, reports on the effort, ensures objectives and acceptance criteria are met, and transitions the final product of the project into its operational life. There are specific tasks in Solution Evaluation that focus on this part of the project life cycle.

Perspectives on Business Analysis

Business analysts find themselves working on many types of projects. You may find yourself developing requirements for a back-office IT system or defining standard operating procedures within a research laboratory. The *BABOK® Guide* defines five common points of view for business analysis work.

- Agile
- Business intelligence
- Information technology
- Business architecture
- Business process management

Each perspective impacts how business analysts use the knowledge area tasks in their efforts. Remember, different types of initiatives facilitate different types of changes to the business. Make sure you have the right people, the right methods, and the right approach to define what has to be done.



Chapter 9, “Five Perspectives on Business Analysis,” contains a detailed explanation of each perspective and how you might change your business analysis activities as a result of that point of view.

Summary

You covered a lot of content in this chapter! You learned that business analysis is an essential part of every organization. Successful business analysts bring a serious set of skills and knowledge to every project or initiative in order to liaise among the stakeholders to address business needs and solve business problems. Business analysis is more than just asking questions!

You looked at how the *BABOK® Guide* provides a business analysis framework, defining areas of knowledge, associated activities and tasks, and the skills required to perform them. The scope of the *BABOK® Guide* covers pre-project activities, the full project life cycle, and the final solution's operational life. It is also the basis for the CBAP® and CCBA™ certification exams, and it provides the backbone of this book.

The *BABOK® Guide* contains its own requirements classification scheme. This is the scheme you will see on the certification exams. A requirement is a condition or capability needed by a stakeholder to solve a problem or to achieve an objective. Classifying requirements allows the business analysis team to make sure that their project requirements are reviewed and understood by the correct stakeholders. Requirements classes help you determine the appropriate level of detail and the specificity needed in the project requirements and decide how many documents you will use to define what is needed.

You visited the six business analysis knowledge areas as a part of the chapter. These knowledge areas guide business analysts when they perform business analysis activities at any point in the project or product life cycle. The areas define what business analysts need to understand and the tasks they should perform. They do not represent project phases, and their activities are not intended to be performed in a linear fashion.

To use the *BABOK® Guide* at work, you will need to map its business analysis tasks to your own project life cycle (PLC) or systems development life cycle (SDLC). This will allow you to create a business analysis methodology that supports your project and product-focused life cycles and will help you to keep the lights on. This book uses a simple project life cycle as the basis for a map. It has only three phases: controlled start, controlled middle, and controlled end. Most life cycles are far more complex!

Because many of you are planning to use this book in your preparations to take the CBAP® or CCBA™ certification exam, this book covers the content and structure of the exams. It takes a lot of work to successfully prepare for and pass these exams—they are not intended to be easy! The CBAP® exam is designed for experienced business analysts, while the newer CCBA™ exam targets folks who have less experience working as business analysts. The questions in each exam are built using Bloom's taxonomy (a method for classifying learning objectives), and questions can be quite straightforward (testing comprehension) or rather difficult (testing analysis).

Exam Essentials

Be able to explain the pieces and parts of the BACCM™. The BACCM™ contains six concepts that define the profession of business analysis in a common language. Effective business analysts need to keep all six related aspects of this model when developing requirements for their project or initiative.

Be able to list and describe each knowledge area. The names and high-level descriptions of each of the six knowledge areas are required knowledge for you as you prepare to take your exam. As you dig deeper into each knowledge area, learn to also list the tasks and their key inputs/outputs/techniques as part of your exam preparation repertoire. The six knowledge areas are Business Analysis Planning and Monitoring, Elicitation and Collaboration, Requirements Life Cycle Management, Strategy Analysis, Requirements Analysis and Design Definition, and Solution Evaluation.

Be able to navigate your copy of the *BABOK® Guide*. Tabbing your copy of the *BABOK® Guide* helps you find exactly what you need to know. You might find it helpful to use multiple colors of durable tabs to mark the chapters in your book, the glossary, the index, and any other information that you think will be useful.

Be able to describe and relate the requirements classes in the *BABOK® Guide*. Starting at the highest level of detail, they are business requirements, stakeholder requirements, solution requirements, functional and nonfunctional subsets of the solution requirements, and transition requirements.

Be able to recognize the underlying competencies every good business analyst should possess. The six high-level categories are analytical thinking and problem solving skills, behavioral characteristics such as trustworthiness, business knowledge, software knowledge, interaction skills, and communication skills.

Be familiar with the key stakeholder roles. The exact role names and definitions from the *BABOK® Guide* are what you will see in your exam questions, so make sure you know each of them. Remember that the stakeholder roles are like hats, and one person can wear one or many hats during a project life cycle.

Key Terms

This chapter introduced the knowledge areas from the *BABOK® Guide* that you will be using as a business analyst on your projects and other initiatives. You will need to understand how to apply each of these knowledge areas at the right spot in the project life cycle in order to be an effective business analyst. Additionally, you will need to know each knowledge area by name and definition in order to be successful on the CBAP® or CCBA™ exams. Each knowledge area will be discussed in greater detail in the chapters to come.

- Business Analysis Planning and Monitoring
- Elicitation and Collaboration
- Requirements Life Cycle Management
- Strategy Analysis
- Requirements Analysis and Design Definition
- Solution Evaluation

You have learned many new key words in this chapter. The International Institute of Business Analysis (IIBA) has worked hard to develop and define standard business analysis terms that can be used across many industries. Here is a list of some of the key terms that you encountered in this chapter:

- business analysis
- business analyst
- business requirements
- conditions
- constraints
- design
- domain
- elements
- functional requirements
- guidelines
- inputs
- nonfunctional requirements
- project manager
- purpose
- requirement
- solution requirements

solutions
stakeholder
stakeholder requirements
stakeholders
techniques
tools
transition requirements
underlying competencies

Review Questions

You can find the answers in Appendix F.

1. A business analyst is currently defining a set of changes to the current state of an organization that allows the organization to take advantage of a business opportunity. What is most likely being defined?
 - A. Project scope
 - B. Business need
 - C. Solution scope
 - D. Business domain
2. In what knowledge area is the business analyst most likely to be scoping and defining new business opportunities?
 - A. Strategy Analysis
 - B. Solution Evaluation
 - C. Requirements Analysis
 - D. Enterprise Assessment
3. What project role focuses on understanding business problems and opportunities?
 - A. Business architect
 - B. Project manager
 - C. Project sponsor
 - D. Business analyst
4. A capability needed by a stakeholder to achieve an objective is also called a:
 - A. Strategy
 - B. Requirement
 - C. Solution
 - D. Process
5. Your project implementation plan defines 12 capabilities of the planned systems solution that will not be needed once the new solution is operational. What type of requirements are these?
 - A. Functional requirements
 - B. Nonfunctional requirements
 - C. Reusable requirements
 - D. Transition requirements
6. Who is primarily responsible for achieving the project objectives?

- A. Program manager
 - B. Project manager
 - C. Business analyst
 - D. Project sponsor
7. Inputs to a specific business analysis task may be externally produced by:
- A. Requirements
 - B. Preconditions
 - C. Techniques
 - D. A single task
8. To determine solutions to business problems, the business analyst applies a set of:
- A. Activities and tasks
 - B. Inputs and outputs
 - C. Tasks and techniques
 - D. Practices and processes
9. Knowledge areas define what a business analyst needs to understand. They do *not* define the project:
- A. Scope
 - B. Techniques
 - C. Phases
 - D. Resources
- o. All of the following are part of the business requirements, *except*:
- A. Solution scope
 - B. Business need
 - C. Required capabilities
 - D. Business goals
11. What knowledge area contains the next *most* logical steps after the business analyst has built a business case and gained management approval for a project?
- A. Solution Evaluation
 - B. Business Analysis Planning and Monitoring
 - C. Requirements Life Cycle Management
 - D. Requirements Analysis and Design Definition
2. All of the following are knowledge areas *except*:
- A. Solution Evaluation

- B. Requirements Planning and Monitoring
 - C. Requirements Life Cycle Management
 - D. Strategy Analysis
3. The stakeholders have indicated to the business analysis team that the documented requirements are ready for use in subsequent business analysis or implementation efforts. What type of requirements has been developed at this point in time?
- A. Maintained
 - B. Verified
 - C. Validated
 - D. Approved
4. Identifying key stakeholder roles and selecting requirements activities is done as part of which knowledge area?
- A. Requirements Analysis
 - B. Requirements Development
 - C. Business Analysis Planning and Monitoring
 - D. Requirements Elicitation
5. Requirements gathering activities are also known as requirements:
- A. Planning
 - B. Development
 - C. Analysis
 - D. Elicitation
6. What represents the information and preconditions necessary for a business analysis task to begin?
- A. Activity
 - B. Input
 - C. Output
 - D. Technique
7. You are a business analyst measuring alternatives against objectives and identifying trade-offs to determine which possible solution is best. You are most likely engaged in what activity?
- A. Problem solving
 - B. Systems thinking
 - C. Creative thinking
 - D. Decision making
8. What defines the business analysis team roles, deliverables to be produced,

and tasks to be performed?

- A. Requirements process
 - B. Project management plan
 - C. Solution approach
 - D. Business analysis approach
9. When does the business analyst ensure the feasibility of the proposed requirements to support the business and user needs?
- A. As part of building a business case
 - B. During Requirements Analysis and Design Definition
 - C. When organizing business requirements
 - D. While planning and monitoring tasks
10. The system users have stated their needs for revised online order entry system capabilities. The users need the ability to perform online, remote order entry when they are traveling worldwide. What type of requirements best describe this need?
- A. Stakeholder requirements
 - B. Business requirements
 - C. Transition requirements
 - D. Solution requirements

Chapter 2

Controlled Start: Business Analysis Planning and Monitoring

CBAP®/CCBA™ EXAM TOPICS COVERED IN THIS CHAPTER:

- ✓ **Plan business analysis approach.**
- ✓ **Plan stakeholder engagement.**
- ✓ **Plan business analysis governance.**
- ✓ **Plan business analysis information management process.**
- ✓ **Identify business analysis performance improvements.**



Now that you are more familiar with the discipline of business analysis, you are ready to address planning the business analysis activities for a project or initiative. You have learned the basic pieces of the discipline: the underlying competencies of the business analyst, the key business analysis stakeholders, the framework of the BACCM™, and the *BABOK® Guide* requirements classification scheme. Using this foundation, you will begin to apply business analysis tasks and techniques as we walk through the first knowledge area, Business Analysis Planning and Monitoring.

The first skills you will put to use are analytical thinking and problem solving. After all, before you can begin a project or project phase, it's a good idea to know what work you need to do. To achieve a controlled start to a project or project phase, you must be methodical and consistent in your planning, definition, and decisions. This is the first step in planning the business analysis work effort for a project. Figure out what needs to be done, how you will go about doing it, exactly who needs to be involved with the work, and how involved they should be.

Business Analysis Planning and Monitoring

The Business Analysis Planning and Monitoring knowledge area focuses on laying the groundwork for successfully defining, planning, and completing the business analysis work for a project. The business analyst builds the business analysis work plan by executing the knowledge area tasks. The business analysis tasks that the business analyst puts in the work plan depend on what needs to be done for the time period of the planning effort. Typically, the business analysis work activities become part of the project management plan.

To focus on what is important to the business analyst early in the business analysis efforts, let's consider the tasks of this knowledge area with the framework of the BACCM™. The business analyst needs to keep an eye on their work at this point in time relative to the six concepts contained in the framework: changes, needs, solutions, stakeholders, values, and contexts. [Table 2.1](#) lists these responsibilities.

TABLE 2.1 The BACCM™: Business Analysis Planning and Monitoring

Core Concept	The Business Analyst's Responsibilities
Change	Determine how changes to business analysis results are requested and authorized.
Needs	Choose a business analysis approach providing adequate analysis for the change.
Solution	Evaluate if business analysis performance contributed to successful solution implementation.
Stakeholders	Perform stakeholder analysis to ensure Business Analysis Planning and Monitoring activities reflect stakeholder needs and characteristics.
Value	Conduct performance analysis to ensure business analysis activities produce sufficient value to stakeholders.
Context	Ensure complete understanding of the context being analyzed in order to develop an efficient business analysis approach.

The tasks in this planning-focused knowledge area generate several key business analysis deliverables:

- Business analysis approach*
- Stakeholder engagement approach*
- Governance approach*
- Information management approach*
- Business analysis performance assessment*

We will cover each deliverable in more detail in this chapter.

The Business Analysis Planning and Monitoring knowledge area also addresses *monitoring* and reporting on the business analysis work being performed on a project once the planning is complete and the work efforts are underway. This ensures the project's business analysis effort produces the desired outcome and that the business analysis work is done right.

The Business Analyst's Task List

The business analyst has five tasks to perform in the Business Analysis Planning and Monitoring knowledge area. We will look at each of these tasks in greater detail later in this chapter. The task list from the *BABOK® Guide* includes the following:

- Defining the business analysis approach
- Planning for stakeholder engagement
- Setting up business analysis governance
- Outlining the business analysis information management process
- Identifying business analysis performance improvements

These tasks focus on planning how the business analysis team will approach a specific effort. The business analyst is responsible for developing, defining, and managing the roles and tasks associated with this work. We will step through each of these tasks in greater detail later in this chapter. The goal of the project is to define, develop, and deliver a solution that addresses a business problem, need, or opportunity. To achieve that goal, the business analyst must have detailed knowledge of each task, be able to apply the recommended techniques, and produce high-quality deliverables as a result.

Exam Spotlight

Exam questions in this knowledge area are organized and presented using this list of tasks. Expect to see approximately 21 questions about this knowledge area on your CBAP® exam and 18 questions if you are sitting the CCBA™ exam. It is your job (and ours as well) to make sure you know when this work is done and how you go about actually doing it.

When Does Business Analysis Planning and Monitoring Take Place?

“Begin at the beginning,” the King said gravely, “and go on till you come to the end; then stop.”

Wonderland

—Lewis Carroll, *Alice in*

The tasks in the Business Analysis Planning and Monitoring knowledge area occur throughout the project life cycle. Many of these tasks are done as a part of pre-project activities as the basis of a project's controlled start. The business

analysis deliverables created at the beginning of a project are used to define, govern, and monitor the performance of all other business analysis tasks across the project life cycle. The plans and approaches developed for the overall project may require updates and additional details as each subsequent phase of the project life cycle is planned.

The controlled start to a project includes the pre-project activities where teams determine whether this is a viable and worthwhile project for the business. Controlled start also covers project initiation activities, where you do more detailed planning for the business analysis effort on a project and any associated project stages or phases. At the end of a controlled start:

- The *solution scope* is finalized.
- The *business case* and justification are in place.
- The high-level business analysis approach has been built.
- Business analysis governance is defined and in place.
- Business analysis information management is ready to go.
- Business analysis stakeholders are identified and engaged.
- Business analysis performance measures are agreed on.
- The business analysis team should be ready to get to work.

Numerous tasks and deliverables from both the Strategy Analysis and Business Analysis Planning and Monitoring knowledge areas are created and used during a controlled start. Tasks in the Business Analysis Planning and Monitoring knowledge area allow you to decide how to go about the business analysis work that is required to define, develop, and deliver a solution. Tasks from the Strategy Analysis knowledge area focus on defining the business requirements and justifying delivery of the solution scope for the project. We will take a detailed look at the Strategy Analysis tasks in Chapter 3, “Controlled Start: Strategy Analysis.” Right now, we are concerned with planning how to do the business analysis activities versus actually doing the work.



Real World Scenario

What Exactly Am I Supposed to Be Doing?

Russ discovered early in his career as a project manager that all plans are not created equal. He was a replacement for the project manager on a fairly complex data center consolidation project. Russ stepped in near the end of the first major phase of project work, which was developing the user requirements for the new data center.

One of his first tasks was to review the current project plan and evaluate the progress to date. Russ noticed that the requirements development work was shown as a single two-week task in the project plan with no additional

details about the requirements process itself. Because the resulting user requirements document was shown as a completed deliverable and this task was marked as 100 percent complete, he decided to look at the new capabilities the project would provide to the business and its users. So he did.

After reading the first four pages of the document, Russ knew there was a problem. He finished reading the user requirements document, closed the file on his computer, and reached for the phone to call the lead business analyst for this effort into his office. When Mary arrived, he asked her, “What exactly is this document supposed to be? Is this just a high-level concept that we need to now go out and define?” Mary replied that the document was the final, approved user requirements document. All the business analysis team had to do now was give the document to the developers. The developers would figure out the rest.

Russ asked Mary to explain the process she and her team had gone through to produce the deliverable. She explained that she had worked in tandem with the development director to elicit, analyze, and specify the user requirements for the project. Basically, the key users had not been involved or consulted at all. As Mary was quick to point out, “That wasn’t in the plan, so that wasn’t how I did the work.” Basically, the user requirements work had to begin all over again and had to be done correctly the second time.

Russ worked closely with his business analysis team to plan the requirements development work in far greater detail. This time around, the team gave themselves adequate time to elicit and analyze the requirements and planned the time to validate the requirements when everything was complete. Completing the rewritten user requirements took five additional weeks of work. Funnily enough, this didn’t impact the scheduled end date. The original requirements would have been impossible to use for the design and construction of the data center.

Remember that your focus is on planning and monitoring the business analysis work for a project, not on planning and managing the whole project. That is the responsibility of the project manager. However, in either case, the plans need to be built and implemented at the appropriate level of detail.

Plan the Business Analysis Approach

The first task in the Business Analysis Planning and Monitoring knowledge area is to define and plan the business analysis approach. There are many ways to approach business analysis work on a project. To get the business analysis work started on a project, you must first decide how to go about doing it. The overall business analysis process for performing work consists of the following:

- Deciding how and when business analysis tasks will be performed
- Agreeing on the techniques to be used

- Defining the deliverables to be produced

[Figure 2.1](#) summarizes the inputs, outputs, techniques, and associated tasks for planning the business analysis approach for a project. The best business analysis approaches are based on the organizational environment where they will be used. The business analysis approach is a subset of the overall project approach. It defines the set of processes, templates, guidelines, tools, techniques, and activities used to perform business analysis on a project or initiative. When documented, the business analysis approach creates a formalized and repeatable methodology. In comparison, the *project approach* describes the way all of the project work will be approached.

Once the business analysis approach is established for a project or initiative, it is not expected to change significantly through that project's life cycle. However, the business analysis approach should be revisited at each phase of the project to ensure that it is being followed and that no changes are required for the work that will be started or based on business analysis performance to date.

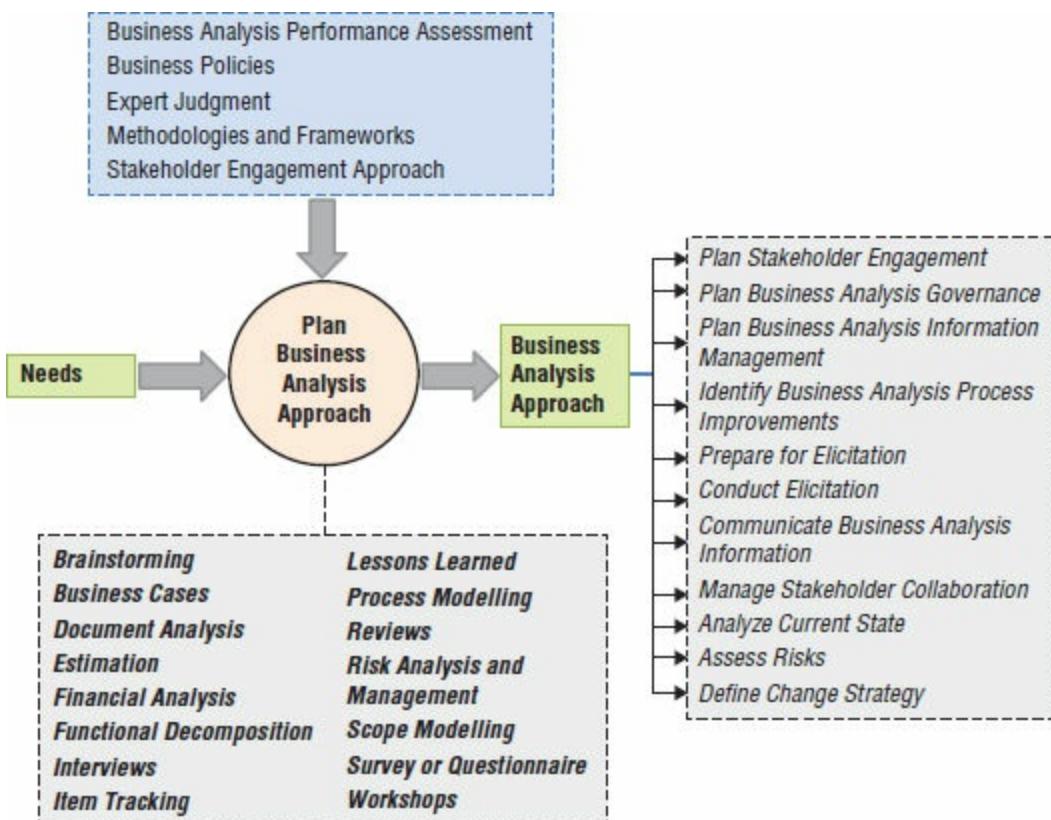


FIGURE 2.1 Task summary: Plan business analysis approach.

Predictive vs. Adaptive Approaches

When you define and plan your business analysis approach, you must decide where it falls across the spectrum of *predictive approaches* and *adaptive approaches*. Predictive planning approaches focus on ensuring that the solution is fully defined before its implementation begins. Adaptive planning approaches are used on projects where many small iterations are defined and developed en route to the final result. Hybrid approaches combine aspects of both types and

may require additional tailoring and scaling of the business analysis approach to combine them well. Most organizational environments and their management teams are likely to be more comfortable with one approach over the other.



Real World Scenario

The Project Has Two Faces, Part 1

Introduced into the exciting realm of online payment processing on a consulting assignment, Ginger discovered that projects can successfully incorporate both predictive and adaptive approaches to get the job done. She was brought on board by a financial services firm to lead their efforts in launching their new online payment processing system. Of course, before it could be launched, it had to be defined, designed, and built from the ground up.

Early phases of this effort focused on building the actual system. Ginger recommended that the project team use a predictive approach. This would ensure a system that would be scalable as more customers came on board. The architecture and infrastructure capabilities for the new system would be thoroughly documented and well understood. The system's payment processing capabilities would be well defined, and all key stakeholders in the organization would know what the final system looked like and what services the product would provide. Senior management agreed with this approach, and the work began.

Once system development was well underway, it was time to look for new customers for this soon-to-be operational product. Ginger was asked to lead the implementation team responsible for onboarding new customers. This was the point where the game changed. Previously, her focus was on a well-designed and well-defined online payment processing system. Now, her focus was on marketing the product to and acquiring new customers as quickly as possible. The goal was to complete each customer implementation in less than 30 days.

To achieve this goal, Ginger recommended a very different approach from the development team's predictive project. She and the team decided that an adaptive approach was the only way to get each implementation done swiftly and accurately. The team developed requirements templates to use as the basis for setting up each customer's portal into the payment processing system. The information in these templates was gathered by telephone. Of course, billing information for each customer was also collected. Customers had their own data repositories and a customized front end for their shopping carts.

Use of the streamlined requirements templates enabled each implementation manager to quickly walk their clients through the process of getting the online payment processing system up and running on their

websites. Management was ecstatic when the money started flowing in from happy customers. And Ginger the consultant was invited to the celebration when everything was complete.

Predictive business analysis tries to minimize your up-front uncertainty (or risk) and maximize your control over the business analysis activities on your project. This is a more traditional style of development, such as the waterfall model of software development or what you find in straightforward business process reengineering initiatives. The biggest issue with predictive approaches is whether or not the solution requirements can actually be well defined prior to commencing the overall solution delivery efforts. In effect, predictive approaches use structure to control project risk.



Another way to think of predictive versus adaptive business analysis approaches is to call them traditional versus agile development methodologies.

Adaptive business analysis approaches target rapid delivery of business value. To achieve that goal, they accept greater uncertainty (risk) relative to the overall solution delivery. This is an exploratory approach to finding the best solution, using short iterations to incrementally develop components of the solution. Adaptive approaches that you may be familiar with include agile development methods and many continuous process improvement projects being done in organizations. One key feature of adaptive approaches is that they use flexibility to control project risk.



Do not confuse today's predictive business analysis approaches with the traditional, linear models of the past. Today's predictive approaches are flexible and adaptable, using time-boxing, iterative development, and multiple releases to help folks get the job done. The traditional linear models of the past typically use the draft-walkthrough-revise-final-approve cycle.

Create a Business Analysis Approach

Now let's get to the task at hand, which is planning the business analysis approach. Every task has inputs, outputs, elements, guidelines, tools, and techniques. This task is no exception. Let's start with the inputs. Inputs are either informational in nature or outputs produced by other business analysis tasks. Inputs are acted on by the task elements and techniques, producing one or more task outputs. Let's take a look at the task input used when planning a

business analysis approach:

Needs The business analysis approach is impacted by the business need or need for change that is driving the project. This makes sense. Both the project approach and the business analysis approach will be impacted by the problem or opportunity it is addressing. The needs for the project are defined during Strategy Analysis.

There are additional inputs that may be used by the business analyst when performing business analysis tasks: guidelines and tools. Guidelines are instructions or descriptions about why or how the business analyst might undertake a particular task. Tools are methods of conducting business analysis tasks or shaping a task output. Let's take a look at the guidelines and tools that are applied when planning a business analysis approach:

Business Analysis Performance Assessment The business analysis performance assessment contains results from business analysis activities on previous projects for you to review and incorporate into your current approach to getting things done.

Business Policies Business policies define the limits within which business decisions must be made and how work will be completed. These policies also frame and constrain the business analysis approach that you select.

Expert Judgment Expert judgment is used to evaluate and build the optimal business analysis approach for your project. Your team will rely on individuals or groups with specialized knowledge or skills in business analysis and other aspects of the domain to assist in defining the approach.

Methodologies and Frameworks Methodologies and frameworks define and govern business analysis work on a project. The business analysis approach may be defined by a particular methodology, an organizational framework, or a combination of the two. Don't forget to look at historical information from previous projects, such as risks, performance measures, schedules, and other data. When you discover a business analysis asset treasure trove at one of your clients, it means you don't have to reinvent the wheel.

Stakeholder Engagement Approach Effective business analysts make sure that they understand their stakeholders. Stakeholder concerns and interests can impact the pieces and parts of your business analysis approach.

[Table 2.2](#) summarizes the inputs, guidelines, and tools needed to plan the business analysis approach for a project and also lists the task and knowledge area that was the source of the input (if applicable).

TABLE 2.2 Inputs, Guidelines, and Tools: Plan business analysis approach.

Task Input	Input Type	Input Source	Source Knowledge Area
Needs	Input	Define business needs.	Strategy Analysis
Business analysis performance assessment	Guidelines and tools	Identify business analysis performance improvements.	Business Analysis Planning and Monitoring

Business policies	Guidelines and tools		
Expert judgment	Guidelines and tools		
Methodologies and frameworks	Guidelines and tools		
Stakeholder engagement approach	Guidelines and tools	Plan stakeholder engagement.	Business Analysis Planning and Monitoring

The experienced business analyst spreads their attention across six elements when they consider the contents of the business analysis approach. The results of each element are formally documented as part of the business analysis approach for the project. The detailed elements necessary to plan the business analysis approach include the following:

- Planning the overall business analysis approach
- Deciding degree of formality and level of detail for business analysis deliverables
- Integrating the execution of business analysis activities with the overall project plan
- Determining timing of business analysis work
- Considering complexity and risk
- Gaining acceptance of the business analysis approach from key stakeholders

Exam Spotlight

Remember that selecting and defining your project's business analysis approach is situational. It depends on a number of factors, such as organizational needs, business analysis team skills, and solution complexity. Combining practices from predictive and adaptive approaches could result in a stronger business analysis approach.

Let's step through each of the elements involved in deciding on and building a project's business analysis approach:

Select Planning Approach Your planning approach for business analysis activities should fit the size and type of project you are working on. It should also fit within the organization where you work. We have already discussed the spectrum of planning approaches available to the business analyst, ranging from predictive to adaptive. Successful business analysts tailor their planning approach to ensure that value is delivered to the enterprise.

Decide Formality and Level of Detail All expected business analysis

deliverables across the project life cycle should be defined in the business analysis approach. If you forget a particular deliverable that is due later in the life cycle or change your mind about one that has already been defined, you can always revisit the business analysis approach and make the necessary changes. Predictive approaches are usually quite formal and produce very detailed document sets requiring formal approval. Adaptive approaches can be quite informal, often limiting the documentation to a bare minimum. Project work and business analysis deliverables are approved informally through team interaction and feedback.

Exam Spotlight

Remember that adaptive business analysis approaches must have well-prioritized requirements because a prioritized requirements list may well be the only required project documentation.

Plan and Integrate Business Analysis Activities The business analyst must decide on the process to follow for planning a project's business analysis activities. This requires coordination and communication with the project manager, because this business analysis work plan is typically integrated into the higher-level project plan. If there are planning standards to follow for the project, the business analyst should use those standards when planning the business analysis work. These standards could include guidelines for estimating or specific planning and scheduling tools to be used. If the business analysis work plan is not consistent with the project plan, it will be difficult to integrate into the overall effort.

Determine Timing of Business Analysis Work It is critical that you determine when the business analysis work will take place throughout the project. This includes identifying not only the tasks to be performed but also the business analysis resources that will perform each task. Requirements development time is a traditionally heavy period of work for the business analysis team. You need to know whether these efforts will align with specific project phases early in the project (predictive) or whether the work will be done iteratively throughout the project (adaptive).



The effectiveness of a business analyst depends on the corporate culture. Working in a large organization seems to require more formal written communications. We have worked in large organizations with so many layers of management that the business analysts almost never speak directly to a decision maker. On the flip side, many business analysts working in smaller organizations find that formal written communications almost never occur. In this situation, stakeholder communications are

almost always verbal and informal in nature.

Consider Project Complexity and Risk Project complexity impacts the business analyst in a number of ways. In general, the more complex the project is, the more complex the business analysis effort is as part of the project work. Complex projects may result in a greater number of formal deliverables and stakeholder review points. Complex projects can also be riskier for everyone—the business, the project team, as well as the business analysis team and its business analysts. Situations with a complex solution should be addressed with more up-front modelling and planning work. Examples of complex projects include building an airline reservation system or creating a telecommunications circuit ordering and provisioning application.

Exam Spotlight

Be sure you remember the five factors that increase the complexity of business analysis work. The rule of thumb is that as these factors increase, so does the project complexity.

- The size of the change
- The number of business areas or systems affected
- The amount and nature of risk
- The technological complexity
- The number of geographic and cultural considerations

Gain Stakeholder Acceptance of the Approach Key stakeholders must review and agree to the approach the business analyst creates. In general, the more your key stakeholders are involved with creating and thinking through the business analysis approach, the easier acceptance will be. Some projects require a formal sign-off on the approach from key stakeholders. Other projects may consider the approach accepted with an email saying that a key stakeholder agrees that all business analysis activities are identified, the estimates are realistic, and the proposed roles and responsibilities are correct. Be sure to plan for handling stakeholder acceptance of changes to the business analysis approach over time as work progresses and conditions change.

There are a number of techniques that you might choose to apply when building a business analysis approach for your project. We recommend that you use the estimation technique in order to consider the estimate and compare the range of costs associated with one or more business analysis approaches before making your final decision. Let's take a look at that technique in greater detail.

Recommended Technique: Estimation

There are many ways for the business analysis team to estimate the range of cost

and effort associated with the business analysis work on a project. These estimates are typically developed in conjunction with the project manager and other team members using the project-level estimating tools and techniques. Effective business analysts use estimates to promote better stakeholder decision making and understanding of the project. [Table 2.3](#) summarizes of the types of estimates commonly used for estimating business analysis efforts.

TABLE 2.3 Common estimating techniques

Technique	Description
Analogous estimation	Uses similar projects as the basis for top-down estimates
Parametric estimation	Uses parameters and historical data
Bottom-up estimation	Estimates smaller items first and aggregates upward
Rolling wave	Refines detailed estimates for increments of work over time
Three-point estimation (PERT)	Estimates optimistic, pessimistic, and most likely cases
Historic analysis	Uses history as the basis for bottom-up and top-down estimates
Expert judgment	Relies on those who performed similar work in the past
Delphi estimation	Combines expert judgment and history
Rough order of magnitude (ROM)	Makes a high-level estimate based on limited information with a wide confidence interval

Additional Techniques to Consider

The *BABOK® Guide* lists some additional techniques that can be used when building the business analysis approach for a project. They are summarized for you here.

Brainstorming Brainstorming is an excellent way for the business analysis team to generate a list of all possible business analysis activities, techniques, or risks for the business analysis approach.

Business Cases Experienced business analysts look to the project's business case for time-sensitive, high-value aspects of the problem or opportunity that is being addressed.

Document Analysis This technique is used to review existing organizational assets that might assist in planning the business analysis approach.

Financial Analysis Financial analysis allows you to assess how different approaches and delivery options affect the value being delivered to the enterprise.

Functional Decomposition Functional decomposition is pretty much what it sounds like it would be, breaking down complex business analysis activities into smaller and easily understood pieces. It is a critical part of business analysis planning; understanding the business analysis tasks and deliverables sufficiently enables effective estimating.

Interviews When interviewing key stakeholders, the business analyst should always ask the interviewees to identify additional information that might fit as part of the business analysis approach.

Item Tracking This technique is used to track issues or risk-related items encountered while planning the business analysis approach. Items may be opened for the project that relate to business analysis activities. These items should be addressed and resolved by the business analysis team.

Lessons Learned Effective business analysts compile and document successes, failures, and recommendations for improving the performance of business analysis activities on their projects. Be sure to use your previous experiences (both good and bad) when building your business analysis approach.

Process Modelling Process models document the steps of the business analysis approach or process for a project. Think of graphically depicting a series of business analysis process steps on a whiteboard with arrows between them to show the sequence of events. That is a simple process map that can be used to build and decide on a business analysis approach.

Reviews Experienced business analysts use reviews to validate the business analysis approach with key stakeholders and team members. This is a meeting with a tour guide. Your destination is the business analysis approach, and your meeting agenda will walk you through the possibilities in order for the group to decide on the approach that is right for their project.

Risk Analysis and Management Remember that the results of planning the business analysis approach may contribute to the risks for the business analysis effort and to the project. The people involved with your efforts can be the source of possible risks, and they can also help the team identify additional risks that may be important downstream.

Scope Modelling Scope models help you determine the boundaries of the solution and its scope as an input to the planning and estimating activities.

Survey or Questionnaire Business analysts may use this technique to identify possible business analysis activities, techniques, and risks to help build the contents of the business analysis approach.

Workshops Conducting workshops allows you to build the business analysis approach in a team setting. The business analyst should always ask the participants about any additional activities, techniques, or risks that should be considered for inclusion in the approach.

Once you have chosen one or more techniques to apply, you are ready to create your business analysis approach. We'll discuss that next.

Create the Business Analysis Approach

The business analysis approach specifies how the business analysis team plans to perform the business analysis work on their project. Essentially, this approach is the business analysis methodology for the project. If the approach is documented and saved as a business analysis process asset, it can be revised and reused on subsequent projects in the organization. Once the business analysis approach is complete, it is used as an input by other business analysis tasks that are summarized in [Table 2.4](#). They include planning for business analysis information management and preparing to engage your stakeholders. Both tasks are also part of the Business Analysis Planning and Monitoring knowledge area.

TABLE 2.4 Output: Plan business analysis approach.

Task Output	Output Destinations	Source Knowledge Area
Business analysis approach	Plan stakeholder engagement.	Business Analysis Planning and Monitoring
	Plan business analysis governance.	Business Analysis Planning and Monitoring
	Plan business analysis information management.	Business Analysis Planning and Monitoring
	Identify business analysis process improvements.	Business Analysis Planning and Monitoring
	Prepare for elicitation.	Elicitation and Collaboration
	Conduct elicitation.	Elicitation and Collaboration
	Communicate business analysis information.	Elicitation and Collaboration
	Manage stakeholder collaboration.	Elicitation and Collaboration
	Analyze current state.	Strategy Analysis
	Define change strategy.	Strategy Analysis
	Assess risks.	Strategy Analysis

The recommended contents of the business analysis approach include the following:

- Business analysis roles and responsibilities
- Business analysis activities
- Business analysis deliverables
- Business analysis techniques

- Timing and sequencing of business analysis work

A number of stakeholders are involved with planning the business analysis approach for a project. Some stakeholders should participate in building all or part of the approach; others are affected only by the approach. As previously mentioned, the project manager must make sure that the business analysis approach aligns with the project approach. In a similar vein, testers must ensure that the approach facilitates appropriate testing of the resulting solution.

Stakeholder availability and involvement across the project life cycle may impact the contents of the business analysis approach. Key stakeholders involved with this deliverable include the following:

- Domain subject-matter expert (SME)
- Project manager
- Regulator
- Sponsor

It is also important that the business analysis approach be compatible with the development or implementation life cycle being used by the implementation team. Once the business analysis approach is complete, the team needs to think about who will be involved with the business analysis work on the project and determine the level of their involvement. You figure that out during stakeholder identification and analysis, which we will talk about next.

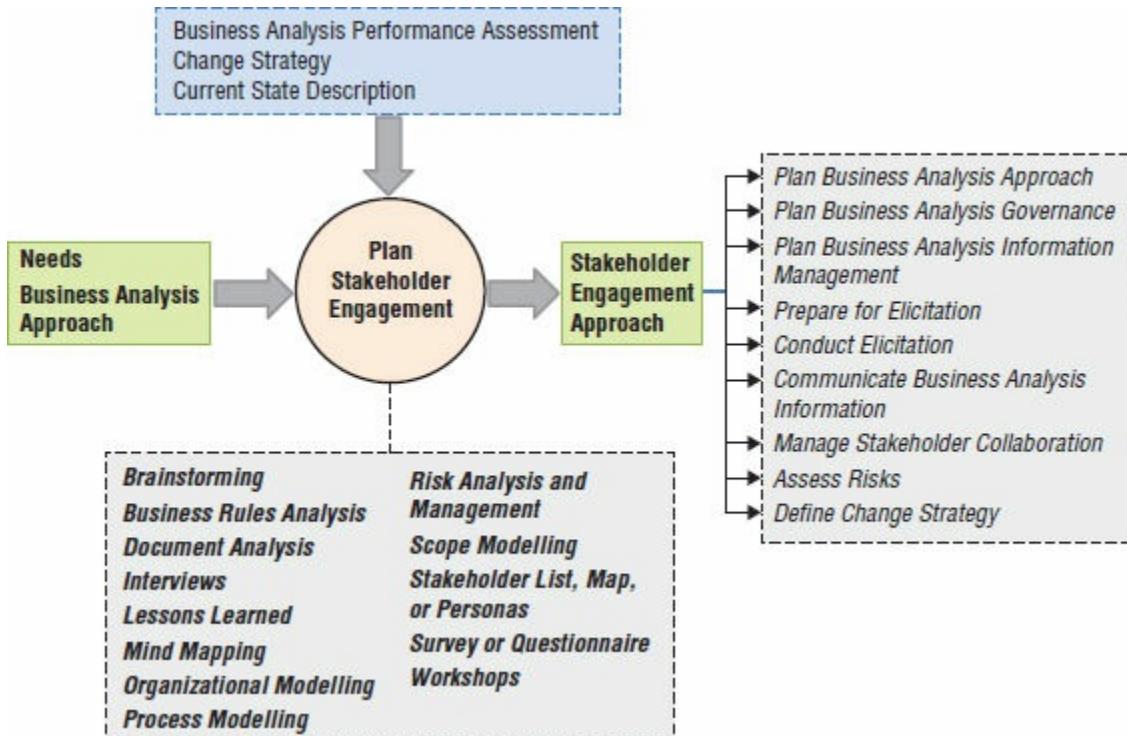
Plan Stakeholder Engagement

Think of the business analysis stakeholders on a project as members of a professional sports team. Each stakeholder has a particular position to play as a member of the team. Some of your stakeholders are starters and play for the whole game; others substitute in and out during the game and play intermittently. There are stakeholders on the team who don't play the game but might coach the team, bring water out onto the field, or cheer for the team from the stands. Just like players on a sports team, some of your stakeholders will play better than others. The business analysis team needs to know these stakeholders and the role or roles they play in the project.

Effective business analysts recognize the importance of knowing, understanding, and involving your project stakeholders. Stakeholder analysis should begin early in the project life cycle when the business requirements are being developed. The resulting stakeholder information is then revisited and revised throughout the project life cycle. Without up-to-date stakeholder analysis information, it is not easy to elicit, validate, or approve project requirements with the appropriate individuals or groups.

The business analyst initially performs stakeholder analysis during the controlled start phase of a project or as part of the pre-project activities. Analysis activities at this point in time focus on key stakeholders who are impacted by the business need and the proposed solution. The initial *stakeholder list, roles, and responsibilities* are enhanced and revised with each

subsequent project phase as the business, stakeholder, solution, and transition requirements are developed for the project. [Figure 2.2](#) summarizes the inputs, outputs, techniques, and associated tasks for conducting stakeholder analysis in accordance with the *BABOK® Guide*.



[FIGURE 2.2](#) Task summary: Plan stakeholder engagement.



Real World Scenario

Losing the Sponsor's Support

The initial stakeholder analysis helps the business analyst evaluate the attitudes of the stakeholders regarding the project at hand. Savvy business analysts also perform analysis periodically throughout the project to track changes in stakeholder attitudes. This is particularly true when institutionalized processes are the target of change. If you are not aware of changing attitudes among your key stakeholders, there could be trouble ahead for your effort.

This happened to Phil on a project that had been divided into three phases. The first two phases were relatively inexpensive commitments that were easily implemented. However, the third implementation phase involved much higher vendor involvement at a much higher cost.

When the time came to begin the third phase of this effort and the vendor's work estimates, which added up to several hundred thousands of dollars, were presented to the project sponsor, the sponsor's support for the effort

vanished. The sponsor's recollections of support for the previous two project phases also disappeared. Adding insult to injury, the sponsor made a point of disparaging the entire effort in the next executive staff meeting.

What was going on? Was there anything Phil could have done to prevent this? Phil was fortunate that he had the signed project approval documents to protect himself and his team from imminent doom. This is a worst-case example. Effective business analysts have learned to keep a finger on the pulse of their key stakeholders, especially in long-term projects. This often provides early warning signals of potential problems.



Remember that stakeholder roles are like hats. Some individuals may be called on to play a variety of stakeholder roles on the same project, as well as different roles in different projects. A stakeholder may wear many hats and play multiple team roles in your project. A job position title is typically defined and assigned by the organization and does not necessarily correspond to the team role an individual may play in a project. Team roles are defined project-specific roles and responsibilities. Team roles may occur intermittently or throughout a project.

As discussed earlier in the chapter, inputs can be guidelines, tools, or outputs produced by other business analysis tasks. Inputs are acted on by the task elements and techniques, producing one or more task outputs. Let's take a look at the task inputs used when analyzing project stakeholders and planning how to engage those stakeholders:

Needs The focus of the Plan Stakeholder Engagement task is on the stakeholders who will be affected by the business need that is driving the project. Over time, you may discover and analyze new stakeholders that the business analysis team was unaware of at the beginning of the project. You also need to beware of the stakeholders who change their position as the project progresses. The business need for the project is defined during Strategy Analysis.

Business Analysis Approach Successful business analysts make sure that the business analysis approach and the stakeholder collaboration approach are in sync with one another. Consistency across these two approaches ensures that the business analysis activities, stakeholder collaboration activities, and communication activities are all working together.

Let's take a look at the guidelines and tools that are also used to build the stakeholder engagement approach:

Business Analysis Performance Assessment The business analysis performance assessment contains results from business analysis activities on previous projects for you to review and incorporate into your current approach to working with your stakeholders.

Change Strategy Checking the organization's or the project's change strategy allows for improved assessment of stakeholder impact and development of more effective stakeholder engagement strategies.

Current State Description How things are working right now provides context for the work being done. Being familiar with the current state can lead to more effective stakeholder analysis and understanding relative to the impacts the planned change will have on your stakeholders.

[Table 2.5](#) summarizes the inputs to the Plan Stakeholder Engagement task and also lists the task that was the source of the input (if applicable).

TABLE 2.5 Inputs: Plan stakeholder engagement.

Task Input	Input Type	Input Source	Source Knowledge Area
Needs	Input	Define business needs.	Strategy Analysis
Business analysis approach	Input	Define business analysis approach.	Business Analysis Planning and Monitoring
Business analysis performance assessment	Guidelines and tools	Identify business analysis performance improvements.	Business Analysis Planning and Monitoring
Change strategy	Guidelines and tools	Define change strategy.	Strategy Analysis
Current state description	Guidelines and tools		

Business analysts building the stakeholder collaboration plan at any point in their projects should apply three detailed elements as they build their stakeholder list, roles, and responsibilities. The detailed elements necessary to analyze stakeholders and document meaningful information about them include the following:

- Perform stakeholder analysis.
- Define stakeholder collaboration.
- Assess stakeholder communication needs.

Let's take a look at each element in greater detail.

Perform Stakeholder Analysis

How do you figure out who needs to be involved with the business analysis activities for your project? It can be fairly straightforward to find the key business analysis stakeholders for a project. Because business analysts tend to spend a lot of time developing project requirements, identifying and analyzing stakeholders is an absolute must. It can be quite painful to miss a significant stakeholder early on and then discover them later in the project. There can also be indirect or hidden stakeholders out there who are waiting to be found.

Exam Spotlight

Remember that the business analysis stakeholders are individuals or organizations that are actively involved in or affected by the project's business analysis activities. These stakeholders might exercise influence over the project and its results, as well as contribute to solution scope definition and requirements development activities.

Stakeholder analysis consists of identifying stakeholders, defining stakeholder characteristics, and analyzing the collected information. Stakeholder analysis should occur at both the overall project level and each project phase. Business analysts should perform this task when a business need is identified and revisit and revise the results for as long as business analysis work continues on the project. The business analysis stakeholders are an important subset of the project stakeholders, so communication and coordination with the project manager is required.

Stakeholders may have varying levels of responsibility, authority, and participation. Their involvement can, and often does, change over the course of the project life cycle. Business analysis stakeholder responsibilities and authority can range from occasional contributions to the effort to having full responsibility for the project and its outcome.

Identifying stakeholders late in the project is risky. This can lead to new requirements late in the project life cycle, revisions to existing requirements, solution rework, and possibly even new solution work that was not scoped out or planned. Many stakeholders who are not involved at the appropriate time in a project tend to be dissatisfied and often do not buy into the resulting solution.

There are four key areas for you to consider as part of your stakeholder analysis activities: roles, attitudes, decision making, and power. Let's look at each area in greater detail.

Roles Understanding where and how your stakeholders will contribute to the business analysis efforts is critical to the success of your project. The business analyst must discover and document which stakeholders are responsible for the work they are tasked to perform, which are accountable for making decisions, which must be consulted prior to work being done, and which are to be informed after work is complete. These roles may be relative to the entire business analysis effort, a particular business analysis task, or a specific business analysis deliverable, such as the business analysis approach you learned about earlier in this chapter.

Attitudes Business analysts are responsible for assessing the positive and negative attitudes and behaviors. When doing this, they need to consider a number of factors. Stakeholder attitudes toward the project must be assessed and then managed across the project life cycle. At a minimum, attitudes need to be looked at relative to the business goals, objectives, and solution approach for

the project. Additionally, attitudes must be assessed from a people perspective, considering things like the stakeholder's perception of the value of business analysis work, collaboration, and the sponsor and other key team members.

Decision-Making Authority The business analysis team needs to know exactly which stakeholders have authority over the business analysis work and deliverables. This includes reviewing and approving deliverables (such as requirements), requesting and approving changes, and vetoing proposed requirements or solutions.

Level of Power or Influence Understanding the nature of influence is essential when building effective stakeholder relationships and trust. The business analysis team should assess the influence of key stakeholders at the project and organization levels. The amount of influence required for a successful project should be analyzed relative to the amount of influence possessed by the key stakeholders. Informal stakeholder influence with the other stakeholders cannot be overlooked, as having informal project champions is a gift to the business analyst.

Define Stakeholder Collaboration

How do you figure out who needs to be involved with the business analysis activities for your project? It can be fairly straightforward to find the key business analysis stakeholders for a project. Because business analysts tend to spend a lot of time developing project requirements, identifying and analyzing stakeholders is an absolute must. It can be quite painful to miss a significant stakeholder early on and then discover them later in the project. There can also be indirect or hidden stakeholders out there who are waiting to be found.

There are many approaches used to collaborate with stakeholders across the business analysis life cycle. It can be challenging to keep your stakeholders involved, interested, and engaged across the life cycle of your initiative. Stakeholder collaboration can be planned and formal. It can also take place in a spontaneous and informal fashion. Many business analysts document their stakeholder collaboration approach in a stakeholder collaboration plan by looking at the timing, location, and methods to be used for regularly scheduled stakeholder collaboration.

Stakeholder Communication Needs

You may also find yourself building a stakeholder communication plan to document your initiative's stakeholder communication approaches. Typically, these plans answer questions that address several aspects of stakeholder communication, such as the following:

- What needs to be communicated?
- Who is the audience?
- What is the delivery method?
- When should a communication occur?

- How often should a communication occur?
- Where are the stakeholders located?
- How much detail should the communication contain?
- How formal should the communication be?

We recommend that you combine your stakeholder collaboration and communication plans for the sake of efficiency and effectiveness. Both plans will be more detailed components of your stakeholder engagement approach.

Plan Stakeholder Engagement Approach

The more business analysis stakeholders there are, the more complicated dealing with them can become. Complexity factors that the business analyst should consider include the number and variety of end users for the solution, as well as the number of interfacing business processes and systems. This data is initially discovered as a part of stakeholder analysis and factors into the subsequent planning activities for both business analysis work and business analysis communications. There are a number of techniques that you can use when you are analyzing your project stakeholders. There are two techniques that we highly recommend you use when analyzing business analysis stakeholders:

- Organizational modelling
- Stakeholder list, map, or personas

We usually start off our stakeholder analysis efforts with the organizational modelling technique to get a sense of “who goes where” in the organization relative to a project. We also like building stakeholder maps to view our key stakeholders relative to different aspects of our projects and define who decides what. Let’s take a look at these two recommended techniques in greater detail.

Recommended Technique: Organizational Modelling

Most of us have seen an organization chart showing the hierarchy. This is an example of an organizational model. The model defines the purpose and structure of an organization or an organizational unit. When you use this technique for business analysis, you basically build an organization chart that shows the organizational units, lines of reporting, the roles, and the people in those roles.

When you are working with a new client, one of the first things you should ask for is a current organization chart. This will allow you to evaluate who sits where in the food chain and to decide who you might initially involve in your business analysis efforts. This is an excellent way to identify business analysis stakeholders.

Recommended Technique: Stakeholder List, Map, or Personas

Stakeholder lists, maps, and personas are essential to any business analysis effort. The amount of information you put in your list is up to you. What you

draw in your graphical representation of your stakeholders depends on the initiative itself. Personas are sometimes built to represent groups of users and how they interact with a product, kind of like building a fictional character and thinking about how they do things at work. Let's take a closer look at stakeholder maps and how they might be used when analyzing stakeholders.

Stakeholder maps are a graphical technique often used as part of stakeholder analysis. Be aware that a stakeholder map is not the same thing as an organization chart. While an organization chart shows people and how they fit into the organizational reporting and common structure, a stakeholder map looks at how these stakeholders will be involved with the resulting solution. This takes the concept of an organizational model one step further by visually relating the identified business analysis stakeholders to the solution, as well as to one another.

There are two basic types of stakeholder maps: a *stakeholder matrix* and an *onion diagram*. A stakeholder matrix provides a two-dimensional look at stakeholder influence versus their level of interest in your efforts. By comparison, an onion diagram depicts stakeholder involvement with the resulting solution. [Figure 2.3](#) shows an onion diagram.

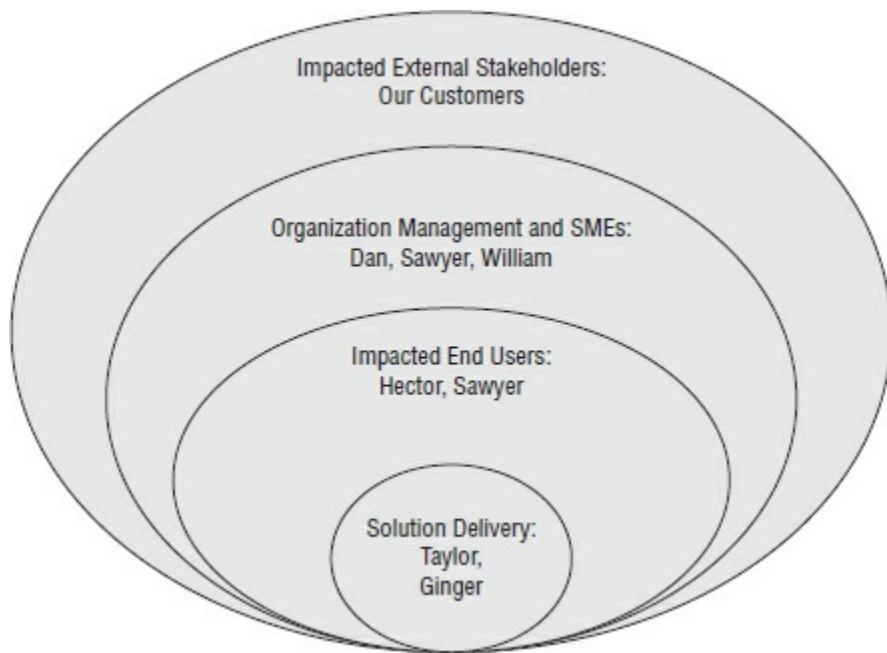


FIGURE 2.3 Onion diagram

Another popular and useful stakeholder analysis technique is a *RACI matrix*. This matrix defines business analysis stakeholder roles across four designations: Responsible, Accountable, Consulted, and Informed. You may create the matrix for the entire business analysis effort, a particular business analysis task, or a specific business analysis deliverable, such as the business analysis approach you learned about earlier in this chapter.

Responsible (R) Business analysis stakeholders are responsible for the work that they are tasked to perform.

Accountable (A) Accountability lies with the sole decision maker who makes

the required decisions for the business analysis effort task or deliverable. For any task or deliverable, there is only one accountable stakeholder.

Consulted (C) Relevant stakeholders should be consulted prior to the work being done if their inputs or advice is needed.

Informed (I) This is usually an “after the fact” role as these stakeholders are notified of the outcome after work is complete.

[Table 2.6](#) shows an example of a RACI matrix.

TABLE 2.6 Example RACI matrix

Palmer Divide Vineyards Requirements Development							
Tasks	William	Ginger	Hector	Sawyer	Dan	Hattie	Taylor
Elicitation	I	I	R, A	R	R	I	R
Analysis	I	I	R, A	R	R	I	R
Specification	A	I	R	C	C	I	C
Validation	I	I	R, A	R	R	I	R

Additional Techniques to Consider

The *BABOK® Guide* lists some additional techniques that you can use when analyzing your business analysis stakeholders for your project. They are summarized for you here:

Brainstorming Brainstorming is an excellent technique to use when the business analysis team is generating a list of all possible stakeholders for the business analysis effort. Generating ideas about who the business analysis stakeholders are could reveal hidden stakeholders that should be involved with your efforts.

Business Rules Analysis We think of business rules as things that define or constrain some aspect of how a business actually does business. They may define the business structure or perhaps control how the business behaves day to day. Business rules analysis allows you to identify those stakeholders who are the source of the business rules and those who abide by the rules when performing their jobs.

Document Analysis Document analysis is used to review existing organizational assets that might assist in planning your stakeholder engagement approach.

Interviews When interviewing business analysis stakeholders, the business analyst should always ask the interviewees to identify additional stakeholders.

Lessons Learned Don’t forget to look in the past for successes and challenges your organization has faced when it comes to engaging and collaborating with project stakeholders.

Mind Mapping This is used to identify potential stakeholders and understand the relationships between those stakeholders.

Process Modelling Anyone involved with the business processes that are affected by the proposed solution should be identified as a stakeholder. Process models can assist the business analyst with that identification, as they show the related processes and systems.

Risk Analysis and Management The results of stakeholder analysis may contribute to the risks for the business analysis effort and to the project. The people involved with your efforts can be the source of possible risks, and they can also help the team identify additional risks that may be important downstream.

Scope Modelling Scope models can show the business analysis team the set of stakeholders external to the solution scope that interact with the solution in some way.

Survey or Questionnaire Business analysts may use this technique to identify shared characteristics of a particular business analysis stakeholder group.

Workshops When conducting requirements workshops on any project topic, the business analyst should always ask the group of participants about any additional stakeholders.

Once you have chosen one or more techniques to apply, you are ready to create your stakeholder engagement approach. We'll discuss that next.

Build the Stakeholder Engagement Approach

According to the *BABOK® Guide*, the following information about your business analysis stakeholders should be included in the stakeholder engagement approach:

- Names
- Titles
- Characteristics
- Location
- Special needs
- Authority levels
- Number of individuals in each role
- Description of stakeholder influence and interest
- Collaboration approach
- Communication plan

Remember that there are two discrete sets of information that a business analyst needs to collect as part of their stakeholder list, map, or personas. First, you have the administrative data, such as names, departments, contact information, locations, roles, responsibilities, authority, and expertise. Second are the actual results of the stakeholder analysis. This is where the business

analysis team assesses and records stakeholder influence, interest, expectations, involvement, and any key requirements the stakeholders might have for the business analysis efforts and the overall project.

Once the initial stakeholder list, map, or persona information is complete, you use it as an input for a number of other business analysis tasks summarized in [Table 2.7](#). They include tasks from a number of knowledge areas such as Business Analysis Planning and Monitoring, Elicitation and Collaboration, and Requirements Analysis and Design Definition.

TABLE 2.7 Output: Plan stakeholder engagement approach.

Output	Output Destinations	Destination Knowledge Area
Stakeholder engagement approach	Plan stakeholder engagement.	Business Analysis Planning and Monitoring
	Plan business analysis governance.	Business Analysis Planning and Monitoring
	Plan business analysis information management.	Business Analysis Planning and Monitoring
	Prepare for elicitation.	Elicitation and Collaboration
	Conduct elicitation.	Elicitation and Collaboration
	Communicate business analysis information.	Elicitation and Collaboration
	Manage stakeholder collaboration.	Elicitation and Collaboration
	Define change strategy.	Strategy Analysis
	Assess risks.	Strategy Analysis

A number of stakeholders are involved with conducting stakeholder analysis for the business analysis activities of a project. Remember that the business analyst shares responsibility for analyzing business analysis stakeholders with the project manager. This means that any stakeholder analysis results should align with the project stakeholder analysis results in both structure and content.

Key business analysis stakeholders may be able to recommend other stakeholders to include in the stakeholder analysis results. This includes the customers, domain SMEs, end users, the project manager, sponsors, the regulator, and suppliers.



Real World Scenario

Case Study: Palmer Divide Vineyards Stakeholder List

Business analysts often like to use a spreadsheet to capture stakeholder information and keep it in a single location. [Table 2.8](#) provides a populated template for an initial stakeholder list containing roles and responsibilities at Palmer Divide Vineyards. You can collect the data shown here or add information to your list based on your organization and the nature of your project.

TABLE 2.8 Template: Stakeholder list containing roles and responsibilities

Name	Position	Role	Responsibilities	Location	Influence
William	Vineyard co-owner	Project sponsor	Governance and funding	CO	High
Ginger	Product manager	Project manager	Project scope, schedule, budget	CO	Moderate
Hector	Marketing director	Lead business analyst	Requirements development	CO	Moderate
Sawyer	Vineyard manager	Cultivation lead	Domain SME-biodynamic farming	CO	High
Dan	Winemaker	Domain SME	Domain SME - enology	CO	High
Hattie	Admin. assistant	Coordinator	Project administration	CO	Low
Taylor	IT director	IT lead	Implementation SME	CO	Moderate

Plan Business Analysis Governance

Business analysis governance is the road map for what decisions need to be made, when the decisions need to be made, and who is responsible for actually making those decisions. The business analysis team typically plans for business analysis governance. The governance process also directs the change control process, defining how changes will be analyzed, approved, documented, and communicated.

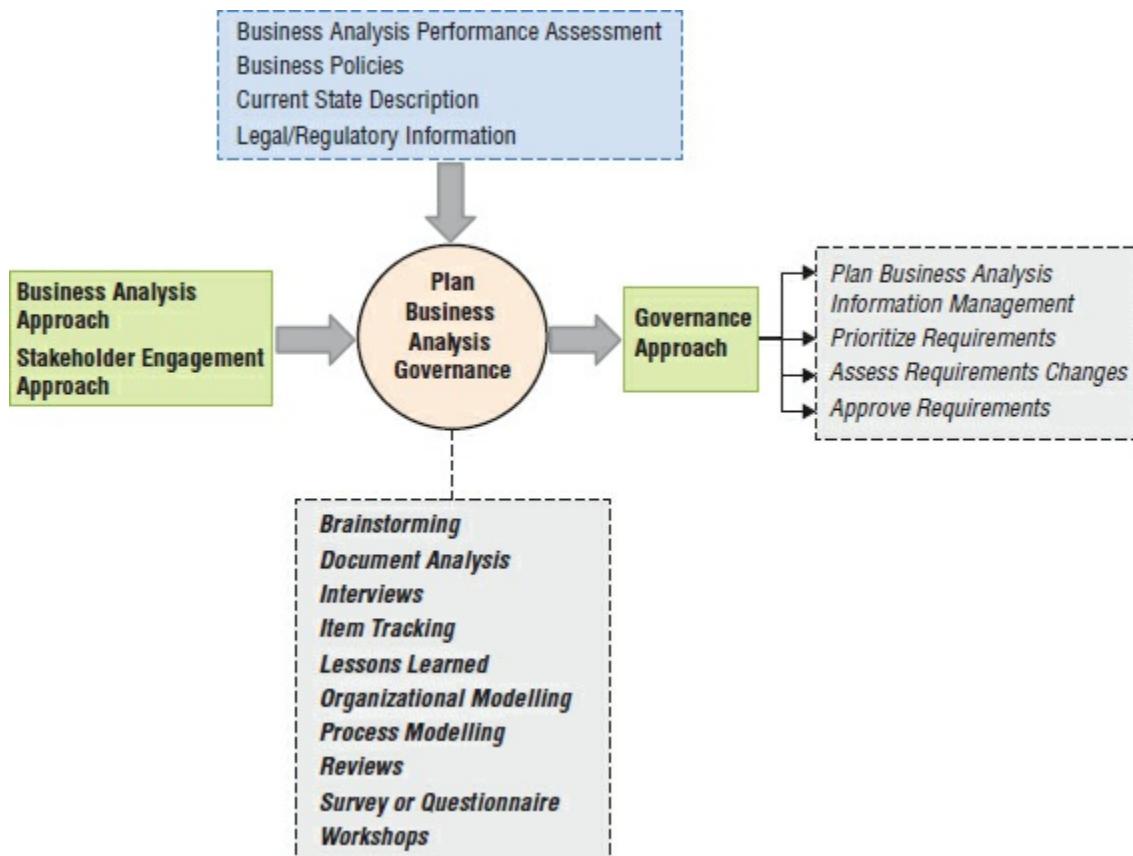
Exam Spotlight

The *BABOK® Guide* governance planning activities focus *only* on business analysis tasks and deliverables, such as decisions made about requirements

and designs.

Planning for business analysis governance is not much different from what the project manager does to create a decision-making architecture for the project; it is simply focused on business analysis work and deliverables. The business analyst identifies how business analysis work will be approached and prioritized, decides who has the authority to make certain types of decisions, and figures out how to deal with the inevitable changes that will come their way. If all goes well, the governance plan enables the business analysis team to work well with the project manager and make the right business analysis decisions at the right time.

Remember that a plan is a model of what needs to be accomplished for a particular effort. Plans are frequently updated to reflect what is known at a particular point in time. An initial business analysis governance plan often requires revision based on issues that the team encounters, lessons learned while work is being done, or changing business drivers and strategies that impact the project. [Figure 2.4](#) summarizes the inputs, outputs, techniques, and associated tasks for planning business analysis governance in accordance with the *BABOK® Guide*.



[FIGURE 2.4](#) Task summary: Plan business analysis governance.



Planning for business analysis governance requires coordination and communication with the project manager. The business analysis governance should be consistent with the overarching project-level governance that is in place.

Several key inputs for planning business analysis governance are guidelines, tools, or outputs produced by other business analysis tasks, such as the business analysis approach and the stakeholder engagement approach. These two deliverables govern how the governance planning is done and who is involved with the work to be performed. Let's take a closer look at the two task inputs used for planning business analysis governance:

Business Analysis Approach The business analysis approach governs planning activities, as it defines the planning process and the development life cycle. It is essential that you keep your business analysis governance process consistent with the overall business analysis approach for your efforts.

Stakeholder Engagement Approach Understanding the preferences of key business analysis stakeholders will shape the resulting business analysis governance process to some degree. Stakeholder roles and levels of involvement need to be understood and incorporated into your business analysis governance process.

Let's also take a look at the guidelines and tools that the business analyst may use when planning business analysis governance:

Business Analysis Performance Assessment There is nothing like looking at the past to help effective business analysts do better at planning for the future. You can use previous business analysis work performance data on an earlier phase in this project or on previous efforts as part of the current business analysis planning activities.

Business Policies Every organization has limits on what decisions can be made. Business analysts must be aware of these limits and plan for business analysis governance accordingly. Decision making is often bounded by contractual, legal, or regulatory constraints.

Current State Description The current state of the business area you are planning to change provides the business analysis team with context for the decisions that will need to be made moving forward.

Legal/Regulatory Information The business analyst should remember to seek out and use any existing policies, procedures, methods, and templates as part of planning business analysis activities.

[Table 2.9](#) summarizes the guidelines, tools, and inputs to this task, and it lists the source of the input (if applicable).

TABLE 2.9 Inputs: Plan business analysis governance.

Task Input	Input	Input Source	Source
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	Type		Knowledge Area
Business analysis approach	Input	Plan business analysis approach.	Business Analysis Planning and Monitoring
Stakeholder engagement approach	Input	Plan stakeholder engagement approach.	Business Analysis Planning and Monitoring
Business analysis performance assessment	Tools and guidelines	Identify business analysis performance improvements.	Business Analysis Planning and Monitoring
Business policy	Tools and guidelines		
Current state description	Tools and guidelines		
Legal/regulatory information	Tools and guidelines		

When planning business analysis governance, a business analyst needs to put on their project manager hat for a little while. Planning business analysis activities includes four detailed elements that define how the business analyst will approach it:

- Decision making
- Change control process
- Plan the prioritization approach
- Plan for approvals

Let's take a look at each element in greater detail.

Decision Making

Business analysts must define which stakeholders are responsible for making key decisions as part of the business analysis efforts. The decision-making process in the business analysis governance approach defines who is involved in making what decisions and to what degree. This is similar to defining the roles and responsibilities in a RACI matrix, as we discussed earlier relative to stakeholder engagement. Stakeholders may have many roles in decision making, such as the following:

- Participating in decision-making discussions
- Providing subject-matter expertise as part of decision-making
- Reviewing information
- Approving decisions that are made

Business analysts also need to think about how to handle decisions when the team cannot reach agreement or consensus. Setting forth escalation paths and

defining the stakeholders with the authority to make a final decision is a key component of business analysis governance.

Change Control Process

The business analysis team must decide how to handle changing requirements and designs across the project life cycle. The change control process should address not just baselined requirements but also changes to requirements that the business analyst develops. If the organization has a robust change management process, the business analyst can apply it to the requirements work on the project. If not, the business analysis governance approach needs to address how changing requirements are to be handled. This includes determining the process for requesting requirements or design changes, authorizing requirements or design changes, performing impact analysis for significant change requests, and determining how change requests are worded.

Exam Spotlight

The *BABOK® Guide* recommends that the requirements management process spell out the components found in a request for change. At a minimum, a change request should include cost and time estimates, an assessment of benefits and risks associated with the change, a priority for the requested change, and a recommended course of action.

Plan the Prioritization Approach

All requirements and designs are not created equal, nor do they deliver equal value to the business and the stakeholders. Business analysts are responsible for establishing the requirements, the design prioritization process technique, and the level of formality for their projects. They are also responsible for defining the prioritization scheme and process as early in the project as possible. This enables the project stakeholders to understand and buy into the way the business analysis team will prioritize the project requirements and designs at all levels of detail and focus, including the business, stakeholder, solution, and transition requirements found in the *BABOK® Guide*. We will spend more time on this topic when we look at prioritizing requirements during requirements analysis and design definition activities.

Plan for Approvals

Many organizations have defined sets of project deliverables, including deliverables that are traditionally created as a result of business analysis work. The business analysis team needs to decide where in the project life cycle the business analysis deliverables are created, agreed upon, and updated. You can find the full list of the recommended *BABOK® Guide* deliverables that may

require approvals along the way along with a brief description in Appendix E, “Quick Summary of Business Analysis Deliverables,” of this book.

Techniques to Consider

The *BABOK® Guide* lists numerous techniques that can be used when planning business analysis governance for your projects. They are summarized for you here:

Brainstorming As part of business analysis planning, decomposing and understanding the business analysis tasks and deliverables sufficiently enables effective planning.

Document Analysis Be sure to review existing governance processes or templates used for business analysis activities or for the overall project. The existing processes may have an impact on how to define and perform governance as part of your project.

Interviews The business analysis team may use interviews as a method to identify and select individuals who are responsible for business analysis decision-making, change control, prioritization, or approval activities.

Item Tracking For many business analysts, item tracking is synonymous with issue management. Be sure to keep track of your issues while planning your governance approach.

Lessons Learned There is no need to reinvent the wheel or to make the same mistakes when defining business analysis governance. Effective business analysts use lessons learned on previous projects to keep them on track with their own planning efforts.

Organizational Modelling Organizational models show the relationships between stakeholders and the roles and responsibilities the stakeholders have within the organization.

Process Modelling Many business analysts use process models to document the process or flow of business analysis decision making.

Reviews Don’t forget to review your governance approach with your key stakeholders and get their buy-in and approval on how decisions will be made and how change control will be used.

Survey or Questionnaire The business analysis team may use surveys or questionnaires as ways to identify and select individuals who are responsible for business analysis decision-making, change control, prioritization, or approval activities.

Workshops Workshops are excellent ways to work with a group and identify and select individuals who are responsible for business analysis decision-making, change control, prioritization, or approval activities.

Once you have chosen one or more techniques to apply, you are ready to create your business analysis governance approach. We’ll take a look at that next.

Create the Business Analysis Governance Approach

The business analysis governance approach should resemble the project governance approach of which it is a part. The level of detail in these plans depends on several factors, including the business analysis approach for the effort and the overall methodology being used for planning. According to the *BABOK® Guide*, the recommended content of a business analysis governance approach answers questions such as these:

- Who has responsibility and authority to make decisions about business analysis work?
- Who sets priorities for business analysis information?
- Who approves changes to business analysis information?
- Who defines the change management process for requirements and designs?

Once the business analysis governance approach is complete, it is used as input by a number of other business analysis tasks summarized in [Table 2.10](#). They are picked up and applied by several Business Analysis Planning and Monitoring and Requirements Life Cycle Management knowledge area tasks.

TABLE 2.10 Output: Plan business analysis governance.

Task Output	Output Destination Task	Output Destination Knowledge Area
Governance approach	Plan business analysis information management.	Business Analysis Planning and Monitoring
	Prioritize requirements.	Requirements Life Cycle Management
	Assess requirements changes.	Requirements Life Cycle Management
	Approve requirements.	Requirements Life Cycle Management

Any business analysis stakeholder can be involved with planning the business analysis governance for a project. Of particular interest is the verification and validation of key business analysis deliverables across the project life cycle. It is essential that the project manager participates in this effort because the business analysis plans are part of the higher-level project plan.

Key business analysis stakeholders may provide information or use the business analysis plans for their own planning efforts. Stakeholders involved with planning activities may include the following:

- Project manager
- Regulator
- The sponsor

The business analysis governance approach augments the stakeholder engagement approach by identifying specific stakeholder responsibilities for

decisions about business analysis work and change control. The governance approach also defines the process to manage requirements and design changes across the initiative.

The business analysis team also needs to take a closer look at how they plan to manage, store, and access all of the business analysis information produced across the project life cycle. That is defined in the business analysis information management approach. Let's move on to step through how the business analysis information management approach and its associated activities should be planned for on a project.

Plan Business Analysis Information Management

When you ask people what business analysts do, the first answer you usually hear is that business analysts write requirements. That's true. However, developing and managing requirements and design information on a project entails significantly more than just writing skills. The business analysis team must define their process for developing requirements and designs. They must consider how they will approach requirements and design traceability, reuse, requirements storage and access, and the requirements attributes to be applied. This information is formally documented in the business analysis information management approach.

Once the business analysis team establishes the information management approach for a project, the approach is not expected to change significantly across the project life cycle. However, it should be revisited at each phase of the project to ensure that it is being followed and that no changes are required for the work that will be started or based on business analysis performance to date.

To plan for information management, the business analyst must understand the organizational process needs and objectives that apply to the project. These needs and objectives may include compatibility with other organizational processes, constraints on time-to-market, regulatory and governance framework compliance, a desire to evaluate new approaches to solution development, or other business objectives.

In some organizations, an information management process or approach is already in place. If that is the case, the business analysis team needs to review the existing process and tailor it to fit their current project and environment. Remember that the business analysis team needs to develop project requirements and designs before managing them across the project life cycle.



One important aspect of business analysis information management is communicating requirements and design information across the project life cycle. It is essential to elicit the right information from key stakeholders about the capabilities of the desired solution and to validate that the analyzed requirements and design information is correct and complete.

Figure 2.5 summarizes the tasks required for Plan Business Analysis Information Management.

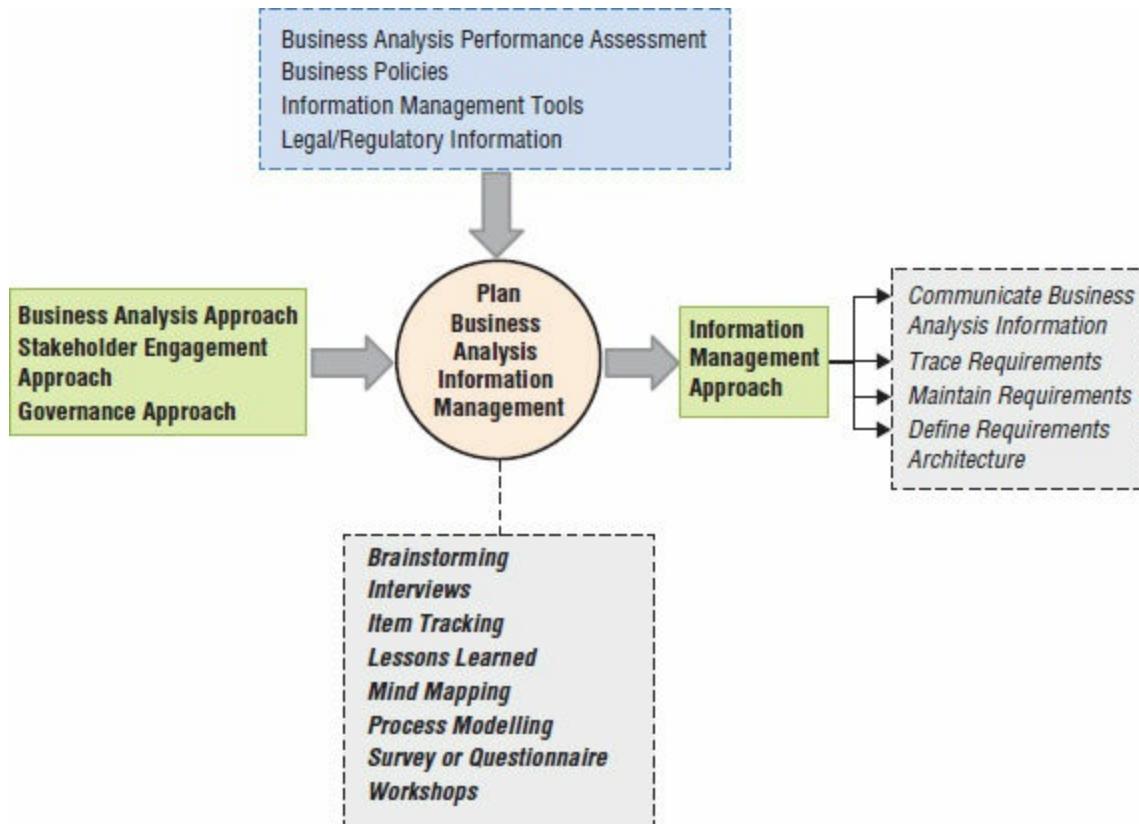


FIGURE 2.5 Task summary: Plan business analysis information management.

Now let's get to the task at hand, which is planning how to address business analysis information management. Every task has inputs, outputs, elements, guidelines, tools, and techniques. This task is no exception. Remember that task inputs are either informational in nature or outputs produced by other business analysis tasks. Inputs are acted on by the task elements and techniques, producing one or more task outputs. Let's take a look at the three task inputs used when planning a business analysis information management approach:

Business Analysis Approach The information management approach should align with the business analysis approach for your initiative, as well as aligning with the other approaches defined in this knowledge area.

Governance Approach The governance approach identifies how to deal with changes, decisions, approvals, and priorities for requirements and designs.

Stakeholder Engagement Approach The defined stakeholder collaboration and communication needs guide specific business analysis information needs. Basically, you must define what you need to know and who you need to get information from. Then, go out and get that information.

There are other guidelines and tools that can be used. Guidelines are instructions or descriptions about why or how the business analyst might undertake a particular task. Tools are methods of conducting business analysis

tasks or shaping a task output. Let's take a look at the guidelines and tools that business analysts apply when planning the business analysis information management approach:

Business Analysis Performance Assessment Be sure to review and incorporate results of previous business analysis efforts into your business analysis information management approach.

Business Policies Business policies define the limits within which business decisions must be made and how work will be completed. These policies also frame and constrain the information management approach that you select.

Information Management Tools Take a look at the tools your organization currently uses to store, retrieve, and share business analysis information. These may be the tools your organization requires you to use on your initiative.

Legal/Regulatory Information Sometimes legislative rules or regulations have an impact on your business analysis information. If that is the case, you need to address these additional constraints, such as information security or privacy, in your information management approach.

[Table 2.11](#) summarizes the inputs, guidelines, and tools for this task and lists the source of the input (if applicable).

TABLE 2.11 Inputs: Plan business analysis information management.

Task Input	Input Type	Input Source	Source Knowledge Area
Business analysis approach	Input	Plan business analysis approach.	Business Analysis Planning and Monitoring
Stakeholder engagement approach	Input	Plan stakeholder engagement.	Business Analysis Planning and Monitoring
Governance approach	Input	Plan business analysis governance.	Business Analysis Planning and Monitoring
Business analysis performance assessment	Guidelines and tools	Identify business analysis performance improvements.	Business Analysis Planning and Monitoring
Business policies	Guidelines and tools		
Information management tools	Guidelines and tools		
Legal/regulatory information	Guidelines and tools		

Planning the information management approach for business analysis activities requires the business analyst to understand both the business and technical drivers for the project. The business analyst addresses six detailed elements

when planning for requirements management activities across the project life cycle.

- Organize business analysis information.
- Define the levels of abstraction.
- Decide the traceability approach.
- Plan for requirements reuse.
- Look at information storage and access.
- Select requirements attributes.

Let's take a look at each of these information management elements in greater detail.

Organize Business Analysis Information

Organizing business analysis information is a challenging task on a complex project. Information must be structured for efficient access and ease of use. Duplication of requirements and conflicting requirements should be avoided. Business analysts decide how to do this early in their projects. Planning how you will organize your business analysis information requires consideration of the following factors:

- The type and amount of information to be collected
- Stakeholder access and usage needs
- Size and complexity of the change
- Relationships between the types of information

When defining your organization scheme, you must also take into account how much detail you plan to have and collect for your project. That takes us into our next element, defining the levels of abstraction for business analysis information.

Define the Levels of Abstraction

Deciding the breadth and depth of business analysis information can be challenging. Business analysis information typically ranges from very high-level, conceptual data to very detailed data about a particular capability. Three perspectives are essential as part of this definition: the stakeholder information needs, the complexity of what is being explained, and the importance of the change.

Business analysts must also consider the relationships between the pieces of information they collect and with which they work. That means defining the traceability between the pieces and parts of the project data, particularly when it comes to requirements and design information.

Decide the Traceability Approach

Traceability is a tricky thing. The business analyst wants to show the relationships between key pieces of business analysis information while not spending time tracing things that are not important. The information management approach is where the business analysis team figures out how to trace project requirements and designs. These decisions are based on project type and complexity.

The *BABOK® Guide* recommends taking into account the following factors when planning traceability for your project requirements and designs:

- Complexity of the domain
- Number of views of requirements that will be produced
- Requirements related risks, standards, and regulations
- Costs and benefits of traceability

Creating and maintaining traceability adds to the business analyst's workload on a project, so it should be reflected in the information management approach as well as in all subsequent planning activities.

We will take a closer look at implementing traceability for our requirements and designs in Chapter 4, "Overarching Tasks: Requirements Life Cycle Management," when we step through the trace requirements task within this knowledge area. Now let's move on and talk about planning for requirements reuse.

Plan for Requirements Reuse

Some requirements developed for a particular project might also be candidates for long-term use or reuse by the organization. The requirements that you choose to maintain might relate to infrastructure, hardware, software, or operational capabilities that the organization must meet on an ongoing basis versus just for your particular project. Common features or services used across multiple systems or process are also good candidates for reuse. Reusable requirements are structured, stored, and accessed by other business analysts in the organization. This "ease of reuse" requires advance planning and a common requirements storage repository.

The *BABOK® Guide* lists several types of requirements that can be reused across projects within an organization.

- Regulatory requirements
- Contractual obligations
- Quality standards
- Service level agreements (SLAs)
- Business rules or processes
- Product requirements

We will take a closer look at reusing requirements and designs in Chapter 4, when we look at the maintain requirements task within this knowledge area.

Reuse requires the ability for people to access the saved information. Let's look at that element next.

Look at Information Storage and Access

It is essential that the business analysis team create an information repository for storing requirements and designs. Use of the repository should be linked to the process defined in the information management approach and in the higher-level business analysis approach. Documents created during the project life cycle should be saved in a secured area.



Practically speaking, all business analysis documents, including the project requirements, should be saved in a business analysis document repository. If the same requirements document is required to be stored both in the project document repository and in the business analysis storage area, the project document repository should contain the unofficial copy.

The storage location for requirements and design work-in-progress documentation is at the discretion of the project manager or lead business analyst. Documents and copies (electronic or paper) that exist outside the project or business analysis information repositories should be made the responsibility of the document originator.

Select Requirements Attributes

Selecting requirements attributes for a project is an important step. Attributes are intended to be of assistance in the ongoing management of requirements across the project life cycle. Experienced business analysts know how to select the requirements attributes that add value to the requirements information for their project. Attributes allow the team to associate information and add context to individual requirements or groups of requirements.



Be careful when selecting your requirements attributes. Too many attributes can overwhelm business analysts with too much information. Too few attributes will cause the business analysis team to miss critical requirements information later in the project life cycle.

The *BABOK® Guide* recommends that the business analysis team consider using one or more of the common requirements attributes listed in [Table 2.12](#). Business analysts can also select from additional requirements attributes that are less frequently used, such as cost, resource assignment, revision number, traced-from, and traced-to.

TABLE 2.12 Common requirements attributes

Attribute	Description
Absolute reference	Unique numeric or text identifier for each requirement
Author	Name of the person who wrote the requirement if you have any questions later
Complexity	Difficulty in implementing the requirement
Ownership	Individual or group that needs the requirement
Priority	Indicates the relative importance of requirements so you can decide which requirements should be implemented first
Risks	Associated with meeting or not meeting the requirements
Source	Origin of the requirement if you need more information later
Stability	Indicates requirements maturity and if you can start work on it
Status	Proposed, accepted, verified, postponed, cancelled, or implemented
Urgency	How soon the requirement is needed

The *BABOK® Guide* lists several techniques that you can use when planning for business analysis information management for your project. They are summarized for you here.

Techniques to Consider

The *BABOK® Guide* recommends the use of one or more techniques when you are defining the business analysis information management approach for your project. Let's take a closer look at each one.

Brainstorming Brainstorming with stakeholders helps them uncover and share ideas about what their business analysis information management needs might be.

Interviews The business analysis team uses interviews with stakeholders as a way to identify and define their business analysis information management needs.

Item Tracking This technique allows for managing and tracking of issues discovered relative to information management needs on your project or initiative.

Lessons Learned Be sure to review existing information management tools, processes, and techniques used in your organization. The existing methods may have an impact on how to define and perform information management as part of your project.

Mind Mapping Mind mapping allows the business analysis team to identify and categorize business analysis information that needs to be managed.

Process Modelling Process models graphically depict the process used to

manage business analysis information. These models can help your stakeholders understand how to manage requirements, designs, and other data on your projects.

Survey or Questionnaire Many business analysts use this technique to remotely request stakeholder input about their business analysis information management needs.

Workshops Workshops allow you to discover business analysis information needs from groups of stakeholders versus asking people one by one.

Once you have chosen one or more techniques to apply, you are ready to create your information management approach. We'll discuss that next.

Define the Business Analysis Information Management Approach

The information management approach describes how business analysis information will be stored, accessed, and used during and after your project. Many components of this approach impact your process for developing and managing requirements. The *BABOK® Guide* recommends that the information management approach define the following aspects of the business analysis information on your projects:

- Organizing the business analysis information
- Capturing information at the correct level of detail
- Tracing the relationships between the information
- Using or reusing the information across the enterprise
- Accessing and storing information
- Maintaining characteristics about the information

Once the information management approach is complete, the business analysis team uses it as an input for a number of other business analysis tasks summarized in [Table 2.13](#). The approach provides information to tasks from several knowledge areas that focus on eliciting, analyzing, and communicating project requirements.

TABLE 2.13 Output: Plan business analysis information management approach.

Output	Output Destinations	Destination Knowledge Area
Information management approach	Communicate business analysis information.	Elicitation and Collaboration
	Trace requirements.	Requirements Life Cycle Management
	Maintain requirements.	Requirements Life Cycle Management

Define requirements architecture.

Requirements Analysis and Design Definition

The business analyst has the primary responsibility for creating or tailoring the information management approach for their project. The project manager also participates in this effort as they have responsibility for managing changes to the project scope and are accountable for delivering the resulting solution. Ideally, the change management approach for the project should also govern any requirements or design changes.

Several business analysis stakeholders are impacted by the contents of the information management approach.

- Domain SMEs
- Regulators
- The sponsor

In addition to defining the information management approach, the business analysis team needs to take a closer look at how they plan to measure and control business analysis work performance across the project life cycle. That is defined in the business analysis performance assessment. Let's move on to step through how business analysis performance improvements should be planned for on a project.

Identify Business Analysis Performance Improvements

There is no reason to do business analysis planning if the team isn't going to use those plans and approaches to measure and control business analysis performance. The primary reason for building the previous four business approaches in the Business Analysis Planning and Monitoring knowledge area is to be able to perform, monitor, and report on the business analysis work that is being done. This occurs at two levels: for the overall project and for each project phase. Monitoring and measuring business analysis performance against the business analysis approaches and the project plan ensures that the project's business analysis effort produces the desired outcomes and that the business analysis work is performed efficiently.



Real World Scenario

Implementing the Two-Faced Project

Remember the two-faced project we looked at as part of the earlier discussions on predictive versus adaptive project approaches? Well, you are a team lead on this online payment-processing system project. The system itself has been defined, designed, and developed. Your job is managing one or more of the adaptive “onboarding” of new customer implementations. One goal is to complete a successful customer implementation of this

system in less than 30 days. A large part of this work is jointly defining customer requirements and working together with the customers to get the payment link on their websites up and running with the customer's look and feel.

Ginger calls you into a meeting to review the current status of your first implementation effort. Not only are you expected to complete the work in less than 30 days, there is also a budget indicator attached to these efforts. Your planned budget for your “onboarding” effort is \$20,000 across the planned 30 days of work. Currently, you are one week into the effort and have spent \$9,000 of this planned budget. This budget measurement one week into your efforts is a metric, and it will be compared to the indicator and analyzed to see whether all is well at this point in time.

Ginger asks about this status and why almost half of your budget has been spent when you are only a quarter of a way through this project. Lucky for you, this is not a negative thing. You and your team have been defining the customer requirements for the interface and are expected to front-load the schedule and budget to get the definition as accurate as possible. Of course, that leaves you \$11,000 for the next three weeks of work, so you will watch it closely to make sure both the work and the spending stay on track.

Monitoring and controlling the progress and performance of business analysis work is not simply an objective task. You don't just look at a metric at a point in time and say that things are good or bad. Many additional factors can come into play. Business analysts almost always do some sort of analysis when looking at the current state of things and what is in the business analysis plan and approaches. This is how you determine whether a particular situation is acceptable at a point in time or whether there are issues to be addressed.

Exam Spotlight

Capturing business analysis performance metrics is done throughout the project life cycle. Once potential performance improvements are identified, they become guidelines for the next time a task is executed.

The business analysis team is responsible for determining the *metrics* used to measure business analysis work on the project. *Indicators* are specific numerical measurements that represent a measure for a specific set of business analysis activities or deliverables. [Figure 2.6](#) summarizes the task.

Two key inputs are used in managing business analysis performance for a project. The following are the specific task inputs used when managing business analysis performance on a project:

Business Analysis Approach Business analysis performance is traditionally measured in the same way you look at project performance. The business analysis approach is used to measure actual progress against the planned

deliverables, activities, tasks, and estimates.

Performance Objectives (external) Many organizations define the high-level performance outcomes that they want to achieve as a result of the projects or initiatives. These external performance outcomes need to be factored in to the business analysis performance improvements.

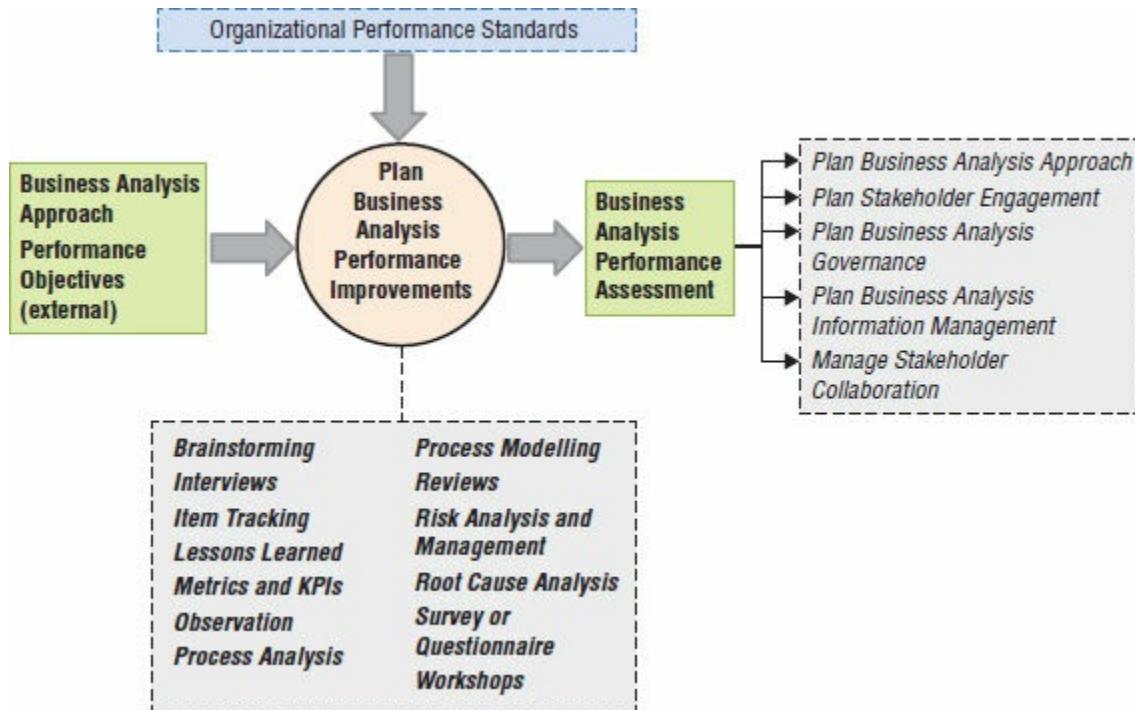


FIGURE 2.6 Task summary: Identify business analysis performance improvements.

In addition to inputs, there is an additional guideline used as an input to this task. Interestingly enough, many of these inputs, guidelines, and tools are metrics, standards, or expectations for performing business analysis work on a project. Here is the guideline:

Organizational Performance Standards Many organizations have mandated performance standards or expectations for business analysis work and for their overall organization or enterprise as well. If this is the case, the business analysis team must factor these into the business analysis performance metrics for their project.

[Table 2.14](#) summarizes the inputs to this task and lists the source of the input (if applicable).

TABLE 2.14 Inputs: Identify business analysis performance improvements.

Task Input	Input Type	Input Source	Source Knowledge Area
Performance metrics (external)	Input		
Business analysis approach	Input	Plan business analysis activities.	Business Analysis Planning and

		Monitoring
Organizational performance standards	Guidelines and tools	

Metrics can be tricky. A metric is a standard of measurement defined for some aspect of business analysis performance. Metrics define a quantifiable level for an indicator that the business analysis team wants to accomplish, such as meeting a schedule date for an activity or staying on budget for a particular phase of project work. Indicators identify specific numeric measurements indicating progress toward achieving something, such as scheduled work estimated to complete an activity or a particular budget number.

If the business analysis team does not select and define relevant metrics, it will be difficult to measure and assess how well business analysis work is done during the project. Identifying business analysis performance improvements requires the business analysis team to address four detailed elements:

- Performance analysis
- Assessment measures
- Analyze results
- Recommend actions for improvement

Let's take a closer look at each of these elements.

Performance Analysis

The business analysis team must decide on the methods to be used for reporting tracking and archiving business analysis performance data. These *reports* can range from formal, written documents and presentations to informal conversations by the water cooler. If the reports are to be archived, then they must be in writing. Again, many of these requirements may be set at the project level by the project manager, so keep the lines of communication open with that individual on your projects.

Assessment Measures

Business analysts don't always find it easy to define the level of performance required for effective business analysis work. It is necessary to determine the appropriate performance measures for effective business analysis work on a specific project. There are the traditional measures to report on, such as meeting schedule dates for activities and deliverables that can be applied. There are also more requirements-focused metrics, such as the frequency of requirements changes or the number of review cycles needed.



According to the *BABOK® Guide*, performance metrics will

encourage certain behaviors and discourage others. Poorly chosen metrics may drive behavior that is detrimental to the enterprise as a whole.

Performance measures may be quantitative or qualitative in nature. Quantitative data tends to be numeric and can be measured. Qualitative data is subjective and can be observed but not actually measured. [Table 2.15](#) describes potential business analysis performance measures.

TABLE 2.15 Business analysis performance measures

Measure	Description
Accuracy and Completeness	Determine whether business analysis work products are correct and relevant when delivered or if revisions are required to gain stakeholder acceptance.
Knowledge	Assess whether the business analyst has skills and/or experience to perform the task.
Effectiveness	Assess if business analysis work products are easy to use as standalone deliverables or if they require extensive explanation in order to be understood.
Organizational Support	Assess if adequate resources are available to complete business analysis activities.
Significance	Consider the benefit obtained from work products and assess if cost, time, and resource investments expended to produce the work products were justified for the value delivered.
Strategic	Look to see whether business objectives were met, problems were solved, and improvements were achieved.
Timeliness	Evaluate whether the business analyst delivered work on time per stakeholder expectations and schedule.

Assessing the value of business analysis work is done relative to a specific target for performance. Be sure you know who sets these targets for analyzing performance results in the organization.

Analyze Results

Business analysts look at the performance of the business analysis deliverables, the resources performing the work, and the overall business analysis process relative to the defined measures. Business analysis performance can be measured and evaluated from more than one point of view, such as the stakeholders, the business analysis team, a personnel manager, or an organization's Center of Excellence.

Recommend Actions for Improvement

After business analysts have the business analysis performance measures in hand for a particular period of time, they can assess those measures and determine whether any problems or improvement opportunities exist.

Experienced business analysts know they must engage key stakeholders to assist the business analysis team in identifying any *corrective actions* or *preventive actions* that might be required.

Corrective actions occur after the fact and are ways to reduce the negative impact of an event. In contrast, preventive actions focus on reducing the probability of a negative event happening in the first place. There is also a positive side of the coin: improvement actions. These actions occur when you want to increase the probability or impact of events with positive impacts on business analysis work and deliverables.

Exam Spotlight

Corrective and preventive actions are not the same thing. Corrective actions are steps taken to remove the causes of existing nonconformities or errors after they occur. Preventive actions try to stop events from happening in the first place.

Recommended Technique: Metrics and Key Performance Indicators

Metrics and *key performance indicators (KPIs)* are the basis for the monitoring, evaluation, and reporting system that addresses business analysis work, the overall project, and the resulting solution. KPIs are indicators that allow the business analyst or business analysis team to measure performance or progress of solutions and solution components toward strategic goals or objectives. Metrics facilitate the more basic monitoring and evaluation of business analysis work activities and deliverables in your quest to meet the overall solution goals.

Metrics and KPIs are essential for the ongoing *monitoring* and *evaluation* of business analysis activities on any project. Effective monitoring, evaluation, and reporting must address several elements: indicators, metrics, structure, and reporting. To measure a particular aspect of a project or solution, you must have at least one indicator. The business analyst needs to know the source of each defined indicator, how to collect the measurement, the person or system doing the collecting, and how often it will be done. Good indicators meet five quality characteristics: they are clear, relevant, economical, adequate, and quantifiable. If indicators can't be quantified and measured when we need them, they are not of much use.

Exam Spotlight

Metrics can be a specific point, a threshold, or a range of values based on what is being measured. They allow the business analysis team or the project manager to track, assess, and report on the quality of business

analysis work that is being done.

Other Techniques to Consider

These techniques assist the business analyst in building a thorough and consistent approach to identifying business analysis improvements on their projects.

Brainstorming Brainstorming is a good way for a group of stakeholders to generate ideas for business analysis improvement opportunities.

Interviews Another source of business analysis performance data is to interview key business analysis stakeholders and ask them for their assessment of the business analysis work on the project.

Item Tracking Issue management activities take into account tracking business analysis work performance issues that occur so those issues can be addressed and resolved later.

Lessons Learned A lesson learned process allows the business analyst to compile and document successes, failures, and recommendations for improving performance of business analysis activities on future projects.

Observation This technique allows you to witness business analysis performance in person and see for yourself how things are being done.

Process Analysis Process analysis is a technique to analyze existing business analysis processes and suggest ways to improve them, either as a group or as an individual.

Process Modelling Business analysis processes can be modelled and improved using this technique. The business analysis team may find it helpful to graphically depict the flow of business analysis work in order to improve performance.

Reviews Sitting down in a review meeting can help the team identify changes to business analysis processes and deliverables that can be incorporated into future work activities.

Risk Analysis and Management One facet of this technique should focus on identifying and managing potential risks that may impact business analysis work activities and deliverables.

Root Cause Analysis Asking “why?” five times can help the business analysis team identify the actual cause of problems encountered when performing business analysis work.

Survey or Questionnaire If you can’t speak directly with your key stakeholders, consider sending them a survey or questionnaire to ask them for their assessment of the business analysis work performance on the project.

Workshops Workshops are used to assess business analysis performance and generate ideas of improvement opportunities in a group setting.

Experienced business analysts apply one or more of these business analysis

techniques to manage, monitor, and control the performance of a project's business analysis work. On many projects, the project manager steps into this role, looking at business analysis work as a subset of their overall project. At other times, the lead business analyst watches what is going on, decides if all is well, and takes action when needed. Regardless of who is monitoring the business analysis work, the business analysis performance assessment should be created and used by the project team. Let's have a closer look at this key business analysis deliverable.

Produce the Business Analysis Performance Assessment

The business analysis performance assessment helps the business analysis team compare planned versus actual performance of business analysis work activities. If there are significant variances from the plan or approach, this assessment addresses the root cause of these variances and suggests approaches for resolving issues.

The business analysis performance assessment provides ongoing performance information to assist the team in planning future business analysis work based on what has happened to date. As a result of assessing business analysis performance, the business analysis team may need to revise the business analysis processes, results, and templates that are being used. The revisions could be adding in new approaches that increase efficiency, or they could be correcting things that are not working well. In either case, these results should be treated as lessons learned and incorporated into the process assets and business analysis information of the organization.

Once the business analysis performance assessment is complete, it is used as an input by a number of other business analysis tasks summarized in [Table 2.16](#).

TABLE 2.16 Output: Identify business analysis performance improvements.

Output	Output Destinations	Destination Knowledge Area
Business analysis performance assessment	Plan business analysis approach.	Business Analysis Planning and Monitoring
	Plan stakeholder engagement.	Business Analysis Planning and Monitoring
	Plan business analysis governance.	Business Analysis Planning and Monitoring
	Plan business analysis information management.	Business Analysis Planning and Monitoring
	Manage stakeholder collaboration.	Elicitation and Collaboration

The business analyst has the primary responsibility for creating the business analysis performance assessment for their project and updating any business analysis information. The project manager also participates in these efforts as they have responsibility for monitoring performance and updating process assets for the project. Ideally, the monitoring, evaluation, and reporting approach for business analysis work should align with the project approach to handling this data.

Several business analysis stakeholders are interested in the contents of the business analysis performance. They include domain SMEs, the project manager, and the sponsor.

How This Applies to Your Projects

In this chapter, you stepped through planning a serious set of business analysis approaches for a project. Performing business analysis work is much more straightforward if the team takes the time to think about and plan what they are going to do and how they are going about doing it before they start doing the work. Working on projects where the value of business analysis work is discounted can result in little to no planning for the business analysis activities and deliverables for the project. You will have to scramble and rely on your business analysis experience to get the work done if you are not prepared for everything that is needed. This is not the way to do good work. Planning business analysis activities is an important piece of the overall project planning, and it should be done for every business analysis effort.

The Shewhart “plan–do–check–act” cycle ([Figure 2.7](#)) is a four-step model that forms the basis for all of the tasks and elements found in the *BABOK® Guide*. The concept that “we plan prior to doing the work and measure what has been done” applies throughout the activities in the Business Analysis Planning and Monitoring knowledge area. The business analysis team plans project or project phase activities, deliverables, and approaches prior to actually doing the work. After the work is done, the business analysis team looks at the results to see what was learned and how well the work was performed. Anything that requires improvement is addressed prior to the next round. Things that worked well are repeated and used in subsequent efforts.

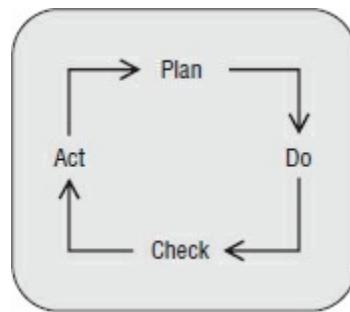


FIGURE 2.7 The Shewhart cycle

A core set of business analysis planning and documentation should be required for all projects regardless of project size or type. For complex projects, business analysts may choose to use the full set of *BABOK® Guide* deliverables across the six knowledge areas plus any project or technical documents that are required. In some cases, the business analysis deliverables may be combined and simplified for change-driven or straightforward project efforts. Business analysis documents should always be consolidated where feasible.

Some documents might not be required if the information is entered directly into other project documentation. If you choose to use other documents to record business analysis– specific data, make a note of this new information location in your *business analysis communication plan*. When work is being

performed at a client site, additional business analysis documentation is often required for a particular project by either the Project Management Office (PMO), project governance, corporate quality management, or technical management disciplines. This additional documentation is worth discovering early on so you plan your approach and process for producing it.

Another area that requires business analyst's attention is the process for endorsing and approving business analysis documents. We recommend allowing endorsement of business analysis documents for storage in the project document repository in one of the following two ways (as long as you are not in a regulated environment):

On Paper Sign a paper rendition of the document, scan the signature page, and send the scanned image along with the electronic copy of the document to the PMO.

Electronic Sign-Off Ask the signatory to send an email stating that the document has been reviewed and/or accepted, enter the words "email signature" in the signature block of the document, and send a copy of the email along with the electronic copy of the document to the PMO.

Summary

The five tasks of the Business Analysis Planning and Monitoring knowledge area do a nice job of producing a core set of planning and process-focused deliverables that can be referenced and applied across the project life cycle. The focus of these plans is twofold: the overall project and its more detailed project phases. Many planning techniques focused on defining and scheduling activities, and deliverables come straight from the project management playbook.

The *BABOK® Guide* recommends business analysts begin their planning efforts by building their business analysis approach. This basically defines the business analysis methodology to be used across the project life cycle. Concurrently, the business analysis team also identifies, analyzes, and categorizes the business analysis stakeholders with which they will be working. The business analysis approach and the stakeholder engagement approach are communicated, aligned, and shared with the project manager who is responsible for overall project success.

One of the primary roles of the business analyst is developing and managing requirements across the project life cycle. Decision making and change control are also defined as part of the business analysis governance approach. The business analysis team has to decide on how to collect and store information while performing business analysis work. This content is found in the business analysis information management plan.

Once these key business analysis deliverables are in place, they are revisited and revised as necessary. The business analyst should look at them whenever they are planning a new project phase, re-planning a phase that needs attention, or dealing with significant changes or issues that impact solution scope or project requirements and design. The approaches are used as the basis for the ongoing and iterative monitoring, evaluating, and reporting on the performance of business analysis work in the business analysis performance assessment. This allows the business analysis team to see how things are going and take corrective or preventive actions as needed along the way.

Exam Essentials

Be able to list the tasks found in the Business Analysis Planning and Monitoring knowledge area. You will see questions about the tasks, their associated techniques, their more detailed elements, and the key outputs that they produce on your exam. You should memorize the six tasks of this knowledge area and any key outputs or techniques associated with them. The tasks are:

- Plan the business analysis approach.
- Plan stakeholder engagement.
- Plan business analysis governance.
- Plan business analysis information management process.
- Identify business analysis performance improvements.

Be able to state the purpose of key deliverables. The good news is that the key deliverables produced by the tasks in this knowledge area are easy to remember because they align nicely with the task names. Here's the list:

- Business analysis approach
- Stakeholder list, map, or personas
- Business analysis stakeholder engagement approach
- Business analysis governance approach
- Business analysis information management approach
- Business analysis performance assessment

Be able to distinguish between predictive and adaptive approaches. Predictive approaches focus on ensuring that the solution is fully defined before its implementation begins. Adaptive approaches are a more agile and iterative effort to define and implement the resulting solution.

Be able to define metrics, indicators, and Key Performance Indicators (KPIs). A metric is a standard of measurement that is defined relative to business analysis performance defining a quantifiable level of an indicator that the business analysis team wants to accomplish. Indicators identify specific numeric measurements indicating progress toward achieving something, such as an activity or deliverable. KPIs are indicators that allow the business analyst or business analysis team to measure performance or progress of solutions and solution components toward strategic goals or objectives.

Be able to explain the key techniques used to analyze business analysis stakeholders. Conducting stakeholder analysis uses many knowledge area specific and general business analysis techniques. The knowledge area-specific techniques are a RACI matrix and stakeholder lists, maps, and personas.

Key Terms

This chapter stepped through the contents of the first knowledge area from the *BABOK® Guide: Business Analysis Planning and Monitoring*. Most of this knowledge area focuses on planning for the business analysis deliverables, approaches, and processes that the business analysis team will use throughout the project life cycle.

You should understand how to apply the techniques and tasks in this knowledge area in order to be an effective business analyst. Additionally, you will need to know the five tasks and their associated elements and techniques from this knowledge area in order to be successful on the CBAP® or CCBA™ exams. The tasks include:

- Plan business analysis approach.
- Plan stakeholder engagement approach.
- Plan business analysis governance.
- Plan business analysis information management.
- Identify business analysis performance improvements.

A number of new key words in Chapter 2 relate to managing and monitoring the business analysis work on a project. Here is a list of some of the key terms that you encountered in this chapter:

- adaptive approaches
- business analysis approach
- business analysis communication plan
- business analysis performance assessment
- business case
- corrective actions
- deliverables
- evaluation
- governance approach
- indicators
- information management approach
- key performance indicators (KPIs)
- metrics
- monitoring
- onion diagram
- predictive approaches

preventive actions
project approach
RACI matrix
reports
solution scope
stakeholder engagement approach
stakeholder list, roles, and responsibilities
stakeholder matrix

Review Questions

1. You are a business analyst addressing who will receive weekly business analysis status reports containing performance against actuals for your current project. You are performing tasks from which knowledge area?
 - A. Requirements Analysis and Design Definition
 - B. Business Analysis Planning and Monitoring
 - C. Requirements Life Cycle Management
 - D. Solution Evaluation
2. You are a business analyst working on a project where the timing of the business analysis work is early in the project life cycle. What type of business analysis approach best fits this project?
 - A. Predictive
 - B. Agile
 - C. Adaptive
 - D. Iterative
3. What technique might be used when determining the business analysis approach on a project?
 - A. Decision analysis
 - B. Mind mapping
 - C. RACI matrix
 - D. Scope modelling
4. Who is responsible for ensuring that the business analysis plan is compatible with the project plan?
 - A. Business analyst
 - B. Project manager
 - C. Implementation SME
 - D. Project sponsor
5. What key input is used to plan the business analysis approach for a project?
 - A. Business need
 - B. Business case
 - C. Business goals
 - D. Strategic plan
6. A RACI matrix describes the roles of stakeholders involved in business analysis activities. What does RACI stand for?

- A. Responsible, Accessible, Contacted, Informed
 - B. Responsible, Accountable, Consulted, Involved
 - C. Responsible, Accountable, Consulted, Informed
 - D. Responsible, Accountable, Coordinated, Involved
7. You have an implementation deadline for meeting a specific requirement on your current project. What requirements attribute indicates how soon a requirement is needed?
- A. Status
 - B. Priority
 - C. Urgency
 - D. Complexity
8. Which statement about conducting stakeholder analysis for the business analysis activities on a project is *false*?
- A. Done as long as business analysis work continues
 - B. Conducted during the project phase to which it applies
 - C. Performed as soon as the business need is identified
 - D. Determines stakeholder influence and levels of authority
9. All of the following tasks are performed when planning and monitoring business analysis activities except:
- A. Plan business analysis governance.
 - B. Conduct stakeholder analysis.
 - C. Plan business analysis approach.
 - D. Determine solution approach.
10. Which business analysis stakeholder role is involved with all business analysis activities on a project?
- A. Domain SME
 - B. Implementation SME
 - C. Business analyst
 - D. Project manager
11. When identifying business analysis performance improvements, what technique allows you to determine the metrics used for measuring performance and determining how those metrics may be tracked?
- A. Risk analysis and management
 - B. Metrics and KPIs
 - C. Surveys or questionnaires
 - D. Root cause analysis

2. The business analyst has defined how, when, and why the business analysis team will work directly with project stakeholders to develop requirements. What deliverable contains this information?
 - A. Governance approach
 - B. Stakeholder engagement approach
 - C. Information management approach
 - D. Business analysis approach
3. You are currently planning the business analysis information management approach for your project. What activities will you be performing as part of this task?
 - A. Plan traceability, plan reuse, and define decision making.
 - B. Define requirements attributes, plan traceability, and plan reuse.
 - C. Decide storage, define requirements attributes, and analyze stakeholders.
 - D. Plan change control, plan traceability, and decide level of abstraction.
4. What performance measures will the business analyst define for business analysis activities and deliverables on a project?
 - A. Variables
 - B. Metrics
 - C. Measures
 - D. Forecasts
5. What business analysis deliverable is a guideline or direct input to all tasks found in the Business Analysis Planning and Monitoring knowledge area?
 - A. Business analysis performance assessment
 - B. Business analysis approach
 - C. Business analysis governance approach
 - D. Business analysis information management approach
6. When planning business analysis activities, the business analyst may break down the project tasks and then estimate the amount of work each task will require. What technique are they using?
 - A. Decision analysis
 - B. Functional decomposition
 - C. Process modelling
 - D. Risk analysis
7. At the beginning of Business Analysis Planning and Monitoring activities, the *BABOK® Guide* recommends that the business analyst create which two planning deliverables?
 - A. Stakeholder Engagement Approach and Governance Approach

- B. Business Analysis Approach and Stakeholder Engagement Approach
 - C. Governance Approach and Information Management Approach
 - D. Information Management Approach and Business Analysis Approach
8. What knowledge area allows the business analyst to define their approach for tracing project requirements?
- A. Requirements Analysis and Design Definition
 - B. Business Analysis Planning and Monitoring
 - C. Solution Evaluation
 - D. Requirements Life Cycle Management
9. All of the following types of requirements may be candidates for reuse on your project, *except*:
- A. Quality standards
 - B. Business processes
 - C. Transition requirements
 - D. Service level agreements
10. When planning how to address requests for change, the business analyst should consider the cost and time estimates of the requested change, its associated benefits and risks, and the:
- A. Wording of the change request
 - B. Assumptions and constraints
 - C. Recommended course of action
 - D. Prioritization of the change

Chapter 3

Controlled Start: Strategy Analysis

CBAP®/CCBA™ EXAM TOPICS COVERED IN THIS CHAPTER:

- ✓ Understand the current state of the business.
- ✓ Define the desired future state of the business.
- ✓ Assess the risks inherent to the change.
- ✓ Develop a change strategy to achieve the desired business outcome.



To achieve a controlled start to a project or project phase, you must be methodical and consistent in its planning and definition. The Strategy Analysis knowledge area provides context for business analysts about the *business need*, which reflects the gap between the current business situation and a future business situation. One essential skill that the business analyst brings to the big-picture work is knowledge of the internal and external business environments surrounding the project. This is where experienced business analysts begin to translate an organization's business strategy into a proposed new business solution.

Strategy Analysis

Now it is time to add some important context to the business analysis planning and monitoring tasks discussed in Chapter 2, “Controlled Start: Business Analysis Planning and Monitoring.” Planning, monitoring, and managing the implementation of a plan isn’t going to do the team much good if you don’t have clear goals and expected outcomes. These need to be aligned with the business need so that everyone on the team knows the goals and expected outcomes. A controlled project start requires a plan, but it also requires a defined target that was developed and based upon the way things work today.

To define, design, and deliver a solution that addresses a business need or opportunity, the team needs to define and agree on the big picture of what needs to be done and why it needs to be accomplished. This high-level definition of the business requirements for a project is the essential first step in producing a successful project outcome. The *BABOK® Guide* defines the project’s big picture in the Strategy Analysis knowledge area.

To focus on what is important to business analysts early in their analysis efforts, let’s consider the tasks of this knowledge area with the framework of the Business Analysis Core Concept Model (BACCM™). A business analyst needs to keep an eye on their work at this point in time relative to the six concepts contained in the framework: changes, needs, solutions, stakeholders, values, and contexts. [Table 3.1](#) contains a list of the responsibilities associated with each concept.

TABLE 3.1 The BACCM™: Strategy Analysis

Core Concept	Business Analyst's Responsibilities
Change	Define the future state and develop a change strategy to achieve that future state.
Needs	Identify and prioritize needs within the current state of the business to determine the desired future state.
Solution	Define the solution scope as part of the change strategy.
Stakeholders	Collaborate with stakeholders to understand the business needs and develop a change strategy and future state to meet those needs.
Value	Examine the potential value of the solution to see whether the change is justified.
Context	Consider the change strategy in the context of the existing enterprise: stakeholders, processes, technology, and policies.

The Strategy Analysis knowledge area focuses on defining and documenting the business requirements and solution scope for a project. As part of this effort, business analysts document the current state of the enterprise relative to the

business needs driving a possible change in how things are done. That leads to the business requirements, which justify why a particular project should be initiated to address the business need.

Business requirements provide much needed context for detailed requirements activities that take place later. A business analyst takes a close look at the organization's current capabilities relative to a business need, problem, or opportunity. Once business analysts understand what needs to change, they can define the desired future state of the business. They then define a feasible solution scope and approach for addressing that situation.

The tasks in this business-focused knowledge area generate eight key business analysis deliverables. (You can find a complete listing in the *BABOK® Guide*.) We will cover these four significant deliverables in more detail in this chapter:

Business objectives

Business requirements

Change strategy

Solution scope

The Strategy Analysis knowledge area is addressed in Chapter 6 of the *BABOK® Guide*. The knowledge areas in this book are sequenced within the framework of a simple life cycle—controlled start, controlled middle, and controlled end. The Strategy Analysis knowledge area is addressed early in this book because big-picture tasks and business-requirements-focused deliverables of Strategy Analysis are key components of the controlled start to most projects.



Some folks view business analysis as a strategic discipline where business analysts define marketing strategies, build pricing models, and assess the financial position of a company. People who do not have an information technology background often hold this strategic view of business analysis. This differs from the more traditional take on business analysis similar to the set of knowledge, tasks, and skills we are talking about in this book. A master's in business administration (MBA) degree is typically a prerequisite for the strategic view of the business analyst role.

The *BABOK® Guide*'s more traditional view of business analysis requires a business analyst to have an associates or undergraduate degree in almost any subject. Augmenting this education with a business analysis certificate, some form of training, or the CBAP®/CCBA™ designation is highly recommended. However, there is a strategic element as part of the traditional view of business analysis. We are going to have a look at it right now because these big-picture activities are found in the Strategy Analysis knowledge area.

The Business Analyst's Task List

A business analyst has four tasks to perform in the Strategy Analysis knowledge area. We will look at each of these tasks in greater detail later in this chapter. The task list from the *BABOK® Guide* includes the following:

- Analyzing the current state of the business
- Defining the desired future state of the business
- Determining the change strategy and solution scope
- Assessing the risks of the selected change strategy

Tasks from the Strategy Analysis knowledge area focus on defining the business requirements and justifying delivery of the solution scope for the project. A business analyst is responsible for developing, defining, and managing the roles and tasks associated with this work. Tasks performed as part of this knowledge area are governed by the business analysis approach. Business analysis performance metrics for the tasks and deliverables are also defined and tracked. We will step through each of these tasks in greater detail.

Exam Spotlight

Approximately 23 of your 150 CBAP® exam questions focus specifically on Strategy Analysis. On the CCBA™ exam, expect to see about 18 questions on this knowledge area. The questions are organized and presented using this list of tasks. It is your job (and ours as well) to make sure you know where this work is done and how you go about actually doing it.

When Does Strategy Analysis Take Place?

The trick to forgetting the big picture is to look at everything close up.

—Chuck Palahniuk

The tasks in the Strategy Analysis knowledge area take place primarily at the beginning of a project. Many of these tasks are done as part of pre-project activities or the basis of a project's controlled start. The business requirements created for a project are like the frame on a painting: They frame and control the desired solution scope and the work efforts required to build the solution. The solution scope and high-level business requirements may require changes, need updates, or be enhanced with additional details as each subsequent phase of the project life cycle is performed.

As previously discussed, the controlled start of a project includes pre-project activities to determine whether it is a viable and worthwhile project for the business. At the end of controlled start, the business analysis team should have the solution scope finalized and a compelling set of business requirements built

and approved by the senior management team.



Remember that not all business analysis work is done as part of a project. Strategy Analysis activities may be performed as pre-project work, part of a business initiative, or during a project's initiation or feasibility phase. Strategy Analysis deliverables may also be refined or revised at any point in the project life cycle.

Analyze Current State

The business analysis team and key stakeholders must understand and be able to articulate why a change is needed. According to the *BABOK® Guide*, the business need “defines a problem or opportunity of strategic or tactical importance to be addressed.” The business need driving the change must be documented and agreed upon. A business analyst must understand the current state of the enterprise today relative to this proposed change in order to have a context for the change. Remember, not every project gets started because an organization is having a problem. Organizations often consider adding new or changing existing capabilities based on new market opportunities, customer feedback, newly available technologies, or changing legal and regulatory requirements.

Setting a baseline and a context for a change involves looking at the business drivers and issues to determine whether a change is really necessary. The business analyst becomes the master investigator, questioning the business need and any assumptions to make sure that the underlying problem or opportunity relative to the business need is understood and being properly addressed.

Understanding the current state of the business starts the team and its key stakeholders down the path of fully understanding a business problem or opportunity. Organizations need to stay targeted on the business needs versus reacting too quickly to problems, issues, or perceived inefficiencies. The current state definition sets the stage for what comes next in the early part of a project, including deciding on the following:

- The range of solution options to consider
- The set of stakeholders to involve
- The appropriate solution approaches to evaluate

After the business need and the current state of the business relative to that need are articulated for a project or initiative, they are not expected to change significantly through that project's life cycle. If the business need for a project does change during that project's life cycle, the business analyst will have to go back to validate all of the high-level planning and definition work to make sure everything is still okay.

Exam Spotlight

According to the *BABOK® Guide*, new business needs can be identified at many levels of the enterprise. The four typical sources are:

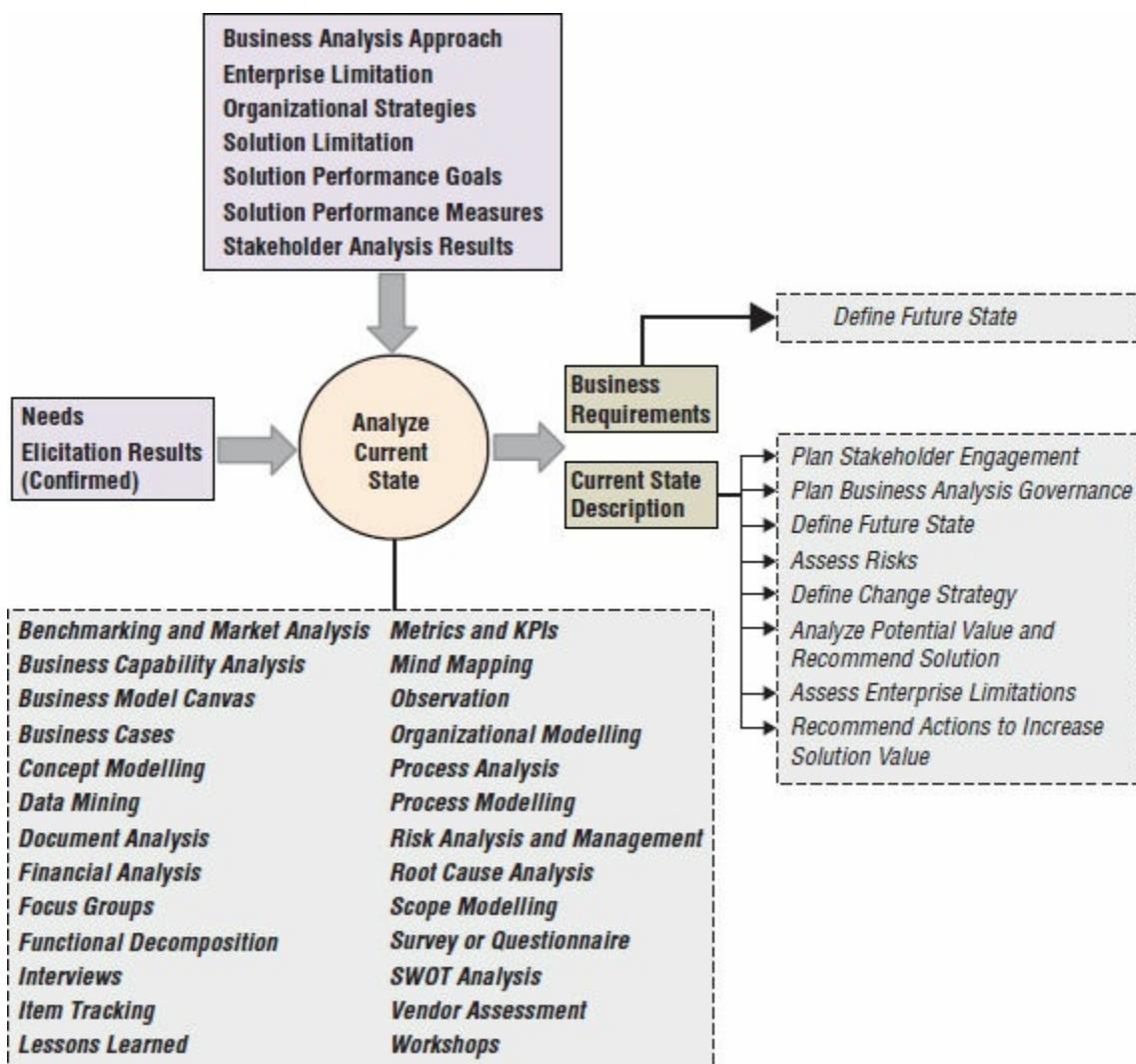
Top down: To achieve a strategic goal

Bottom up: To address a current process, function, or system

Middle management: To make better decisions or perform additional functions to meet business objectives

External drivers: To meet customer demand or business/market competition

[Figure 3.1](#) summarizes the inputs, outputs, guidelines, tools, techniques, and associated tasks for analyzing the current state of the business relative to a problem or an opportunity.



[FIGURE 3.1](#) Task summary: Analyze current state.

Inputs either are informational in nature or can be outputs produced by other business analysis tasks. Inputs are acted on by the task elements and techniques, producing one or more task outputs. Let's take a look at the task inputs used when analyzing the current state:

Needs Problems or opportunities must be understood as part of analyzing the current state of the enterprise relative to a potential change in how things are currently done.

Elicitation Results (confirmed) Elicitation results help key stakeholders to define and understand the current state of the enterprise relative to the business need. Elicitation information is informally confirmed to identify and resolve any problems with the information before it is used in some way. Confirmed elicitation results should contain no errors, omissions, conflicts, or ambiguity relative to other information that has been gathered or is known.

Guidelines and tools also may be inputs used by business analysis tasks. Guidelines are instructions or descriptions of why and how a business analyst will undertake a task. Tools, on the other hand, are methods for conducting a business analysis task or shaping a task output. Let's take a look at the guidelines and tools that may be used as inputs when analyzing the current state:

Business Analysis Approach The business analyst's approach to analyzing the current state of the enterprise is defined and guided by the business analysis approach. Every time a business analyst tackles a task, they need to think about how they will go about getting that work done. Using your organization's business analysis approach to performing this work can be helpful and keep you on track. The approach can be as simple as a series of steps to produce a deliverable or as complex as a detailed plan for gathering information and creating a project deliverable.

Enterprise Limitation Challenges, such as the lack of resources or knowledge/skill gaps, can exist within the enterprise relative to the business need and the potential change. These limitations can impact the resulting requirements and solution and must be identified and addressed.

Organizational Strategy Organizations usually have a set of business goals and business objectives. Some of them are found in the statements of mission, vision, and values, outlining what the organization wants to achieve and how they see themselves doing it. A determination of how and why addressing the problem or opportunity furthers these goals and objectives can be critical to success.

Solution Limitation Understanding the current state means being aware of the limits and challenges that may be present in an existing solution. Changes to the existing solution may impact or be impacted by the existing solution, its capabilities, and its infrastructure.

Solution Performance Goals Most organizations measure the current performance of the enterprise and its solutions, particularly IT solutions. These measures of existing solution performance are the baseline for setting the desired future state goals and improvements. These goals reflect

enterprise/solution and baselining.

Solution Performance Measures While solution performance goals are more focused on establishing a baseline for enterprise/solution performance, solution performance measures describe the actual performance of existing solutions in the enterprise. Analysts can then compare the actual to the baseline to assess change. The measures only focus on the actual state of solutions.

Stakeholder Analysis Results Identifying the business need is the first step in defining a project's business requirements. As part of their identification efforts, business analysts must elicit information from key stakeholders about their high-level needs and knowledge of the current state.

[**TABLE 3.2**](#) summarizes the inputs to this task and also lists the particular task that was the source of the input (if applicable).

Table 3.2 Inputs, Guidelines, and Tools: Analyze current state.

Task Input	Input Type	Input Source	Source Knowledge Area
Needs	Input	Define business needs.	Strategy Analysis
Elicitation results (confirmed)	Input	Confirmed elicitation results	Elicitation and Collaboration
Business analysis approach	Guidelines and tools	Plan business analysis approach.	Business Analysis Planning and Monitoring
Enterprise limitation	Guidelines and tools	Assess enterprise limitations.	Solution Evaluation
Organizational strategy	Guidelines and tools		
Solution limitation	Guidelines and tools	Assess solution limitations.	Solution Evaluation
Solution performance goals	Guidelines and tools		
Solution performance measures	Guidelines and tools	Measure solution performance.	Solution Evaluation
Stakeholder analysis results	Guidelines and tools		

Business analysts need to step through several elements to analyze, understand, and document the current state of the business. The elements necessary to analyze the current state are as follows:

- Business needs
- Organizational structure and culture
- Capabilities and processes

- Technology and infrastructure
- Policies
- Business architecture
- Internal assets
- External influencers

Let's step through each of the elements involved in analyzing the current state of the enterprise relative to a problem or opportunity.

Business Needs Business needs consist of problems and opportunities, such as customer complaints or the emergence of a new market. They are identified at every level of the enterprise and drive the enterprise to define and pursue a solution to satisfy that need. Remember to express business needs from the enterprise's point of view versus being too stakeholder specific to eliminate bias.

A business analyst must investigate the business problem or opportunity to ensure that there is a good reason to move forward and address the problem or opportunity. You are looking for a way to improve the business and add value. Consider several factors when performing this work:

- Quantify any adverse impacts.
- Define any expected benefits from the proposed solution.
- Estimate a timeframe for addressing the problem or opportunity.
- Look at the “do nothing” option as an alternative approach.
- Identify the underlying cause of the problem.

Organizational Structure and Culture Part of assessing the current state is performing a cultural assessment of the organization. The *BABOK® Guide* defines *organizational culture* as “the beliefs, values, and norms shared by the members of an organization. These beliefs drive the actions taken by [that] organization.” Communications channels and working relationships are influenced by the organization’s structure and culture and should be accounted for as part of analyzing the current state.

Capabilities and Processes When defining the current state, be sure to look at the activities the enterprise performs. Core capabilities or processes describe the essential functions of the enterprise that differentiate it from other enterprises. The current state description should define the current capabilities and processes of an organization relative to a business need. This description looks at the organization’s business processes, software, hardware, people, operations, and current projects. Activities and processes are measured by performance indicators that will help business analysts assess the benefits associated with a proposed change.

Business analysts can take a *capability-centric view* of the enterprise in their current state description. This perspective looks at innovative ways to combine existing capabilities and produce new outcomes. The capabilities being assessed are organized in functional hierarchies that relate them to other capabilities. On the flip side, business analysts may choose to take a *process-centric view* of the

enterprise, looking for ways to improve the performance of existing activities. Processes are typically organized in a different way than capabilities, flowing in an end-to-end fashion across the enterprise.

Technology and Infrastructure Technology is composed of information systems that support people as they do their work, communicate with others, and make decisions. Infrastructure is part of the enterprise environment, consisting of physical components and capabilities, such as computer hardware or operating a manufacturing plant.

Policies Day-to-day decision making in an enterprise is defined by policies at different organizational levels. Any policies that may have an impact on the change being proposed need to be identified and understood.

Business Architecture The current state of an enterprise relative to a business need does not exist in a vacuum. Be sure to consider the business architecture when thinking about making a change. *Business architecture* is the design, structure, and behavior of every aspect of the enterprise. This view of how things are currently working helps the business analyst align strategic objectives with tactical demands and possible changes downstream.

Internal Assets Assets are the tangible and intangible parts of the current state description. They include financial resources, patents, reputation, and brand names.

External Influencers External influences add constraints, dependencies, or drivers to the description and understanding of the current state of things. There are many sources of external influences on an enterprise, including industry structure, competitors, customers, suppliers, the political and regulatory environment, technology, and macroeconomic factors such as unemployment or inflation.

There are a number of techniques that you may choose to apply when analyzing the current state of the enterprise. To make sure you consider a range of business needs and desired outcomes before settling on what is driving your potential project, we recommend that you use the document analysis and the root-cause analysis techniques. Let's take a look at these two techniques in greater detail.

Recommended Technique: Document Analysis

Document analysis allows a business analyst to elicit, confirm, or crosscheck project requirements information by studying existing documentation and other relevant information. These secondary sources of information allow the business analyst to gather details for existing solutions (the “as is” situation) to see whether they have components that can be used or should be changed for the new solution that is being proposed (the “to be” situation).

Document analysis assumes that the existing documentation is easily available and up-to-date. If the information is not up-to-date and valid, it will be of little help to a business analyst in eliciting or confirming the requirements. The “existing stuff” is information prepared for another project or purpose but

relevant to your requirements development efforts. This type of secondary data can be quite helpful during requirements elicitation.

To conduct document analysis, the business analyst steps through three stages: preparation, the actual document review, and wrap-up. Preparation involves locating and evaluating the relevant system and business documentation. During document review, you study the material, identify the relevant details (technical and business), and document them along with any questions you might have to follow up on with the subject matter experts (SMEs). Wrap-up is the “get answers, review, and confirm” step.

Secondary Information Sources Checklist

Here is the checklist of secondary information sources that we use as a reminder when performing document analysis work or even just basic research about something. This existing stuff may include the following:

- Project and system documentation
- Corporate-level documents
- Annual reports, strategic plans
- Books and other publications
- Information out on the company intranet
- The company website
- Websites of competitors
- Organization charts, seating diagrams, phone lists
- White papers
- Technical standards and guidelines
- Informal and casual sources
- Internet research
- Competitor demos and evaluations
- Benchmarking studies
- Trade journals
- Issue registers
- Quality registers
- Demographic surveys
- User guides
- Market research information
- Change requests

- Problem reports
- Help desk reports
- Help desk logs
- Newsletters
- Meeting minutes
- Information about related projects

Recommended Technique: Root-Cause Analysis

Business analysts perform *root-case analysis* to determine the underlying source of a problem. This structured technique is used to examine a situation in order to establish the root causes and resulting effects of a particular problem. The *BABOK® Guide* recommends two common methods for root-cause analysis: the *fishbone diagram* and the *five whys*.

Fishbone Diagram A fishbone diagram allows the business analyst to show the causes of a problem or an effect. Fishbone diagrams are also called Ishikawa or cause-and-effect diagrams. This diagram allows the business analyst to see all possible causes of a result in a structured way and to make sure that everyone understands the problem or cause that is being addressed.

The business analyst and key stakeholders will brainstorm the categories and the possible causes in each category. Typical categories include things like people, methods, machines, materials, measurements, and environment. After the diagram is built, the business analyst will analyze the results and (hopefully) determine the actual cause of what is taking place.

This fishbone example looks at the possible causes for a specific effect: decreased wine sales revenue. The possible causes are diagrammed and broken down across four areas: people and skills, systems, distributors, and surroundings. A fishbone diagram, like the one shown in [Figure 3.2](#), offers the team the opportunity to analyze and discuss what they think is leading to this decrease in revenue.

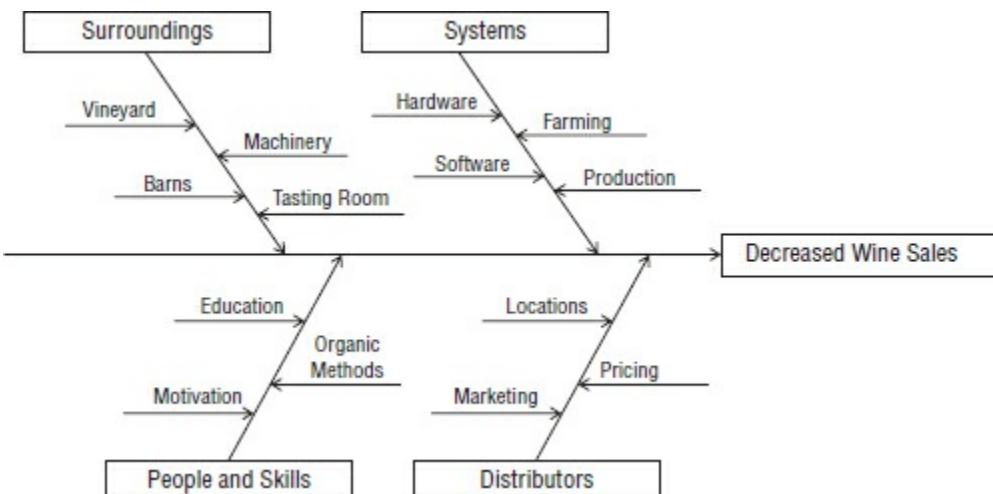


FIGURE 3.2 A fishbone diagram offers the opportunity to analyze and discuss.

Five Whys The five whys is a questioning technique that asks, “Why?” repeatedly in order to get to the root cause of a problem. This technique can be used alone or used with the fishbone diagram technique. This is a simple and effective facilitation tool. Many business analysts customize their use of this tool by asking, “How?” instead of “Why?” or by alternating between the two terms. Often the root cause is identified before the five questions are asked.

Be careful when you use this technique. We were in a meeting once where the facilitator really annoyed the senior user by repeatedly asking, “Why?” in order to determine whether automating an existing process would improve customer service. The senior user ended up throwing a powdered-sugar doughnut at the facilitator, making a big white spot right on the front of the facilitator’s black suit jacket.

Additional Techniques to Consider

The *BABOK® Guide* lists some additional techniques that can be used when analyzing the current state for your project. They are summarized for you here:

Benchmarking and Market Analysis Benchmarking is done to compare organizational practices against the best-in-class practices from competitors, the government, or industry associations. Market analysis researches customers to determine what those customers need or want. Both techniques allow you to identify opportunities for improvement in the current state.

Business Capability Analysis This technique allows a business analyst to define the current business capabilities of the enterprise, identify performance gaps, and prioritize those gaps and capabilities relative to the value and risk of a business need.

Business Model Canvas A business model canvas describes how an enterprise creates, delivers, and captures value to and from its customers. This technique provides an understanding of the value proposition between the enterprise and its customers as well as the critical factors in delivering that value and the resulting cost and revenue streams.

Business Cases Many organizations use business cases to justify a course of action based upon the benefits of a proposed solution. When analyzing the current state, be sure to capture information regarding the business need and the opportunity that need presents to the enterprise.

Concept Modelling Business analysts need to capture and organize the key terms and concepts to build a “business vocabulary” or glossary for people to use when discussing the current state and the proposed change.

Data Mining Data mining looks for useful patterns and insights in enterprise data, such as information on the performance of the enterprise. This can improve the decision-making process relative to a business need.

Financial Analysis Financial analysis is used to understand the profitability of the current state and to evaluate the enterprise’s financial capability to deliver

change.

Focus Groups This group technique allows a business analyst to bring together a selected group of key stakeholders to identify and discuss problems and opportunities as part of analyzing the current state.

Functional Decomposition Functional decomposition allows a business analyst to break down the complex systems and relationships that make up the current state into smaller, easily understood pieces and parts.

Interviews It is essential that the business analysts talk with stakeholders to understand the current state and any stakeholder needs relative to that current state.

Item Tracking This technique allows issue tracking and management relative to the description of the enterprise's current state. We often refer to this key technique as "issue management" on our projects.

Lessons Learned Looking at failures and opportunities from past change initiatives can assist with facilitating a proposed change. Lessons learned may also highlight and drive a new business need for process improvement in one or more areas.

Metrics and Key Performance Indicators (KPIs) Metrics and KPIs are used to assess the performance of the current state of the enterprise. Be sure to look for measurable ways to assess performance.



Remember, KPIs are indicators that allow a business analyst to measure performance or progress of solutions and solution components toward strategic goals or objectives. Metrics are quantifiable levels of an indicator measured at a particular point in time.

Mind Mapping Mind mapping is a creative way of note taking that captures ideas and information in a visual and nonlinear way relative to the current state. This technique is used to explore relevant aspects of the current state and to understand the factors affecting the business need.

Observation Observation allows a business analyst to gain insight into needs by viewing how things are done within the current state. Often, observation also helps business analysts discover new stakeholder and business needs based upon what they observe.

Organizational Modelling Remember those hierarchical organization charts with the rectangles and the lines connecting each level of job title? When analyzing the current state, many business analysts use this technique to describe the roles, responsibilities, and reporting structures that currently exist within the organization.

Process Analysis Process analysis identifies opportunities to improve the current state by looking at the efficiency and effectiveness of a particular process

that is part of the current state.

Process Modelling This graphical modelling technique describes how work occurs in the current state and the current solution.

Risk Analysis and Management Risk analysis and management identifies areas of risk or uncertainty that could negatively impact the current state. This technique also analyzes and evaluates those uncertainties to develop responses to deal with the risks.

Scope Modelling Ever been asked what is in scope and what is out of scope for your project? Scope models are used to define the boundaries of the current state description.

Survey or Questionnaire This elicitation technique helps business analysts gain an understanding of the current state from a large, varied, or disparate group of stakeholders in a relatively short period of time.

SWOT Analysis This tool evaluates the strengths, weaknesses, opportunities, and threats to the current state enterprise.

Vendor Assessment This technique determines whether vendors that are part of the current state are adequately meeting their commitments or whether changes are needed.

Workshops Workshops help engage key stakeholders as they collaboratively describe the current state and their current or future needs relative to that state.

Business analysts select the techniques they will apply as part of analyzing the current state. There is no need to use all of these techniques, so choose wisely. Let's take a look at the outputs that result from applying your selected techniques to this task.

Analyzing the Current State

There are two related outputs from this task: the current state description and the business requirements. The current state description provides the context for the enterprise's existing scope, capabilities, resources, performance, culture dependencies, infrastructure, external influences, and significant relationships between these elements.

The business requirements define the problem, opportunity, or constraint defined based upon understanding the definition and inner workings of the current state. The business requirements include the business need, describing the problem or opportunity that an organization is facing. The business requirements and the current state description drive the start of your project. [Table 3.3](#) summarizes the output from the Analyze Current State task.

[TABLE 3.3](#) Outputs: Analyze current state.

Task Output	Output Destinations	Source Knowledge Area
Current state description	Plan stakeholder engagement.	Business Analysis Planning and Monitoring
	Plan business analysis	Business Analysis Planning

	governance.	and Monitoring
	Define future state.	Strategy Analysis
	Assess risks.	Strategy Analysis
	Define change strategy.	Strategy Analysis
	Analyze potential value and recommend solution.	Requirements Analysis and Design Definition
	Assess enterprise limitations.	Solution Evaluation
	Recommend actions to increase solution value.	Solution Evaluation
Business requirements	Define future state.	Strategy Analysis



Real World Scenario

Case Study: Palmer Divide Vineyards—Business Goals, Objectives, and Need

As you become more involved with your Palmer Divide Vineyards work, you decide that you need to take a quick look at the organization's existing business goals, objectives, and needs as part of your current state analysis. As discussed in a recent team meeting, you would like to make sure you have it right. The team is curious about how the green initiative and your IT requirements development part of it fit into the organization's strategic plan. The team likes the idea of becoming a certified Green Business. However, they would like to validate how this business goal fits with the organization's long-term strategy and make sure that the project is really worth doing.

There are many aspects to attaining green certification, and the winery has initiated this current project to help achieve this strategic goal. A business objective for this effort is to conserve 20 percent of the current energy and water resource consumption within the next 18 months. The business need triggering the project came from combining the owner's strategic plans, a desire to operate an organic winery, and a perceived market advantage from selling green-labeled organic wines to the public.

Once the current state is identified, understood, and documented, it is used as an input or guideline by many other business analysis tasks. They include conducting stakeholder analysis, assessing risks, and analyzing the potential value of taking action. Additionally, the remaining three Strategy Analysis tasks require the current state as an input or guideline for performing their big-picture activities and completing the high-level definition of the project.

A number of stakeholders are involved with identifying and analyzing business needs within an organization. Typically, the business analyst is responsible for identifying and investigating the need. It is a best practice to appoint a sponsor who owns the business need and authorizes the actions to make sure that need is met. Often this is done by the project that was triggered as a result of the business need being identified and addressed.

Domain SMEs and end users can provide the business analyst with an excellent source of existing problems or limitations with systems and processes. Other key stakeholders involved with analyzing the current state of the enterprise relative to the business need include the following:

- Customer
- Implementation SME
- Operational support
- Project manager
- Regulator
- Supplier
- Tester

The business requirements and current state description guide the identification, definition, and selection of new capabilities, possible solutions, and solution approaches. Remember that the business need is typically contained in the business requirements created as an output from this task. Using the business requirements and current state description, you will now move to the next task and define the desired future state that meets the business need.

Define Future State

After the business analyst analyzes and understands the current state of the enterprise relative to the business need, the next step is to define the new capabilities required to address that business need. You must determine whether the organization's existing capabilities can meet the business need or whether additional capabilities and conditions are necessary. Typically, projects begin when organizations have to add new capabilities to the mix in order to meet a business need.

Defining the future state allows the stakeholders to understand the potential value of a range of solution options. This leads to making an informed decision and selecting the best possible solution as part of the change strategy. We will look at the change strategy in more detail later in this chapter. According to the *BABOK® Guide*, the future state is defined to a level of detail that:

- Allows for competing strategies to be identified and assessed
- Provides clear definition of outcomes satisfying the business need
- Details the scope of the solution space

- Allows for value associated with the future state to be assessed
- Enables consensus to be achieved among key stakeholders

[Figure 3.3](#) summarizes the inputs, outputs, techniques, and associated tasks for defining the future state at the appropriate level of detail relative to the business need within an organization.

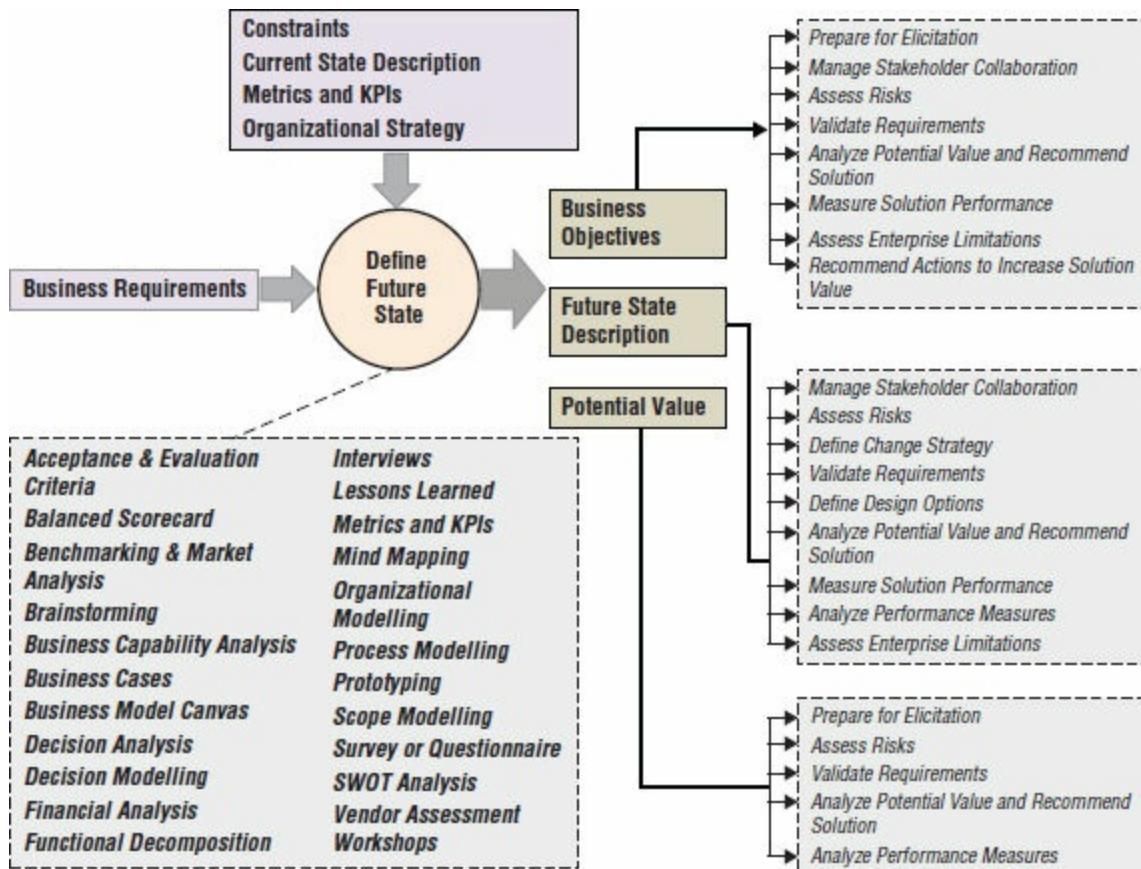


FIGURE 3.3 Task summary: Define future state.

Remember, the desired future state meets the business need. Let's take a look at the task inputs, guidelines, and tools used to assist the business analyst in defining the future state. There is a single input to this task.

Business Requirements The business requirements are the basis for defining the future state. Business requirements define the problems, opportunities, or constraints that need to be addressed by the solution scope. The business analyst is focused on what it will take to deliver the business requirements, either by using existing capabilities or by creating new capabilities.

Several guidelines and tools are also to be used as inputs when defining the future state. They include the following:

Constraints Constraints may exist within the enterprise that limit or change your solution options as part of the future state definition. The *BABOK® Guide* includes them as considerations in the 6.2.3 model but does not specify constraints in the list found in 6.2.5. We believe they are an important

consideration for any project.

Current State Description The current state description defines the current capabilities of an organization relative to a business need. The description may look at the organization's business processes, software, hardware, people, operations, and current projects. This is the first place you look to understand the organization's current capabilities relative to the business need being addressed and the desired future state to be defined.

Metrics and KPIs When defining the future state, key performance indicators and metrics must be considered. This allows you to determine whether the future state has been achieved when the solution is implemented.

Organizational Strategy This strategy defines the path, method, or approach the organization will take to achieve the desired future state. This strategy may impact the solution that is chosen for implementation.

Table 3.4 summarizes the inputs to this task and also lists the particular task that was the source of the input (if applicable).

TABLE 3.4 Inputs: Define future state.

Task Input	Input Type	Input Source	Source Knowledge Area
Business requirements	Input	Identify business need.	Strategy Analysis
Constraints*	Guidelines and tools		
Current state description	Guidelines and tools	Analyze current state.	Strategy Analysis
Metrics and KPIs	Guidelines and tools		
Organizational Strategy	Guidelines and tools		

* The *BABOK® Guide* includes constraints as considerations in the 6.2.3 model but does not specify them in the list found in 6.2.5. We believe they are an important consideration for any project.

To define the future state, you need to address and define a number of detailed elements within the task. Those elements are:

- Business goals and objectives
- Scope of solution space
- Constraints
- Organizational structure and culture
- Capabilities and processes
- Technology and infrastructure
- Policies

- Business architecture
- Internal assets
- Assumptions
- Potential value



The future state definition typically includes new, removed, and modified components of the enterprise. This definition may also include changes to organizational boundaries. Changes found in a future state description may impact the following enterprise components:

- Business processes
- Functions
- Lines of business
- Organizational structure
- Staff competencies
- Knowledge and skills
- Training
- Facilities
- Desktop tools
- Organization locations
- Data and information
- Applications systems
- Technology infrastructure

Let's step through each of the 11 elements involved in defining an organization's future state relative to a specific business need. Many of these elements are the same things you are analyzing when developing a description of the current state of affairs relative to the business need. The business analyst will compare the current state to the future state in order to see what actually needs to be done.

Business Goals and Objectives Early in a project or before a project even begins, business analysts are asked to analyze the organization's business goals and objectives as part of defining a particular business need and the desired future state. This strategic information is usually located in the organization's strategic plan, starting with the organization's mission, vision, and values.

Many people mistake the vision statement for the mission statement.

Vision The *vision* describes a future identity.

Mission The *mission* describes why that future identity will be achieved.

Values *Values* provide boundaries for how an organization defines its mission in order to achieve its vision.

Figure 3.4 depicts the levels of detail and the relationships ranging from an organization's vision, mission, and strategic plan to the projects being done in order to achieve those strategic goals.



FIGURE 3.4 Relating strategy and implementation

Business goals are strategic statements describing changes that the organization seeks to establish or current conditions that the organization wants to maintain. A single business goal may be subdivided into one or more focus areas, such as customer satisfaction, operational excellence, or business growth.

Business goals must be decomposed into a set of more quantitative business objectives. Business objectives state the predetermined results toward which effort is directed, such as a strategic position to be attained or a purpose to be achieved. Experienced business analysts make sure that their business objectives are *SMART* (*Specific, Measurable, Achievable, Relevant, and Time-Bound*).

Exam Spotlight

Let's take a closer look at each of these *SMART* criteria for business objectives. Make sure you are comfortable with these definitions as part of your exam preparation.

Specific A business objective is specific if it has an observable outcome. Specific objectives allow an organization to ascertain that particular business objectives have actually been met.

Measurable Quantifiable business objectives have measures that are used

to track and measure their observable outcomes. Remember, if you can't measure something, it can't be verified.

Achievable Business objectives must also be feasible. This is true relative to their cost, complexity, implementation, and ongoing support.

Relevant All business goals and objectives must align to the organization's mission, vision, and values. Otherwise, there is no need to pursue them.

Time-Bound Each business objective should have a defined timeframe for achieving that objective. Business analysts should ensure that the timeframe is consistent with the business need.

Scope of Solution Space The business analyst must also describe the range of solutions and the options that will be considered to achieve the desired future state. The target is reaching a desired outcome that delivers the most value and can be implemented to address the business need. Do not confuse the desired outcome with a solution; they are not the same thing. Solution options to achieve the future state will be evaluated relative to the desired outcome to make sure they can deliver the business benefits that are expected.

Constraints Constraints limit the current state as well as the planned future state. Constraints may not change as part of the solution. Constraints come in many flavors, such as budget, time, technology, infrastructure, policy, resources, team member skills, and regulations.

Organizational Structure and Culture When assessing the future state, remember to do a cultural assessment of the organization relative to the changes in formal and informal working relationships that may occur. Communications channels and working relationships are influenced by the organization's structure and culture and should be accounted for as part of analyzing both the current and future states of the enterprise during strategy analysis.

Capabilities and Processes Once you have a handle on the current capabilities, it's time to consider the new capabilities that may be needed to meet the business need. The business analyst is responsible for modelling and describing these new capabilities. One common way to do this is called *gap analysis*: defining what it will take to eliminate or minimize the gap between the current capabilities and the desired future state.

Technology and Infrastructure The question you must answer is, "Does the organization have the current business and technology capabilities to meet the business need?" You will look at specific parts of the current technology and infrastructure that relate to the business need. Existing technology may impose technological constraints on solution design. If you miss something, your view of the organization's current technical capabilities may be incorrect and incomplete. That will require you to spend extra time doing the research to discover what you need to know.

Policies Day-to-day decision making in an enterprise is defined by policies at different organizational levels. These policies might need to change as part of the desired future state. Policies also have a bad habit of constraining the solution space for the future state, so stay alert for these possible issues and

roadblocks.

Business Architecture Business architecture is the design, structure, and behavior of every aspect of the enterprise. The future state of an enterprise does not exist in a vacuum; all these elements work together to meet (or obstruct) business goals and objectives. This view of how things will work together in the future helps business analysts align strategic objectives with tactical demands and possible changes downstream.

Internal Assets Assets are tangible and intangible parts of the future state description. The future state may require new assets or more capabilities from existing assets.

Identify Assumptions You will have to make assumptions to define new capabilities for the future state. Assumptions are things that are believed to be true regarding meeting the business need. Make sure that you clearly understand any assumptions associated with the new capabilities. Identify and document each assumption, just in case you discover later that one or more of them are actually false.

Potential Value There is no reason to transition to a future state if no value is added to the enterprise as a result of the change. For the purpose of comparison, the value should be compared to the “do nothing” option. The *BABOK® Guide* defines the *potential value* of the future state as “the net benefit of the solution after operating costs are accounted for.” Potential value is a key component of the business case justifying the proposed change.

There are a number of techniques that you can use when assessing your organization’s current capabilities relative to a new business need. You can almost always use benchmarking and market analysis or *SWOT analysis* to help you define the future state of things. Let’s take a look at those recommended techniques now.

Recommended Technique: Benchmarking and Market Analysis

Benchmarking and market analysis studies target using new and different methods, ideas, and tools to improve organizational performance. When conducting such a study, the business analyst compares their organization’s strategies, operations, and processes against the best-in-class strategies, operations, and processes of their competitors and peers. After determining how other companies achieve superior performance, the organization can then propose projects to reproduce solutions that work elsewhere.

Recommended Technique: SWOT Analysis

Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis lets you look at the organization’s current capabilities relative to meeting a new business need. There are two dimensions to this analysis: the internal strengths and weaknesses of the organization and the external opportunities and negative threats that are in play. SWOT analysis is done using a matrix or a grid. Stakeholders brainstorm and complete each quadrant of the grid and then

analyze the resulting data to make sure that the business need and its environment are well understood. Solutions for meeting the business need may then be proposed and considered.

Additional Techniques to Consider

The *BABOK® Guide* lists (and provides a more in-depth discussion of) some additional techniques that may be used when defining the future state for your project. They are summarized for you here.

Acceptance and Evaluation Criteria Identify what may make the future state acceptable and how solutions options may be evaluated.

Balanced Scorecard This strategic planning and management tool is used to set targets for measuring the organizational performance in the future state. Balanced scorecards are outcome focused and provide a balanced view of the enterprise by looking at four dimensions: learning and growth, business process, customer, and financial.

Brainstorming Brainstorming is a creative way to collaboratively come up with ideas for what the future state might be. Participants generate new ideas and reduce those ideas into a smaller subset for subsequent analysis.

Business Capability Analysis The business analyst defines the future business capabilities of the enterprise as part of the future state. Capability performance gaps are prioritized relative to value and risk.

Business Cases A business case should capture the desired outcomes of the change initiative and clearly define the desired future state.

Business Model Canvas This technique maps out the needed infrastructure, target customer base, financial cost structure, and revenue streams required to fulfill the value proposition to customers in the desired future state.

Decision Analysis Decision analysis is a formal way to examine and model the possible consequences of different decisions being made in response to a problem. During future state definition, it is used to compare the different future state options and understand what the best choice might be.

Decision Modelling This technique is used to model complex decisions regarding future state options. Decision models can use tables or trees to show how data and knowledge are combined to make a specific decision.

Financial Analysis When defining the future state, financial analysis is used to estimate potential financial returns to be delivered by that proposed future state.

Functional Decomposition Functional decomposition allows the business analyst to break down the complex systems and relationships that will make up the desired future state into smaller, easily understood pieces and parts.

Interviews During future state definition, a business analyst speaks with key stakeholders in order to understand their needs and objectives relative to the future state.

Lessons Learned Lessons learned can assist business analysts in determining which opportunities for improvement will be addressed as part of the future state and how to improve upon the current state.

Metrics and Key Performance Indicators (KPIs) Metrics and KPIs are used to assess the performance of the future state of the enterprise. This technique can help business analysts determine when the organization has achieved the business objectives linked to the future state.

Mind Mapping Mind mapping is a creative way to develop future-state ideas using a visual, nonlinear diagram that maps the relationships between ideas.

Organizational Modelling Organizational models are used to describe the roles, responsibilities, and reporting structure that could exist in the future state organization.

Process Modelling This graphical modelling technique describes how work would occur in the future state.

Prototyping Prototypes model requirements for one or more future state options and help users and other stakeholders determine the potential value and feasibility of each option.

Scope Modelling Scope models define the boundaries of the enterprise in the future state. Plan ahead and model the current state, too. Then it is an easy comparison between where the enterprise is now and where the enterprise wants to be relative to the business need.

Survey or Questionnaire Surveys or questionnaires allow a business analyst to understand stakeholder needs and related business objectives that are part of the future state. This elicitation technique is effective with a large, varied, or disparate group of stakeholders over a relatively short period of time.

Vendor Assessment This technique assesses the potential value provided by vendor solution options relative to the desired future state.

Workshops Workshops help engage key stakeholders as they collaboratively describe the future state of the enterprise and their needs.

Let's take a look at the outputs result from applying one or more of these techniques to this task or defining the future state.

Defining the Future State

There are three outputs from this task: the business objectives, the future state description, and the potential value. The three outputs are tightly intertwined. The business objectives state the desired direction required for the business to achieve the future state. The future state description defines the new, removed, and modified components of the enterprise, and the potential value expected from the future state.

Once the business objectives, future state, and the future state's potential value are identified, understood, and documented, they are used as inputs by several other business analysis tasks. These tasks are listed in [Table 3.5](#). They have a strong solution focus, and they are integral pieces for defining the solution

approach and scope.

TABLE 3.5 Outputs: Define future state.

Task Output	Output Destinations	Source Knowledge Area
Business objectives	Prepare for elicitation.	Elicitation and Collaboration
	Manage stakeholder collaboration.	Elicitation and Collaboration
	Assess risks.	Strategy Analysis
	Validate requirements.	Requirements Analysis and Design Definition
	Analyze potential value and recommend solution.	Requirements Analysis and Design Definition
	Measure solution performance.	Solution Evaluation
	Assess enterprise limitations.	Solution Evaluation
	Recommend actions to increase solution value.	Solution Evaluation
	Manage stakeholder collaboration.	Elicitation and Collaboration
Future state description	Assess risks.	Strategy Analysis
	Define change strategy.	Strategy Analysis
	Validate requirements.	Requirements Analysis and Design Definition
	Define design options.	Requirements Analysis and Design Definition
	Analyze potential value and recommend solution.	Requirements Analysis and Design Definition
	Measure solution performance.	Solution Evaluation
	Analyze performance measures.	Solution Evaluation
	Assess enterprise limitations.	Solution Evaluation
	Prepare for elicitation.	Elicitation and Collaboration
Potential value	Assess risks.	Strategy Analysis
	Validate requirements.	Requirements Analysis and Design Definition
	Analyze potential value and recommend solution.	Requirements Analysis and Design Definition
	Analyze performance measures.	Solution Evaluation

A number of stakeholders are involved with defining the future state relative to a particular business need and to the current state of the enterprise. Business

analysts usually drive this work. It is a best practice to appoint a sponsor who owns the business need and authorizes the actions to make sure that need is met. Often this is done by the project that was triggered as a result of the business need being identified and addressed.

Customers and suppliers may be significantly impacted when a new future state is defined and targeted to meet a business need. Other key stakeholders who provide information about the strengths and weaknesses of the current capabilities include the following:

- Domain SME
- End user
- Implementation SME
- Operational support
- Project manager
- Regulator
- Tester

You can use the current and future state descriptions to identify, prioritize, and select the solution approach for implementing or obtaining the required capabilities. This will be set forth as part of the change strategy and discussed later in this chapter.



Real World Scenario

Case Study: The Boulder Barn Project

Here is an example of analyzing and documenting current and future capabilities for acquiring property and building a new barn for an equine-assisted learning facility in Colorado.

Overview

Equine-assisted learning is a rapidly growing field. Melisa Pearce, a lifelong horsewoman, psychotherapist, and entrepreneur, focuses on providing experiential horse interaction, coaching, and guidance to a wide variety of private and business clients. Melisa works with clients and horses at her ranch in an integrative approach consisting of ground-based horse interaction combined with positive coaching and guidance.

Melisa's leadership training curriculum is a unique, experiential program where participants work with horse partners. Horses possess their own personalities, behaviors, and attitudes and can therefore provide participants with immediate feedback on their ability to affect actions or change. By creating a partnering relationship with these animals to

complete specific tasks, participants learn about compromising, goal setting, overcoming fears, effective communication, in-process adjustments, effective teamwork, and how to act synergistically in order to create mutually beneficial, outcome-based relationships. The significant learning moments are applicable and transferable to both professional and personal life.

Existing Situation and Desired Future State

Five years ago, Melisa and her family moved to her current location in Boulder County, Colorado. She scaled down her property from a 50-acre ranch to 5 acres of property with an existing home. At the new location, Melisa built a covered arena, attached barn, and retail store space to meet her business needs and the needs of her horses and other ranch animals.

While her current location is adequate, Melisa would like to expand. She would like a larger barn with more arena space. Ideally, Melisa would like to sell her current ranch and purchase property in the same general area with approximately 35 acres of land. Most properties of this type would already have an existing home in place. Melisa would then build the following:

- Office space
- Barn with attached covered arena (35 feet longer and 70 feet wider than the current facility)
- Retail space with an upstairs observation and training room

Since Melisa has designed and built several ranch facilities in the past, this project will apply the plan-driven approach. She is very clear about the elements and materials intended for the new property, and the solution will be fully defined before implementation begins.

Assess Risks

During Strategy Analysis, the business analyst analyzes and manages the *risks* relative to the current state, the future state, and the change strategy. According to the *BABOK® Guide*, the risks are analyzed in a basic way with which most of us are familiar. The business analyst looks at the possible consequences if the negative risk occurs, the impact of the consequences, the actual likelihood of the risk occurring, and the potential timeframe when the risk might occur.

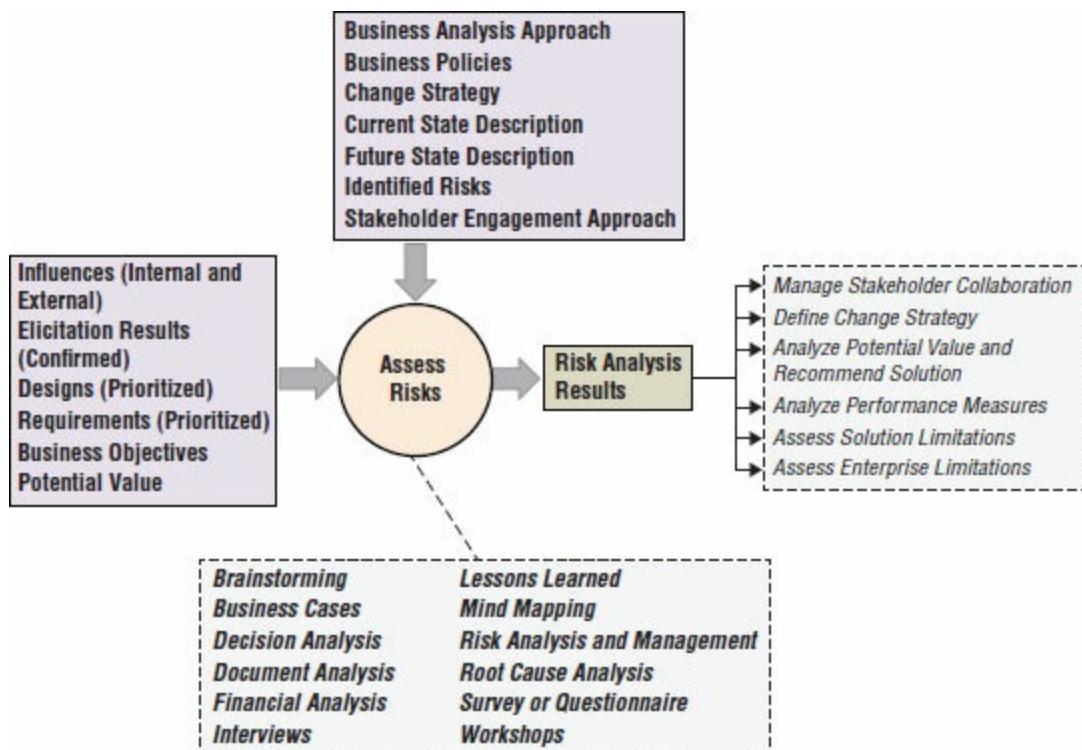
Exam Spotlight

In the *BABOK® Guide*, risks are uncertain events that can produce negative outcomes. The focus is on the negative (threat) aspect of risks versus the positive (opportunity) view of risk found in many methods. On your exam, opportunities or positive risks are captured as needs and managed

accordingly.

Effective business analysts understand the consequences of internal and external forces on the enterprise when working toward a desired future state. Assessing and being aware of risks allows the business analyst to recommend courses of actions as well as select a change strategy that fits the situation at hand. Business analysts manage risks on their projects at any stage of the life cycle to minimize the impact of those risks on the value of the implemented solution or change.

[Figure 3.5](#) summarizes the tasks involved in assessing risks during strategy analysis.



[FIGURE 3.5](#) Task summary: Assess risks.

[Table 3.6](#) summarizes the inputs to this task and also lists the particular task that was the source of the input (if applicable). Let's take a look at the task inputs used to assess risks.

[TABLE 3.6](#) Inputs: Assess risks.

Task Input	Input Type	Input Source	Source Knowledge Area
Influences (internal and external)	Input		
Elicitation results (confirmed)	Input	Confirm elicitation results.	Elicitation and Collaboration
Designs	Input	Prioritize	Requirements Analysis

(prioritized)		requirements.	and Design Definition
Requirements (prioritized)	Input	Prioritize requirements.	Requirements Analysis and Design Definition
Business objectives	Input	Define future state.	Strategy Analysis
Potential value	Input	Define future state.	Strategy Analysis
Business analysis approach	Guidelines and tools	Plan business analysis approach.	Business Analysis Planning and Monitoring
Business policies	Guidelines and tools		
Change strategy	Guidelines and tools	Define change strategy.	Strategy Analysis
Current state description	Guidelines and tools	Analyze current state.	Strategy Analysis
Future state description	Guidelines and tools	Define future state.	Strategy Analysis
Identified risks	Guidelines and tools		
Stakeholder engagement approach	Guidelines and tools	Plan stakeholder engagement.	Business Analysis Planning and Monitoring

Remember, inputs are either informational in nature or can be outputs produced by other business analysis tasks. Inputs are acted on by the task elements and techniques, producing one or more task outputs. Let's take a look at the task inputs used when assessing risks.

Business Objectives Business objectives describe and point to the desired direction needed to achieve the future state. They are also used to identify and discuss potential risks along the way as part of the risk analysis efforts.

Designs (Prioritized) Prioritized designs link to and influence the risks along the way to solution realization. Keep an eye on the designs priorities as you perform risk analysis activities as they directly influence how you prioritize and address the identified risks.

Elicitation Results (Confirmed) Effective business analysts make sure that the elicitation information contains an understanding of what the stakeholders perceive as risks in achieving the desired future state.

Influences (Internal and External) Influences are factors from inside and outside the enterprise that can impact achieving the future state. They can be as simple as organizational attitudes toward a proposed change in how things are done or tangible influences such as existing or proposed infrastructure and technology.

Potential Value Potential value is the value to be realized when a proposed

future state is implemented. This definition of business value provides a benchmark against which risks can be assessed across the project life cycle.

Requirements (Prioritized) Prioritized requirements link to and influence the risks along the way to solution realization. Keep an eye on the requirements priorities as you perform risk analysis activities as they directly influence how you prioritize and address the identified risks.

There are additional inputs that may be used by business analysis tasks: guidelines and tools. Guidelines are essentially instructions or descriptions on why and how a business analyst will undertake a task. Tools, on the other hand, are methods for conducting a business analysis task or shaping a task output. Let's take a look at the guidelines and tools that may also be used as inputs when assessing risks:

Business Analysis Approach The business analysis approach provides the framework for all business analysis activities. It contains the guidelines for how business analysts will perform risks analysis on their project.

Business Policies The limits and boundaries for decision making within the organization live here. These policies may have an impact on the risk management activities taking place.

Change Strategy The change strategy tells us how we plan to transition from the current state to the future state. Risks associated with this change and the steps of the change need to be considered when analyzing risks.

Current State Description How things are currently working provides the context within which the new work needs to be completed. Current state risks may come into play on your project, and you should watch for them.

Future State Description Along with the change strategy and the business requirements, this description provides business analysts with a baseline for determining the risks associated with achieving the future state.

Identified Risks Identified risks come from the risk analysis results and can be used as a starting point for additional risk identification and analysis activities relative to the current and future states.

Stakeholder Engagement Approach Stakeholders are an important source of risks for your project. Be aware of your stakeholders and get them involved with the risk assessment efforts across the project life cycle.

To assess risks, you will cover five areas within the task relative to one or more risks. The elements are as follows:

- Unknowns
- Constraints, assumptions, and dependencies
- Negative impact to value
- Risk tolerance
- Recommendation

Let's step through each of these elements involved in assessing risks.

Unknowns Let's face it, business analysts will never know everything that might happen as the result of a change. We will never identify all of the possible risks, either. Remember to look at lessons learned from previous projects to see whether history provides you with additional risks to analyze and watch out for. Stakeholder collaboration is essential when assessing risks. Working together helps you understand the stakeholder's view of the current and future states relative to risks that may be encountered.

Constraints, Assumptions, and Dependencies *Constraints, assumptions, and dependencies* should be analyzed for risks. Constraints are boundary conditions or limits that might impact an organization's ability to select certain solution approach options. Assumptions are factors that you believe to be true, but you have not yet confirmed them to be true. Dependencies are logical relationships between the pieces and parts of your project, such as risks, requirements, or activities.

Many business analysts treat constraints and assumptions as risks in and of themselves. To do this, restate the constraint, assumption, or dependency as an event or condition along with the consequences that could occur.

Negative Impact to Value To analyze the initial risks related to strategy analysis and the desired future state, a business analyst needs to determine the probability and impact of each identified risk. This is usually done with a common scale, such as the numbers from 1 to 5 with a 1 being low and a 5 being high. You can rank order your list of identified risks by multiplying the probability and the impact of each risk in the list. This gives you the magnitude of how likely a risk is to take place and how painful a risk will be if it does occur.

Risk Tolerance One key component of risk analysis is to understand your organization's risk tolerance. Organizations may be risk-averse, risk-neutral, or risk-seeking. Interestingly enough, an organization's approach to risk may change over time. Risk-averse organizations want to reduce risks and are willing to receive fewer benefits in return for a more certain outcome. Risk-neutral organizations are squarely in the middle. They typically need to see that the expected benefits equal or outweigh the costs of the proposed solution in order to continue on with things. Risk-seeking organizations will accept high risks if they come with high rewards for success.

Recommendation Business analysts are expected to recommend a course of action based upon assessing the risks relative to a change strategy and business need. Key stakeholders need to have a clear understanding of the risks relative to the value of the change. There are five typical categories of recommendation that can be made. The categories range from "go for it" to "do nothing."

- Pursue benefits of the change regardless of risk.
- Pursue benefits of the change while investing to reduce the risk.
- Increase the benefits of the change to outweigh the risks.
- Identify ways to manage and optimize opportunities.
- Do not pursue the benefits of the change.

Exam Spotlight

When assessing feasibility of a change to the enterprise early in the project life cycle, be sure that you address the technical, financial, and business risks of the proposed solution.

Technical Risks Will the new technology be able to scale up to the performance requirements of our large organization?

Financial Risks Will estimated costs be exceeded? Might potential benefits disappear?

Business Risks Can the organization change in order to realize the solution benefits?

There are a number of techniques that you may choose to apply when assessing risks for your project. Consider applying the risk analysis and management technique to ensure that you have a full range of possible risks to consider. Let's take a closer look at how to successfully use this technique.

Recommended Technique: Risk Analysis and Management

The risk analysis and management technique is used to identify and manage risks. Risk analysis and management is ongoing throughout a project. This technique is initially used when developing the business requirements and change strategy to identify areas of uncertainty about the technical, financial, and business feasibility of a proposed solution or solutions. This initial risk assessment during Strategy Analysis activities is the first step of many in the land of “things will not go as planned.” Remember, the *BABOK® Guide* focuses *only* on risks that are negative (threat) events.

The four steps of the risk analysis and management technique are risk identification, analysis, evaluation, and developing treatments or responses. Let's take a quick look at each step in more detail.

Risk Identification Risks need to be identified before they can be analyzed. Most business analysts enter identified risks into a risk register for a “one-stop shopping” approach to risk analysis and management. As additional information is analyzed regarding each risk, it can also be entered into the risk register.

Risk Analysis To analyze the identified risks, the business analyst determines the probability and impact of each risk. This simple determination is usually done with a common scale, such as the numbers from 1 to 5, with a 1 being low impact to value and a 5 being high impact to value.

Risk Evaluation An easy way to look at the risk exposure is to take the values you specified in Risk Analysis and add up all of the individual risk levels and impacts to determine an overall risk value. Risk analysis results can then be compared with the potential value of the change to see whether the overall level

of risk is acceptable for the change.

Risk Treatments or Responses The business analyst and key stakeholders need to determine the treatment or response strategy used to deal with significant negative risks. Five risk response strategies are listed in the *BABOK® Guide*; these strategies are summarized in [Table 3.7](#).

TABLE 3.7 Risk treatment or response strategies

Response	Description
Accept	Accept that the identified negative risk may occur and choose to do nothing about it.
Avoid	Take measures to ensure the identified risk does not occur.
Increase	Decide to take on more negative risk to pursue an opportunity.
Mitigate	Reduce the probability and/or the impact of an identified risk occurring.
Transfer	Transfer the responsibility for dealing with a negative risk to a third party.

Other Techniques to Consider

The *BABOK® Guide* lists several other techniques that can be used when assessing risks. They are summarized for you here:

Brainstorming Brainstorming is an effective way to generate a list of identified risks relative to the change being made from the current to the future state. The brainstorming approach complements risk assessment activities by enriching the list of possibilities.

Business Cases Business cases are often used to capture risks associated with alternative change strategies prior to selecting which strategy to use to make the change actually happen.

Decision Analysis This technique allows a business analyst to examine and model the costs and benefits of a proposed solution and its implementation. You can use graphical decision trees and financial valuation techniques to compare and contrast possible outcomes.

Document Analysis Experienced business analysts analyze existing documents for potential risks, constraints, assumptions, and dependencies.

Financial Analysis This technique focuses on the potential effects of risks on the financial value of the solution as well as on the costs to make that change happen.

Interviews Interviews are used to speak with stakeholders and understand what those stakeholders think might be risks for a proposed change to meet a business need.

Lessons Learned Lessons learned and other historical data should be used as a source of past risks and issues that might also be risks on your project.

Mind Mapping This visual, nonlinear information-gathering technique helps you identify and categorize potential risks and see the relationships that exist between those risks.

Root-Cause Analysis Root-cause analysis is an effective way to work backward to identify and address the underlying problem causing a risk. It uses fishbone diagrams and “five whys” techniques.

Survey or Questionnaire Surveys and questionnaires are often used to understand what geographically dispersed or large numbers of stakeholders think might be risks and the various factors of those risks.

Workshops This technique allows groups of stakeholders to share their thoughts on what might be risks and the various factors of those risks.

Exam Spotlight

Close your eyes and see how many of the techniques you can remember for assessing risks during strategy analysis. The more details you can memorize about each task in each knowledge area, the better. Details include inputs, guidelines and tools, elements, techniques, and outputs.

Let’s take a look at the outputs that result from applying one or more of these techniques to assess risks relative to a business need.

Producing Risk Analysis Results

Once the risk analysis results are complete, they are used as an input to multiple tasks later in the project life cycle ([Table 3.8](#)). Let’s take a quick look at a list of these tasks now.

TABLE 3.8 Output: Assess risks.

Task Output	Output Destinations	Source Knowledge Area
Risk analysis results	Manage stakeholder collaboration.	Elicitation and Collaboration
	Define change strategy.	Strategy Analysis
	Analyze potential value and recommend solution.	Requirements Analysis and Design Definition
	Analyze performance measures.	Solution Evaluation
	Assess solution limitations.	Solution Evaluation
	Assess enterprise limitations.	Solution Evaluation

The business analyst is responsible for getting this work done. The implementation SME is responsible for providing inputs to the risk analysis in

their area of expertise. The sponsor needs to understand the risks as part of authorizing and funding the changes. There are a number of additional stakeholders that should be involved with risk assessment activities, including the following:

- Domain SME
- Operational support
- Project manager
- Regulator
- Supplier
- Tester

You will use the risk assessment results as a decision-making tool when you are building the change strategy. Let's move on and take a look at this final knowledge area task.

Define Change Strategy

Defining the change strategy requires developing and assessing alternative approaches to the desired change before selecting the most appropriate approach. Developing the change strategy produces two key business analysis deliverables: the change strategy and the solution scope. The current state and future state definitions are critical to the success of this task as they provide valuable context for the change that is being driven by the business need.

Basically, the change strategy is used to justify the costs of doing a project in terms of the value the project adds to the business and the associated business benefits. A change strategy must look at both sides of the equation, comparing both the costs and benefits of a proposed solution. The expected business benefits and value of the solution should be evaluated relative to achieving business objectives and meeting the business need.

Many templates and documents are used for a change strategy. We have worked in organizations where the business case justifying our next project contained very much the same information as the change strategy contains here. The template you use for your change strategy is up to you. Just be sure that the information it contains is adequate to support a go/no-go decision about the project that implements the proposed solution defined in the business requirements. At a minimum, the change strategy should address the following areas:

- Context of the change
- Alternative change strategies
- Justification for why a change strategy is the best approach
- Investment and resources required to achieve the future state
- Value of the change after the solution is delivered
- Key stakeholders involved in the change

- Transition states required to achieve the future state

After the change strategy is completed and approved for a project, it is time for the detailed requirements development and other project work activities to begin. Many times, the project manager will use the change strategy as an input for the *project charter*.

According to the *BABOK® Guide*, the solution scope defines “the set of capabilities a solution must deliver in order to meet the business need.” It is derived from the business need, the desired outcome (business benefits), and the required capabilities. The solution scope will be impacted by the solution approach that is selected.

Solution scope focuses on the key business stakeholders of a project. This is where the business analyst defines a recommended solution in enough detail for these stakeholders to understand the new business capabilities the solution will provide. This definition includes all major features, functions, and external interactions of the solution.

Exam Spotlight

Be sure you can distinguish between product, project, and solution scope.

Project Scope Project scope defines the work needed to deliver a product, service, or result with the specified features and functions.

Product Scope Product scope describes the features and functions characterizing the product, service, or result.

Solution Scope Solution scope is the set of capabilities a solution must deliver in order to meet the business need.

[Figure 3.6](#) summarizes the inputs, outputs, techniques, and associated tasks for defining the change strategy and solution scope.

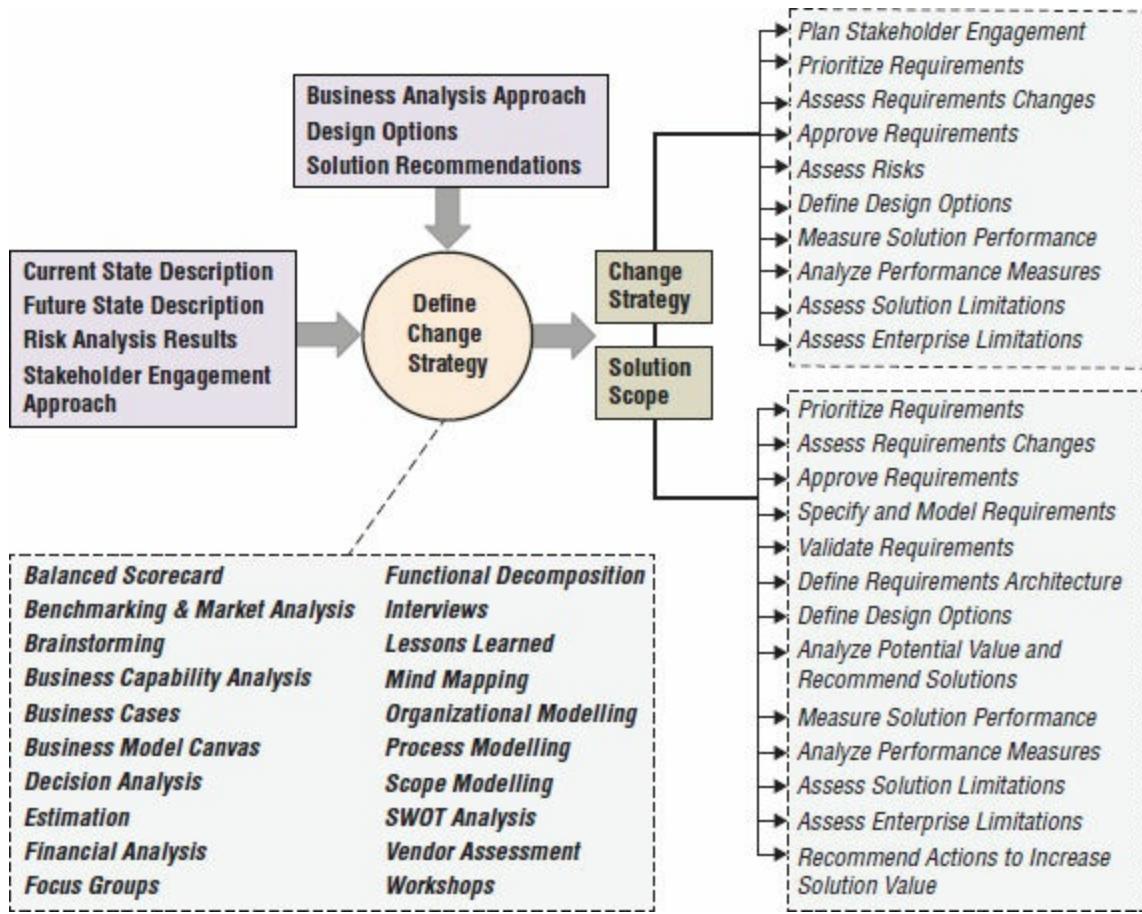


FIGURE 3.6 Task summary: Define change strategy.

Table 3.9 summarizes the inputs to this task and also lists the particular task that was the source of the input (if applicable).

TABLE 3.9 Inputs: Define change strategy.

Task Input	Input Type	Input Source	Source Knowledge Area
Current state description	Input	Analyze current state.	Strategy Analysis
Future state description	Input	Define future state.	Strategy Analysis
Risk analysis results	Input	Assess risks.	Strategy Analysis
Stakeholder engagement approach	Input	Plan stakeholder engagement.	Business Analysis Planning and Monitoring
Business analysis approach	Guidelines and tools	Plan business analysis approach.	Business Analysis Planning and Monitoring
Design options	Guidelines and tools	Define design option.	Requirements Analysis and Design

			Definition
Solution recommendations	Guidelines and tools	Analyze potential value and recommend solution.	Requirements Analysis and Design Definition

Let's take a look at the task inputs used to assist the business analyst in defining the change strategy and solution scope:

Current State Description The current state description defines the current capabilities of the organization relative to the business need being addressed and the desired future state to be defined. When defining the change strategy, an assessment of internal and external influences is crucial and should be found here.

Future State Description The future state description provides the business analyst with a baseline and context about the desired future state.

Risk Analysis Results This input defines the identified risks and analyzes negative exposure to value for each of those risks.

Stakeholder Engagement Approach Stakeholder communication and collaboration needs are defined in this approach. They can assist the business analyst in identifying change-related activities that are stakeholder related.

There are also several guidelines and tools used as inputs to this task. Let's step through them briefly now.

Business Analysis Approach The business analysis approach provides guidance on how the business analyst defines the change strategy and what the contents of that strategy might be.

Design Options There can be a number of design options that satisfy the business need. Each option has its own challenges that need to be addressed by the change strategy once an option is selected.

Solution Recommendations The change strategy typically offers more than one potential solution to a business need. By identifying possible solutions, the "best fit" solution can be selected that can be pursued to achieve the desired future state.

When defining the change strategy, business analysts are expected to address five essential elements when completing the task. Remember, the solution scope and the change strategy are the two key outputs from this task. The elements are as follows:

- Defining the solution scope
- Performing a *gap analysis*
- Assessing *enterprise readiness*
- Defining the change strategy
- Looking at transition states and release planning

Let's step through each of these elements involved in defining the change strategy for a project:

Solution Scope The *BABOK® Guide* defines a solution as “the outcome of a change that allows an enterprise to satisfy a need.” Solution scope describes the boundaries of a solution, including the major features, functions, and interactions of the proposed solution. You need to be sure to state both the in-scope and out-of-scope solution components across the full enterprise architecture.

Gap Analysis Gap analysis results show the difference between the current state and the future state of the enterprise relative to a business need. Business analysts compare the two states and look at the capability gaps between where the enterprise is right now and where the enterprise wants to be in the future. The change strategy creates the missing capabilities or improves upon existing capabilities to eliminate or minimize the gap.

Enterprise Readiness Assessment This assessment looks at the enterprise’s capacity to make a change, use the resulting change, and operationally support the change over time. This assessment is made relative to realizing value from the solution, which is the outcome of the change. The assessment looks at cultural readiness and operational readiness, the timeline for implementing the change, and the resources available to support the change effort.

Change Strategy In a nutshell, the change strategy is a high-level plan of key activities for transitioning the enterprise from its current state to the desired future state. This strategy looks at multiple options for achieving the change and recommends which of these options are actually feasible courses of action.

A preferred change strategy is selected from the feasible options and developed in greater detail. Many times, a business case is built for the feasible options to help with decision making. Selection criteria for choosing the preferred change strategy include the following:

- Organizational readiness
- Major costs and investments
- Timelines for making the change
- Alignment to business objectives
- Timelines for value realization
- Opportunity costs

There are pros and cons to the different change strategy options that are being considered. Opportunity costs quantify the benefits that could have been achieved if you selected a different change strategy.

Transition States and Release Planning When planning an implementation, try to minimize the impacts to business activities. The desired future state may be achieved in one big jump or in several smaller hops or *transition states*. Release planning determines which requirements are included in each stage, phase, or iteration of a change. Releases may be defined based upon budgets, time constraints, resource constraints, or the ability of the business to absorb change.

There are a number of techniques that you can use to define your project's change strategy and solution scope. A great way to begin this task is by building a balanced scorecard. Let's take a look at this recommended technique in greater detail.

Recommended Technique: Balanced Scorecard

Value creation needs to be understood, measured, and optimized in order to create sustainable performance. A balanced scorecard measures organizational performance by focusing on outcomes. This technique takes an organization's vision and strategic plan to build a framework of tangible objectives, specific measures, and targeted outcomes. This technique can be used for short, medium, and long-term goals. The balanced scorecard has these four dimensions:

- Learning and growth
- Business process
- Customer
- Financial

The learning and growth dimension looks at employee training and learning, product and service innovation, and corporate culture. In contrast, business process dimension focuses on how well the business is operating and meeting their customer needs. The customer dimension measures customer focus, satisfaction, and delivery of value. The financial dimension includes profitability, revenue growth, and economic value.



NOTE Good metrics address both precision and accuracy. Precision focuses on the consistency of measurements and targets repeated measurements that yield the same value. Accuracy looks at how close the true value is to the measured value. Closer values indicate higher reliability and less uncertainty.

Other Techniques to Consider

The *BABOK® Guide* lists some additional techniques that can be used when defining the change strategy and solution scope for a project. They are summarized for you here:

Benchmarking and Market Analysis This technique compares organizational practices against best-in-class practices and is most often used when business analysts and key stakeholders are deciding which change strategy is preferred.

Brainstorming Brainstorming allows a group of stakeholders to collaboratively generate ideas for change strategies.

Business Capability Analysis Business capability analysis is a way to prioritize the capability gaps in relation to value and risk between the current state and the desired future state of things.

Business Cases Business cases can be used to capture information about the recommended change strategy and other potential strategies that were assessed and considered but were not recommended.

Business Model Canvas Business analysts can use this nine-box template to define the changes needed in the current infrastructure, customer base, and financial structure of the organization in order to achieve the potential value of making a change.

Decision Analysis Decision analysis techniques compare the different change strategies in order to choose which change strategy is most appropriate in a given situation.

Estimation Estimating techniques can be used to determine the timelines for activities within the preferred change strategy.

Financial Analysis Financial analysis helps people understand the potential value associated with a specific change strategy. This technique can also be used to evaluate strategies against targets set for return on investments.

Focus Groups Focus groups bring customers or end users together to get their input on the solution scope and change strategy.

Functional Decomposition Functional decomposition allows you to systematically break down the solution scope components into smaller pieces when developing the change strategy.

Interviews This technique involves talking to stakeholders, getting them to fully describe the solution scope and change scope, as well as sharing their ideas on the change strategy.

Lessons Learned Remember to use lessons learned so you know what went wrong with past changes and can do things better this time.

Mind Mapping Mind mapping is a visual, nonlinear diagramming technique for a group of key stakeholders to develop and explore ideas for change strategies.

Organizational Modelling Use this technique to describe roles, responsibilities, and reporting structures that are part of the solution scope and are needed during the change.

Process Modelling Process modelling describes how work would occur in the solution scope or during the change transitions.

Scope Modelling Scope modelling assists the business analyst in determining what is in scope and what is out of scope for the solution and for the change that is being made.

SWOT Analysis SWOT analysis lets you compare the costs and benefits of implementing a potential solution or change strategy. As previously discussed, there are two dimensions to this analysis: the internal strengths and weaknesses

of the organization and the external opportunities and negative impacts that are in play. The business analyst is seeking to maximize strengths and minimize weaknesses.

Vendor Assessment When goods or services may be purchased from a third party as all or part of a proposed solution or change strategy, an assessment of that vendor should be included as part of the change strategy.

Workshops Workshops are used for groups of stakeholders to collaboratively develop change strategies with stakeholders.

Let's take a look at the outputs that result from applying one or more of these techniques to defining solution scope and developing a change strategy.

Building the Change Strategy

The change strategy is the approach that the organization will follow to guide a change in the way things are being done. The solution scope is achieved through execution of the change strategy. The solution scope describes what must be delivered to meet a business need. This includes any effects the solution might have on the business and technology operations and infrastructure of the organization. Solution scope can change throughout the project, based on changes to the business environment or project scope over time.

Once the solution scope is defined and the change strategy is selected, they are used as inputs to numerous business analysis tasks ([Table 3.10](#)).

TABLE 3.10 Outputs: Define change strategy.

Task Output	Output Destinations	Source Knowledge Area
Change strategy	Plan stakeholder engagement.	Business Analysis Planning and Monitoring
	Prioritize requirements.	Requirements Life Cycle Management
	Assess requirements changes.	Requirements Life Cycle Management
	Approve requirements.	Requirements Life Cycle Management
	Assess risks.	Strategy Analysis
	Define design options.	Requirements Analysis and Design Definition
	Measure solution performance.	Solution Evaluation
	Analyze performance measures.	Solution Evaluation
	Assess solution limitations.	Solution Evaluation
	Assess enterprise limitations.	Solution Evaluation
Solution	Prioritize requirements.	Requirements Life Cycle

scope		Management
	Assess requirements changes.	Requirements Life Cycle Management
	Approve requirements.	Requirements Life Cycle Management
	Specify and model requirements.	Requirements Analysis and Design Definition
	Validate requirements.	Requirements Analysis and Design Definition
	Define requirements architecture.	Requirements Analysis and Design Definition
	Define design options.	Requirements Analysis and Design Definition
	Analyze potential value and recommend solution.	Requirements Analysis and Design Definition
	Measure solution performance.	Solution Evaluation
	Analyze performance measures.	Solution Evaluation
	Assess solution limitations.	Solution Evaluation
	Assess enterprise limitations.	Solution Evaluation
	Recommend actions to increase solution value.	Solution Evaluation

The business analyst and project manager are jointly responsible for managing change and planning activities to complete a change. The project manager owns the *project scope*, which is the work necessary to deliver the solution scope. Detailed release planning and component allocation activities must integrate into the project plan that drives getting the change and its resulting solution defined in more detail, designed, and deployed. The implementation SME may also be of assistance in allocating capabilities to solution components. After the task is complete, the sponsor will approve the solution scope.

Numerous other stakeholders may be involved in defining the change strategy and solution scope. They include the following:

- Customer
- Domain SME
- End user
- Operational support
- Regulator
- Supplier
- Tester



Real World Scenario

Business Case: Hiking Your Way

Early in her career as a management consultant, Ginger discovered that, during business case development, not all change strategy development efforts run smoothly. She was sent on an assignment to a major company to help the CIO define the business requirements for a new claims processing system. Her business requirements and business case would be presented to the CEO for approval. Then, a very challenging (and costly) development effort would begin.

What Ginger didn't know was the current state of affairs within the executive management team regarding this proposed solution. She got an idea that things weren't quite right when the business analysis team drew straws for who got to interview the CEO about this proposed new system. Ginger got the short straw and scheduled her interview for later that afternoon.

When she walked into the CEO's office, he was very pleasant. After offering her a cup of tea, he told her to go ahead and ask her questions. His response to the first question about the strategic business priorities of the organization was right on target. However, it was when she asked her second question that things got truly entertaining.

“How will the organization measure the success of this project?”

The CEO told Ginger not to concern herself with the success of the project because it was never going to get off the ground. He then went on to talk about the very limited career that the CIO, who was also the project sponsor, would be having with this company. Before Ginger could make any reply to this outburst, the CEO asked her to leave because the interview was over. When she got up to walk out of his office, he motioned with his hand toward the far corner of the room.

“Go out that way,” he said.

So she did. As she put her hand on the door handle, Ginger found herself wondering what was on the other side of the unknown door. Shark tank? Broom closet? Bottomless pit? She opened the door and stepped out into the executive parking lot at the back of the building. Unfortunately, getting back to the front door of the building required a long hike through the cactus and scrub. When Ginger arrived at the front desk, the security guard looked at her and her tattered stockings and smiled sweetly.

“Lucky you,” he said. “I see he threw you out of his office. You know, you're the first one today. But I bet you won't be the last.”

The guard then presented her with a piece of candy.

Needless to say, the change strategy and the business case containing that

strategy were not approved for this particular project. For her next business requirements assignment, Ginger decided to wear trousers on the first day—just in case.

How This Applies to Your Projects

In this chapter, you stepped through defining the business requirements, current state, future state, change strategy, and solution scope for a project and using this data to seek the sponsor's approval to get that project underway. Performing business analysis usually starts up at 30,000 feet on most projects. Working on complex projects in which the initial feasibility studies and business case development work are a project themselves can be enjoyable. It is always fun to figure out the scope of what needs to be done and to justify why an organization needs to do it. Understanding and defining the big picture is an important piece of a project's controlled start, and every business analyst should be able to perform this work well.

It should be no surprise that projects are successful when what is to be accomplished is clearly stated and agreed upon. The strategy analysis tasks and their resulting outputs set the framework for the subsequent requirements development activities. The change strategy and solution scope are defined by negotiation between key business and management level stakeholders. Solution scope definition restricts the detailed requirements development downstream and allows for informed decision making and prioritization throughout the project life cycle.

Many different project documents can be used to define the scope of a business problem or need and justify why an organization should do something about it. Here is a short list of possible candidates:

- Business case
- Business requirements document (BRD)
- Project brief
- Feasibility study
- Opportunity assessment
- Project charter
- Operational concept description (OCD)
- Scope definition document (SDD)

No matter which document template you use or what name you give that document, it should contain most, if not all, of the information that the business analyst builds and collects as part of their Strategy Analysis tasks. This includes the business need, the justification and rationale for proceeding with the effort, key stakeholders involved with these business-focused efforts, any business constraints, and an initial risk assessment.

Business Requirements Document Outline

Here is a business requirements document template I frequently use. Typically, I modify it for each organization where it is being applied, based on their preferences. It is adapted from the IEEE's Concept of Operations (ConOps) document that is part of their software engineering standards.

Executive Summary

1.0 Introduction and Overview

1.1 Background

1.2 Description of Current Situation

1.3 Concepts for Proposed System

2.0 Scope of Proposed Efforts

2.1 Statement of Problem or Need

2.2 Business Areas and Goals

2.3 Business Requirements

2.4 Involved Stakeholder Organizations

2.5 Constraints

3.0 Analysis and Recommendations

3.1 Justification and Rationale

3.2 Summary of Improvements

3.3 Disadvantages and Limitations

3.4 Impacts and Risks

4.0 Referenced Documents

5.0 Signature Page

Appendix: Glossary of Terms

Appendix: Acronyms

Most organizations have their own templates, examples, and specific requirements for writing a business case, scope definition, and/or business requirements document. Be sure to check with your project manager to see what is commonly used or required for your projects when you are defining the big picture. Often, document templates provide a valuable road map for what information you will need to gather and analyze during your Strategy Analysis work.

Summary

The four tasks of the Strategy Analysis knowledge area focus on defining the business requirements for the project and justifying why that project should be performed. The business requirements are the framework for what capabilities a solution will deliver in order to meet a business need. The resulting business benefits and value from implementing a particular solution will be defined, and the means to measure them will be established. A change strategy will also be defined to help the organization achieve and adopt the changes that are necessary.

In the *BABOK® Guide*, the set of Strategy Analysis task deliverables includes the business requirements, the business objectives, the potential value of the change, the current state description, the future state description, the solution scope, and the change strategy. The tasks in this knowledge area are focused on defining and getting approval for the big picture of what capabilities and benefits a proposed new solution will provide to the organization.

The Strategy Analysis tasks address the most strategic part of business analysis work. Often, these tasks take place before an actual project is planned or even approved. Many organizations assess and evaluate the feasibility and value of possible solutions to their problems and then select the most important projects to be done. The remaining projects get to sit on the back burner and wait for an opportunity to be initiated and done.

Business analysts focus on the strategic priorities, business goals, and business objectives of their organizations when working at a more strategic level early on in the project. They have to define and understand the business need and determine the desired outcomes the organization would like to see to meet that need. This work requires interacting with senior management to determine what the problem or opportunity is and what they think might be done to correct it. The underlying competencies of effective communication and interaction are essential for success at this early point in or before the more detailed project work begins.

During strategy analysis, a business analyst looks at ways to go about implementing a solution that solves the problem and meets the identified business need. The selected solution depends a great deal on the nature of the problem and the preferences of the organization. Some organizations might decide to outsource services to implement a solution. Other organizations may prefer to build their own software applications and to provide those services themselves.

Business analysts work closely with the project manager in order to get the solution scope definition in place. While the business analyst is focusing on defining the solution scope, the project manager is working in tandem with them, focused on the project scope. Remember, the project scope defines the work needed to deliver a product, service, or result, with the specified features and functions. By comparison, the solution scope defines the set of capabilities a

solution must deliver in order to meet a business need.

Risk management also kicks in as part of the Strategy Analysis tasks. The business analyst must analyze the technical, financial, and business risks related to the overall solution feasibility. In many organizations, a business case is the “authorization to proceed” document. It justifies why the organization should invest in the implementation of a solution. Once the business case is approved, the project itself can get merrily underway.

Exam Essentials

Be able to list the tasks found in the Strategy Analysis knowledge area. On your exam, you will see questions about the tasks, their associated techniques, their more detailed elements, and the key outputs that they produce. You should memorize the four tasks of this knowledge area and any key outputs or techniques associated with them. The tasks are as follows:

- Analyze current state.
- Define future state.
- Assess risks.
- Define change strategy.

Be able to state the purpose of key deliverables. The key deliverables produced by the tasks in this knowledge area are not always easy to remember because they do not always align with the task names. Many tasks produce more than one deliverable. Here's the list:

- Business requirements
- Business objectives
- Current state description
- Future state description
- Solution scope
- Change strategy
- Potential value

Be able to distinguish between project, product, and solution scope.

Project scope defines the work needed to deliver a product, service, or result with the specified features and functions. Product scope includes the features and functions characterizing the product, service, or result. Solution scope is the set of capabilities a solution must deliver in order to meet the business need.

Be able to explain the techniques used to define the big picture.

Performing the Strategy Analysis tasks to ultimately build the business requirements uses many business analysis techniques. Spend some time getting familiar with these techniques and when they might be applied during Strategy Analysis.

Key Terms

This chapter stepped through the contents of the second knowledge area from the *BABOK® Guide*: Strategy Analysis. Most of this knowledge area focuses on defining the big picture that the business analysis team will use to frame subsequent work activities across the project life cycle.

You should understand how to apply the techniques and tasks in this knowledge area in order to be an effective business analyst. Additionally, you will need to know the four tasks and their associated elements and techniques from this knowledge area in order to be successful on the CBAP® or CCBA™ exams. The tasks include the following:

- Analyze current state.
- Define future state.
- Assess risks.
- Define change strategy.

A number of new key words in Chapter 3 relate to defining the strategic view of a project. Here is a list of some of the key terms that you encountered in this chapter:

business need
business objectives
business requirements
capability-centric view
change strategy
constraints
dependencies
enterprise readiness
fishbone diagram
five whys
gap analysis
mission
organizational culture
potential value
process-centric view
project charter
project scope
risks

root case analysis

SMART (Specific, Measurable, Achievable, Relevant, and Time-Bound)
solution scope

SWOT analysis

transition states

values

vision

Review Questions

1. What governs the performance of all Strategy Analysis tasks?
 - A. Enterprise analysis plan
 - B. Business analysis approach
 - C. Project management plan
 - D. Governance approach
2. Which Strategy Analysis task produces the solution scope as an output?
 - A. Define future state.
 - B. Define change strategy.
 - C. Analyze current state.
 - D. Define solution scope.
3. Strategy Analysis tasks focus on documenting what type of requirement?
 - A. Stakeholder
 - B. Solution
 - C. Transition
 - D. Business
4. What term describes the outcome of a change that allows an enterprise to satisfy a need?
 - A. Solution
 - B. Opportunity
 - C. Benefit
 - D. Capability
5. What defines the business problem for which the business analyst is seeking a solution?
 - A. Business case
 - B. Business objectives
 - C. Business goals
 - D. Business need
6. Industry structure might present constraints, dependencies, or drivers on the current state of the enterprise. This area is a source of _____ influencers found when analyzing the current state.
 - A. Internal
 - B. Competing

- C. External
 - D. Business
7. What output contains the results of the business analyst assessing the capability gaps between existing and new capabilities of the organization?
- A. Business case
 - B. Change strategy
 - C. Solution scope
 - D. Business requirements
8. When assessing risks during Strategy Analysis, the business analyst should consider all of the following elements *except*:
- A. Unknowns
 - B. Proximity
 - C. Constraints
 - D. Dependencies
9. What four dimensions are addressed in a balanced scorecard?
- A. Learning and growth, transition states, customer, supplier
 - B. External business process, internal business process, customer, financial
 - C. Gap analysis, change strategy, solution scope, business requirements
 - D. Learning and growth, business process, customer, financial
10. When building a change strategy, decision analysis can be used to compare the _____ of implementing a proposed solution against the _____ to be gained.
- A. Benefits; costs
 - B. Risks; benefits
 - C. Costs; benefits
 - D. Risks; costs
11. When analyzing the current state, the business analyst looks at the scope of decision making at different levels in the organization. What element of the current state are they looking at?
- A. Internal assets
 - B. Business architecture
 - C. Policies
 - D. External influencers
12. Who typically approves the change strategy and solution scope and authorizes funding for the resulting project?
- A. End user

- B. Sponsor
 - C. Domain SME
 - D. Customer
3. Which business analysis technique allows the business analyst to leverage existing materials to analyze the current state of the enterprise relative to a business need?
- A. Process modelling
 - B. Document analysis
 - C. State diagrams
 - D. SWOT analysis
4. The business analysis team has analyzed the current state and defined the desired future state of the enterprise. What is the team's most likely next step?
- A. Performing a gap analysis
 - B. Assessing risks
 - C. Defining the change strategy
 - D. Engaging stakeholders
5. What deliverable contains the preliminary analysis of solution alternatives or options to determine how and whether each option can provide an expected business benefit?
- A. Change strategy
 - B. Business need
 - C. Strategic analysis
 - D. Feasibility study
6. What describes the specific end results an organization is seeking to achieve and the measures to objectively assess if these end results have been achieved?
- A. Business case
 - B. Business objectives
 - C. Business goals
 - D. Business need
7. The business analyst is looking at the current state of an existing system and trying to figure out how to improve the efficiency of that system. What level of the enterprise is the business need being defined from?
- A. From the top-down
 - B. From the bottom-up
 - C. From middle management

- D. From external drivers
- 8. When defining solution scope, which stakeholder role participates in allocating new capabilities to solution components and determining what is required to deliver those capabilities?
 - A. Business analyst
 - B. Domain SME
 - C. Project manager
 - D. Implementation SME
- 9. During Strategy Analysis, which technique allows the business analyst to break down business goals into achievable objectives and measures?
 - A. Root-cause analysis
 - B. Business rules analysis
 - C. Functional decomposition
 - D. Organization modelling
- 10. What has been defined when all of the Strategy Analysis knowledge area tasks are complete?
 - A. Solution scope and change strategy
 - B. Business requirements and solution approach
 - C. Solution scope and solution approach
 - D. Business case and required capabilities

Chapter 4

Overarching Tasks: Requirements Life Cycle Management

CBAP®/CCBA™ EXAM TOPICS COVERED IN THIS CHAPTER:

- ✓ **Tracing requirements and designs**
- ✓ **Maintaining requirements for reuse**
- ✓ **Prioritizing requirements**
- ✓ **Assessing requirements changes**
- ✓ **Approving requirements**



It isn't enough to just plan the business analysis activities and get the work done. Managing and maintaining information about the requirements being developed across the project life cycle is the responsibility of the business analyst (that means you). If you can't manage the requirements from inception to retirement, how will you know whether those requirements are implemented in the solution?

The overarching set of requirements life cycle management tasks is found in the Requirements Life Cycle Management knowledge area. The tasks in this knowledge area focus on ensuring that the right people are involved with developing, understanding, and approving the business, stakeholder, and solution requirements, as well as the designs. In addition, the requirements themselves must be accessible and managed during the requirements development work and throughout the project life cycle.

Requirements Life Cycle Management

The Requirements Life Cycle Management knowledge area targets managing and sharing the project requirements and designs with the project stakeholders. This knowledge area is also where the business analysis team deals with the challenges of managing changing requirements and designs across the project life cycle and ensuring that the solution implements them. Remember, for the business analyst, requirements are focused on the need, while designs are focused on the solution. Requirements and designs can change while they are being developed and after they have been approved and baselined.

To focus on what is important to the business analyst across the life cycle of their business analysis efforts, let's consider the tasks of this knowledge area with the framework of the BAACM™. Business analysts need to keep an eye on their work relative to the six concepts contained in the framework: changes, needs, solutions, stakeholders, values, and contexts. [Table 4.1](#) describes these responsibilities.

TABLE 4.1 The BACCM™: Requirements Life Cycle Management

Core Concept	The Business Analyst's Responsibilities
Change	Manage and evaluate proposed changes to requirements and designs across the life cycle.
Needs	Ensure the business need is met by tracing, prioritizing, and maintaining the requirements.
Solution	Make sure the solution meets the business need by tracing requirements and designs to solution components.
Stakeholders	Work with key stakeholders to understand, agree upon, and approve requirements and designs.
Value	Extend value beyond the current initiative by maintaining requirements for reuse.
Context	Analyze the context of the existing enterprise to support tracing and prioritizing requirements and designs.

Change is an interesting beast. Remember when your mother told you that hindsight is always 20/20? Well, your mother was right. Business analysts are experts at recognizing changing circumstances as the project life cycle moves forward. They recognize that their level of knowledge about the solution and its implementation improves over time. However, their ability to respond quickly and easily to changes in the requirements decreases as the project's delivery date draws near. Managing changing requirements is an integral part of what business analysts do. [Figure 4.1](#) illustrates this strange and wonderful relationship between what business analysts know about projects and how quickly and easily they can respond to changes over time.

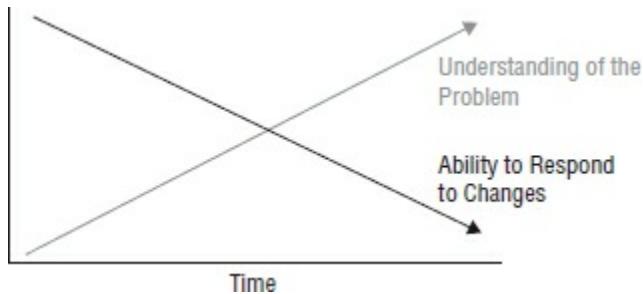


FIGURE 4.1 Responding to changing requirements

The tasks in this knowledge area consist primarily of actions taken for a project's business, stakeholder, or solution requirements and designs. These tasks provide the business analysis team and the project with requirements-related outputs that are then used in various ways downstream. The Requirements Life Cycle Management knowledge area is addressed in Chapter 5 of the *BABOK® Guide*.

Business, Stakeholder, and Solution Requirements

Let's remind ourselves what these three types of requirements are and how they relate to one another as part of your detailed requirements development efforts. Remember that tasks in the Requirements Life Cycle Management knowledge area do not typically focus on the fourth type of requirements, which are the transition requirements.

Business Requirements Business requirements are defined early in the project, representing the high-level goals, objectives, and outcomes for the project. Business requirements justify the reasons for making a change in the enterprise and define how success will be measured once that change has been implemented. Typically, these high-level, “big-picture” requirements are defined by tasks found in the Strategy Analysis knowledge area.

Stakeholder Requirements Stakeholder requirements are the bridge between the business requirements and the more detailed solution requirements to define the needs of stakeholders and how they will interact with a solution. They are developed and defined as part of the Requirements Analysis and Design Definition knowledge area. Like the business requirements that preceded them, the stakeholder requirements will be progressively elaborated into the more detailed solution requirements.

Solution Requirements Solution requirements are the most detailed type of requirements that describe the solution characteristics needed to meet the higher-level business and stakeholder requirements. Typically, solution requirements are subdivided into two specific types: functional requirements and nonfunctional requirements. Solution requirements are developed and defined as part of the tasks found in the Requirements Analysis and Design Definition knowledge area.

The Requirements Life Cycle Management knowledge area also addresses monitoring the effects of changing project requirements across the project life cycle. The business analysis team assesses the effectiveness of the actual solution relative to the organization's business goals and objectives. This ensures that the project's business analysis tracks its organizational alignment and understanding, making it available for use on future projects. How is this accomplished? Let's take a look at the five tasks involved.

The Business Analyst's Task List

The business analyst has five tasks to perform in the Requirements Life Cycle Management knowledge area. We will look at each of these tasks in greater detail later in this chapter. The task list from the *BABOK® Guide* includes the following:

- Managing requirements traceability
- Maintaining requirements and designs for *reuse*
- Prioritizing the requirements and designs
- Assessing requirements changes
- Approving and agreeing on requirements and designs

These tasks focus on making sure that the project stakeholders have a common and consistent understanding of the requirements, designs, and solution that the requirements are defining. The business analyst is also responsible for managing the requirements as they change across the project life cycle. We will step through each of these tasks in greater detail later in this chapter.

When Does Requirements Life Cycle Management Take Place?

To effectively communicate, we must realize that we are all different in the way we perceive the world and use this understanding as a guide to our communication with others.

—Anthony Robbins, Motivational speaker, self-help author

The tasks in the Requirements Life Cycle Management knowledge area begin as soon as requirements development work begins for a project. They accompany the work being done in any knowledge area that develops requirements, including Strategy Analysis, Requirements Analysis, Design Definition, and Solution Evaluation. Effective business analysts make sure that their requirements-related communication activities take place across the project life cycle.



In the Requirements Life Cycle Management knowledge area, the life cycle is not meant to be a methodology or process for business analysis

work. The “life cycle” refers to the phases, states, or stages that the requirements and designs may pass through during their development or when they are changing in some way.

The requirements life cycle in this knowledge area works like this:

- Begins with the representation of a business need as a requirement
- Continues through the development of a solution
- Ends when the requirements and the resulting solution are retired

Several key business analysis deliverables influence and guide managing the requirements under development on a project. These approaches were created as part of the Business Analysis Planning and Monitoring knowledge area. They include the following:

- Change strategy
- Governance approach
- Information management approach

The tasks in the Requirements Life Cycle Management knowledge area rely on the contents of these approaches that define how you make decisions about proposed changes, implement traceability, and store requirements and designs information as you develop your project requirements. With that in mind, let’s step through the first task in the Requirements Life Cycle Management knowledge area: tracing requirements.

Exam Spotlight

Approximately 27 of your 150 CBAP® exam questions focus specifically on Requirements Life Cycle Management. On the CCBA™ exam, expect to see about 23 questions about this knowledge area. The questions target specific aspects of the five tasks found in this knowledge area. Be sure you know them well.

Trace Requirements

Requirements traceability provides the business analyst with the ability to identify and document the lineage of each requirement and design. A *requirement's lineage* includes its relationship to other project requirements, to work products, and to the solution components. When business analysts say that they can trace a requirement or design, they are telling you that they can look at that specific requirement or design and all other requirements and designs to which it is related.

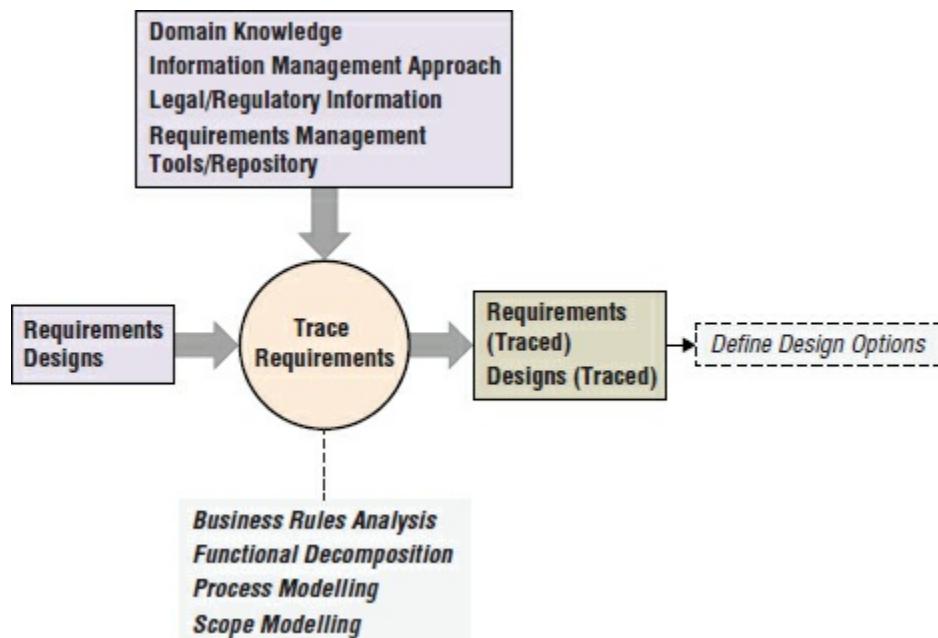
Requirements traceability begins with each project’s business needs. The business needs are used to determine the business requirements. In turn, the

business requirements are decomposed into the more detailed stakeholder requirements level. Stakeholder requirements get broken down once more into the detailed solution requirements that transition the project team from requirements definition to solution design and development. All of the requirements that make up a project's solution scope should trace back to one or more business needs for that project.

Is It Real or Gold Plating?

Remember that all project requirements must be linked back to a business need. Otherwise, a requirement is not necessary to meet the business need and deliver the solution scope. Extra requirements that are not necessary to deliver the solution scope are often referred to as *gold plating*.

[Figure 4.2](#) summarizes the inputs, outputs, guidelines, tools techniques, and associated tasks for tracing requirements on a project.



[FIGURE 4.2](#) Task summary: Trace requirements.

Inputs either are informational in nature or can be outputs produced by other business analysis tasks. Inputs are acted on by the task elements and techniques, producing one or more task outputs. These are the task inputs used when tracing requirements:

Requirements All requirements can be traced to other requirements on a project. According to the *BABOK® Guide*, “other requirements” include goals, objectives, business requirements, stakeholder requirements, solution requirements, and transition requirements. All solution and stakeholder requirements must be traceable to a business requirement. Requirements may also have traceability relationships with solution components, business rules,

and other work products.

Designs Designs are usable representations of solutions. They can be traced to all types of requirements, to solution components, and to other work products.

There are additional inputs that can be used by business analysis tasks: guidelines and tools. Guidelines are essentially instructions or descriptions of why and how a business analyst will undertake a task. Tools, on the other hand, are methods for conducting a business analysis task or shaping a task output. These are the guidelines and tools that can also be used as inputs when tracing requirements:

Domain Knowledge Tracing requirements leverages business knowledge and expertise from stakeholders in the business domain being addressed. This knowledge enables business analysts to put together the pieces of the traceability puzzle correctly.

Information Management Approach The business analysis team's traceability decisions should be based on the information management approach. This approach addresses and defines requirements traceability before any actual requirements development has begun.

Legal/Regulatory Information Sometimes the business analyst must incorporate legislative or regulatory rules into their project's traceability approach.

Requirements Management Tools/Repository The tools and storage for requirements and requirement traceability must be in place prior to commencing requirements development. Based upon the complexity of the project and the degree of traceability formality, these tools can range from simple spreadsheets to complex requirements management tools.

[Table 4.2](#) summarizes the inputs, guidelines, and tools for this task and lists the source of the input (if applicable).

TABLE 4.2 Inputs: Trace requirements.

Task Input	Input Type	Input Source	Source Knowledge Area
Requirements	Input		
Designs	Input		
Domain knowledge	Guidelines and tools		
Information management approach	Guidelines and tools	Plan business analysis information management.	Business Analysis Planning and Monitoring
Legal/regulatory information	Guidelines and tools		
Requirements management tools/repository	Guidelines and tools		

Business analysts need to step through three essential elements to create and manage requirements traceability for their projects. These elements are:

- Deciding the level of formality
- Selecting the relationships to be traced
- Documenting and maintaining the traced requirements

Let's step through each of these three elements now.

Deciding the Level of Formality The challenge for business analysts and project teams is deciding what requirements and designs need to be traced and what can be skipped. Traceability can be built and maintained at many levels within a given set of project requirements. Traceability usually begins with tracing the current requirements under development to the higher-level requirements from which they are being derived. For example, when business analysts build the solution requirements for a project, the first aspect of traceability that they address is derivation from the stakeholder requirements that preceded the solution requirements.

The business analyst needs to decide the project's approach to traceability before the requirements development work actually begins. It is important to decide the level of traceability and the types of relationships to be traced ahead of time. That allows the business analysis team to do this work concurrently with developing the requirements.

Factors to Consider When Planning for Traceability

How do you decide whether a spreadsheet is good enough for tracking requirements traceability? It really depends on how complicated you think your requirements traceability will be. You should think about the following factors as part of your decision-making process:

Number of Requirements Generally, complex projects have more requirements, which generate a greater need for a traceability tool. In complex systems, business analysts must strive to limit the traceability information that is maintained to a usable and reasonable set of data. The more requirements you have, the more relationships there tend to be between those requirements. This may make maintaining traceability in a spreadsheet difficult and point you toward a more sophisticated requirements management tool that uses a database to relate the requirements to one another.

Estimated System Lifetime The longer a system or solution will be used within an organization, the greater the need for traceability using either a tool or a spreadsheet. This will assist the team in evaluating the impacts of changes to the operational solution. You also need to consider whether the system is critical or noncritical to daily operations.

Level of Organizational Maturity Traceability tools are easier to

acquire and use when your requirements development and project management processes are mature. Acquiring a new requirements management tool at the beginning of a major requirements development effort is bad timing. It will be difficult for the business analysis team to learn to use the new tool and to do their requirements development work simultaneously.

Selecting Relationships to Trace Key dependencies and relationships between requirements should be recorded so they can be traced across the project life cycle. Creating and maintaining this information assists the business analyst in sequencing project work activities to design and deploy the capabilities found in the requirements. It also assists the business analyst in correctly allocating requirements to solution components. The following are types of relationships to consider:

Derive. *Derivation* is the backward traceability of a requirement to its higher-level parent. An example of derivation is when a solution requirement is derived from a business or stakeholder requirement.

Depends. A *dependency* relationship exists between two requirements when the requirements depend upon one another in some way. There are two types of dependency: necessity and effort. Necessity is when it makes sense to implement one requirement only when another requirement is also implemented. Effort is when a requirement is easier to implement when a related requirement is also implemented.

Satisfy. The *satisfy* relationship exists between a requirement and a solution component. Essentially, the solution component satisfies the associated requirement.

Validate. This relationship exists between a requirement and the test case or other method that validates or proves the solution fulfills the requirement.



Real World Scenario

Palmer Divide Vineyards: Concerns Over Elapsed Study Time

You are a team member at Palmer Divide Vineyards, currently defining the IT requirements for a new green initiative. You have been assigned the task of tracing the requirements in a particular requirements package. During your review of the set forward and backward traceability matrices, you notice the following stakeholder requirements:

SH1: Users will perform research studies.

SH2: Users will customize the contents of their research studies.

The children of these stakeholder requirements are the more detailed solution requirements, which are traced back to their parents.

SH1 traces forward to one solution requirement:

S1: The system will calculate elapsed study time.

SH2 traces forward to two solution requirements:

S2: The system will allow creation of custom data queries.

S3: The system will accept customized user study data.

While you are looking at requirement S1, you find yourself wondering if the elapsed study time will be calculated for all studies, both standard and customized. The traceability matrix led you to this question, and you make a note to clarify it with the involved stakeholders at your earliest opportunity. Clarifying this concern during requirements development could save the project team the rework costs downstream if this requirement is interpreted incorrectly in the solution design and implementation.

Traceability Repository Traceability is usually achieved by putting the requirements in a table, spreadsheet, or tool to manage the tracing activities. Although traceability can be done manually using a spreadsheet, complex projects often require a more streamlined approach. Many business analysts prefer to use a requirements management tool or a configuration management system to trace large numbers of requirements.

Implementing traceability for project requirements demands work from the business analysis team, but it's worth the effort. Traceability is used for many things on a project. For example, traceability allows the business analyst to thoroughly evaluate the impacts of a change request to both the requirements and the solution components. In another example, tracing requirements back to the business needs shows the business analyst how those objectives will be accomplished. This also allows the business analyst to confirm that all the business needs are included in the solution scope and the solution components. In one last example, traceability allows the business analyst to trace the subset of requirements that are allocated to each of the solution components.

Techniques to Consider

The *BABOK® Guide* lists some additional techniques that can be used when tracing requirements. They are summarized for you here:

Business Rules Analysis This technique can be used to trace business rules to the requirements that the business rules support. The technique also works in a different direction, tracing business rules that support requirements.

Functional Decomposition Break down solution scope into smaller components for requirements allocation. Requirements allocation assigns requirements to be implemented by a specific solution component or components. Functional decomposition is also used to trace high-level components to lower-level components.

Process Modelling Process models visually show the future state process. These models allow the business analyst to trace requirements to that future

state process.

Scope Modelling Scope models visually depict the scope and allow the business analyst to trace requirements to the area of the scope that the requirement supports.

Business analysts select which techniques they will apply as part of tracing requirements. There is no need to use all of these techniques, so choose wisely. Let's take a look at the outputs result from applying your selected techniques to this task.

Produce the Traced Requirements

Traced requirements have clearly defined relationships to the other requirements and designs within the solution scope. Traceable requirements are used by the business analyst to identify the effects on other requirements of a requirements change or of a planned implementation.

Once the relevant stakeholders approve the requirements or designs, they are used as inputs to another task in the Requirements Life Cycle Management knowledge area, defining the design options. [Table 4.3](#) summarizes these outputs.

TABLE 4.3 Outputs: Trace requirements.

Output	Output Destinations	Destination Knowledge Area
Requirements (traced)	Define design options.	Requirements Analysis and Design Definition
Designs (traced)	Define design options.	Requirements Analysis and Design Definition

Business analysts have the primary responsibility for creating and managing requirements traceability for their projects, particularly during requirements development activities. The project managers are also part of this effort, as they use traceable requirements to support the project-level change management activities. Several business analysis stakeholders also have a need for traceable requirements, including the following:

- Customers
- Domain subject matter experts (SMEs)
- End users
- Implementation SMEs
- Operational support
- Sponsor
- Suppliers
- Testers

Producing the traced requirements is an interim and necessary step in creating the approved requirements for a project. Traced requirements are strongly recommended as an accompaniment to the approved requirements for your project. Let's take a look at another aspect of producing project requirements: maintaining requirements for reuse on future projects and initiatives.

Maintain Requirements

Requirements can and will change on your projects, even while the requirements are being developed. Maintaining requirements focuses on the current requirements for your project, as well as possibly reusing some of those requirements on other projects and initiatives downstream. Requirements are maintained so they stay current and correct across the project life cycle, particularly after an approved change.

Some requirements developed for a particular project might also be candidates for long-term use or reuse by the organization. The requirements that you choose to maintain might relate to infrastructure, hardware, software, or operational capabilities that the organization must meet on an ongoing basis versus just for your particular project.

Requirements that can be reused on other projects must be named, defined, and easily available to other business analysts in the organization. These requirements are stored and managed in a requirements repository. Some organizations save and maintain all ongoing, operational requirements to assist support and maintenance teams in evaluating possible impacts of changes to the deployed solutions and systems.

[Figure 4.3](#) summarizes the inputs, outputs, techniques, and associated tasks for maintaining requirements.

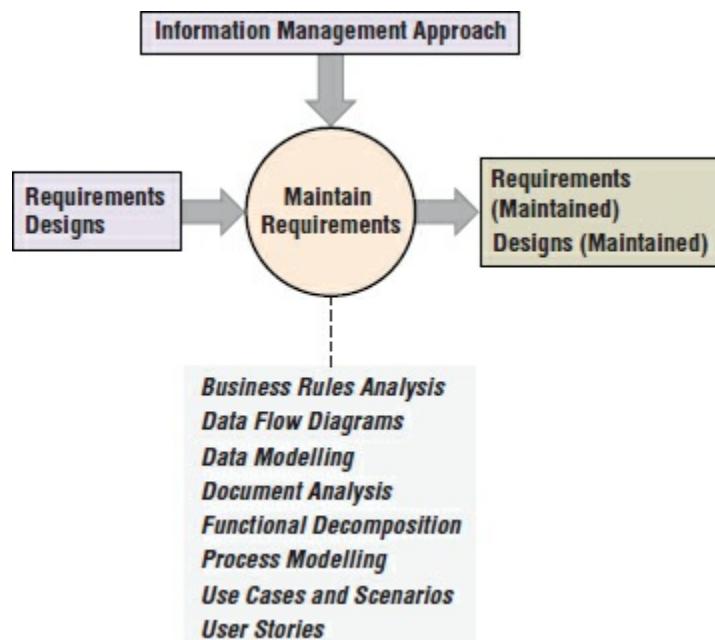


FIGURE 4.3 Task summary: Maintain requirements.

Several inputs are needed to maintain reusable requirements and designs while

a project is ongoing and after that project is complete. These key inputs are produced by other business analysis tasks and include the requirements themselves. Here is a closer look at these inputs:

Requirements Requirements that are maintained for reuse typically describe the current state of an organization and the systems and solutions that are being used to address a business need.

Designs Designs that are maintained for reuse also describe the current systems and solutions that are being used. They can be maintained across their life cycle.

Let's also take a look at the guidelines and tools that may be used as inputs to the maintaining requirements task:

Information Management Approach The business analyst's approach for managing requirements reuse is defined as part of the information management approach during Business Analysis Planning and Monitoring activities.

[Table 4.4](#) summarizes the inputs, guidelines, and tools used by the task and lists their source (if applicable).

TABLE 4.4 Inputs: Maintain requirements for reuse.

Task Input	Input Type	Input Source	Source Knowledge Area
Requirements	Input		
Designs	Input		
Information management approach	Guidelines and tools	Plan business analysis information management.	Business Analysis Planning and Monitoring

Business analysts need to step through three task elements to maintain and potentially reuse requirements. These elements are as follows:

- Maintain requirements.
- Maintain attributes.
- Reusing requirements

Let's look at each of these elements now.

Maintain Requirements *Maintained requirements* and designs are correct, up-to-date and available across the business analysis life cycle as well as the project life cycle. The business analysis team is responsible for keeping requirements current and correct while they are being developed and when a change is requested and approved.

Maintain Attributes It is not enough to just keep the requirements for your project up-to-date and available. The requirements attributes that were elicited along with those requirements also need to be maintained. Typical attributes collected during requirements elicitation include the requirements source, priority, and complexity. Remember that requirements attributes may change

over time while the requirement itself stays the same.

Reusing Requirements Maintained and retrievable requirements can be reused across multiple projects or initiatives. *Reusable requirements* are those that the organization must meet on a continuous basis, such as contractual obligations, quality standards, business processes, or service level agreements (SLAs). The organization may have to prove that the ongoing, operational requirements are met by the deployed solution.

Requirements that are met or satisfied by a deployed solution should be maintained as long as the business stakeholders need them. This can be a great help in getting future product enhancements and system changes done and done well.

Exam Spotlight

Unapproved or unimplemented requirements might also be maintained for later use on future projects or initiatives.

Techniques to Consider

The *BABOK® Guide* recommends several techniques that can be used as part of maintaining reusable requirements. Here is a look at those techniques:

Business Rules Analysis Business rules that are similar across the enterprise may be helpful in identifying requirements that are candidates for reuse on other projects and initiatives.

Data Flow Diagram Look for information flow that is similar across the enterprise. This consistent data may indicate requirements that are candidates to be maintained and reused.

Data Modelling Just like data flow, data structures that are similar or consistent across the enterprise may be pointing to requirements that are candidates for reuse.

Document Analysis Playing detective and analyzing existing documentation at the enterprise level may assist you in discovering requirements that may be maintained and reused on other projects and initiatives.

Functional Decomposition When performing functional decomposition to break something down into more detailed pieces and parts, be sure to look for requirements associated with lower-level components of the solution that can be reused.

Process Modelling Process modelling gives a window into the requirements associated with the processes that might be candidates for reuse.

Use Cases and Scenarios Use cases and scenarios can help identify solution components that can be reused by more than one solution.

User Stories User stories can be used to identify requirements associated with the story being told that may be available for reuse as part of another solution.

Business analysts select which techniques they will apply as part of maintaining requirements. Now let's take a look at the outputs resulting from applying your selected techniques to maintaining requirements.

Produce Maintained Requirements

Maintained and reusable requirements and designs often become part of the organizational process assets (OPAs) and the enterprise architecture of an organization. These requirements should be formatted and suitable for long-term or future use by the organization. [Table 4.5](#) summarizes the output from this task and its destinations.

TABLE 4.5 Output: Maintain requirements.

Output	Output Destinations	Destination Knowledge Area
Requirements (maintained)		
Designs (maintained)		

As a business analyst, you have the primary responsibility for formatting and storing maintained and reusable requirements and designs after your project is complete. It is likely that these requirements will be used by a different business analyst at a future date, so you should make sure that the requirements are accessible and easily understood. Several other business analysis stakeholders also have a need for reusable and maintained requirements, including the following:

- Domain SMEs
- Implementation SMEs
- Support
- Regulators
- Testers

Reusable and maintained requirements are not always produced on every project. The only requirements that you should consider for this task are those that the organization must meet on a continuous basis or those that are needed by business stakeholders. Let's look at another essential task in producing project requirements: prioritizing requirements.

Prioritize Requirements

Requirements prioritization determines the relative importance of requirements in order to gain maximum value to each other and to implement the overall solution scope. Ranking the requirements by their importance to stakeholders is the way most business analysts perform this task.

There are many ways to prioritize requirements. The requirements prioritization scheme needs to be planned and defined for the business analysis team prior to eliciting requirements information at any level of detail. The priority of a specific requirement or group of requirements may alter over time as the context and level of detailed knowledge changes.



Real World Scenario

A Must-Do Requirements Stew

Phil was asked to finish up a project that had languished in the requirements development stage for years. The project approach was to procure a commercial product to provide the required capabilities and customize that product as needed. Contributing departments had gold plated the project requirements to such an extent that there were no commercial products that came close to meeting the defined needs of the business. The solution scope had expanded from meeting a single unit's business need to addressing multiple business processes across departments and organizations.

All efforts to focus on the set of core functionality required to meet the original business need came to naught. Phil got the key users together and attempted to prioritize the existing requirements set. No one would back down from ranking their requirements at the highest priority, regardless of the prioritization method Phil invoked. They tried forced ranking with no success. They tried voting with even less success. They stuck dots on the wall, they used sticky notes, they time boxed, and they budgeted. To add to the confusion, the marketing department (a key player) consistently refused to state any clear requirements other than needing total flexibility to react to changes in the marketplace.

Phil discovered that sometimes the people creating the requirements are incapable of objectively prioritizing the features they have spent time dreaming up. He also found that his key stakeholders had difficulty distinguishing between the core functionality and the optional features of a solution. As Phil discovered, working on projects where the key stakeholders have identified more requirements than can be economically implemented is a serious challenge, indeed.

How did Phil solve this conundrum? He couldn't solve it this time around. It was impossible for any single software product on the market to meet this diverse set of requirements stew. The project issues were escalated to senior management, and eventually the project was scrapped. However, Phil learned many lessons on prioritizing requirements and dealing with stakeholders; he applied these successfully to future projects. Sometimes the best business analysis lessons are the painful and unsuccessful ones. Just try to keep those lessons to a minimum.

Figure 4.4 summarizes the inputs, outputs, guidelines, tools, techniques, and associated tasks used to prioritize requirements. Remember, requirements prioritization is a consultative and ongoing process. Your stakeholders play a key role in prioritizing the requirements and should make the final decision on which new solution capabilities are most important to them as well as which capabilities are absolutely required to get the job done.

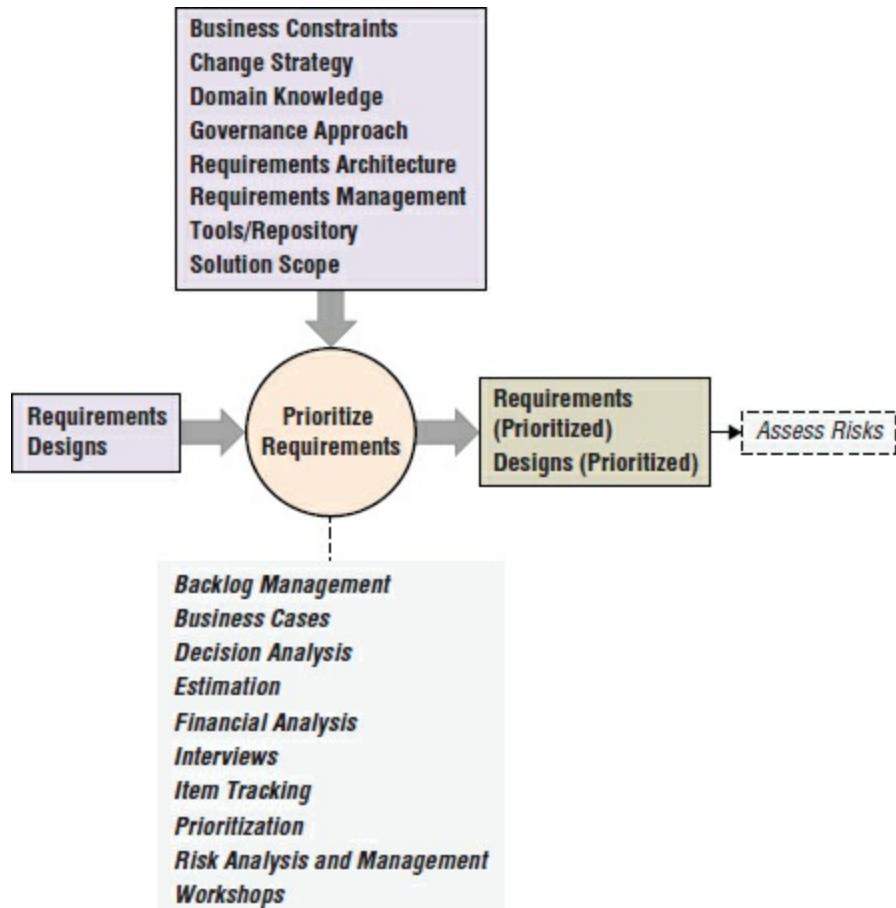


FIGURE 4.4 Task summary: Prioritize requirements.

Two inputs are used when prioritizing requirements or designs.

Requirements To prioritize requirements defining stakeholder needs and capabilities, a business analyst needs to have those requirements available. Requirements ready for prioritization can be in the form of text, matrices, or diagrams.

Designs To prioritize any designs associated with the solution, business analysts need to have those designs on hand in the form of text, prototypes, or diagrams.

There are additional inputs that can be used by business analysis tasks: guidelines and tools. Guidelines are essentially instructions or descriptions on why and how a business analyst will undertake a task. Tools are methods for conducting a business analysis task or shaping a task output. Here is a look at the guidelines and tools that can also be used as inputs when prioritizing requirements:

Business Constraints Requirements priorities should align with the regulatory statutes, contractual obligations, and business policies of the enterprise. These constraints may drive the priority of one or more requirements.

Change Strategy The change strategy documents costs, timelines, and value realization goals that can factor into prioritizing requirements to meet these planned goals and measures.

Domain Knowledge Stakeholders with specific domain knowledge contribute a lot of value to requirements prioritization activities. Their knowledge and experience are indispensable.

Governance Approach The governance approach, built during Business Analysis Planning and Monitoring, defines the approach for the business analyst to take on the project when prioritizing requirements.

Requirements Architecture The requirements architecture defines the relationship of requirements to other requirement and work products.

Requirements Management Tools/Repository Many requirements management tools include a data field for specifying requirements priorities. This field prompts the business analyst to prioritize the requirement and assists in sorting and searching the requirements for the project by priority.

Solution Scope The solution scope should be kept front and center when prioritizing requirements in order to deliver the full solution in the end.

[Table 4.6](#) summarizes the inputs, guidelines, and tools used by this task. It also lists the task and knowledge area sources for each item used to prioritize requirements.

TABLE 4.6 Inputs: Prioritize requirements.

Task Input	Input Type	Input Source	Source Knowledge Area
Requirements	Input		
Designs	Input		
Business constraints	Guidelines and tools		
Change strategy	Guidelines and tools	Define change strategy.	Strategy Analysis
Domain knowledge	Guidelines and tools		
Governance approach	Guidelines and tools	Plan business analysis governance.	Business Analysis Planning and Monitoring
Requirements architecture	Guidelines and tools		
Requirements	Guidelines		

management tools/repository	and tools		
Solution scope	Guidelines and tools	Define change strategy.	Strategy Analysis

When prioritizing the requirements on your projects, you should perform several task elements, such as the following:

- Defining the basis or criteria for prioritizing requirements
- Considering challenges of prioritization
- Address continual prioritization

Let's look at each of these elements in greater detail.

Defining the Basis for Requirements Prioritization A number of prioritization schemes and approaches can be used, such as prioritization based on looking at which requirements should be implemented first in a solution. The *BABOK® Guide* provides you with eight factors to consider when determining the basis for requirements prioritization, either standalone or in combination with one another. [Table 4.7](#) summarizes these eight factors for prioritizing requirements.

TABLE 4.7 Requirements prioritization factors

Prioritization Factor	Requirements Are Prioritized to . . .
Benefit	Provide the most business value and meet business goals and objectives.
Penalty	Minimize the negative consequences of not implementing a specific requirement.
Cost	Force stakeholder awareness of the implementation cost of requirements.
Risk	Spend time early on risky or difficult components to make sure the solution can be delivered.
Dependencies	Implement requirements that depend upon one another at the same time.
Time Sensitivity	Yield quick or certain successes relative to adding value to the business.
Stability	Avoid implementing unstable requirements until they are better defined and understood.
Regulatory or Policy Compliance	Address regulatory or policy requirements.

Considering Prioritization Challenges Facilitating a session to prioritize requirements can be quite challenging. There is a tendency for stakeholders to issue nonnegotiable demands relative to the importance of their requirements, such as ranking all of their requirements as the most important requirements of

the bunch (whether they really are or not). The problems aren't confined to the stakeholders, though. It is not unusual to find the solution development team trying to influence the prioritization results, perhaps because they have some interesting technology they would like to implement. The facilitator must recognize and focus on the need for trade-off decision making and compromise in a session that takes on these characteristics.

Continual Prioritization Requirements priorities can be a moving target over time as more information becomes available. As the requirements are defined in greater detail, initial assigned priorities may need to be revisited and revised. The basis for prioritization also changes over time. Initial priorities based upon business benefits may be reprioritized based upon technical constraints and the order of implementation or the cost of the requirements.

There are several techniques that you can choose to apply when prioritizing your project requirements. The technique that we recommend is the prioritization technique, which covers a range of ways to prioritize requirements. Let's take a look at this recommended technique in greater detail.

Recommended Technique: Prioritization

The prioritization technique is a catchall for several approaches to prioritizing requirements. The priorities may be based on risk, value, implementation difficulty, or other criteria. The four approaches are *grouping*, *ranking*, *time boxing/budgeting*, and *negotiation*. The selection of approach is up to the business analyst team and may change to fit the current situation and the needs of the stakeholders. Business analysts may find themselves using one or more approaches to prioritize their project requirements. Let's step through each approach in more detail.

Grouping This common prioritization approach classifies requirements or business analysis information according to predefined categories, such as high, medium, and low, or the Must, Should, Could, and Won't categories of *MoSCoW analysis*. Grouping helps you to reach a common understanding with your stakeholders on the importance they place on the delivery of each requirement. Requirements might move between prioritization groups as you iteratively apply the technique and discuss your options with key stakeholders.

Ranking Ranking orders the requirements or business analysis information from what is most important to what is least important. Ranking can be explicitly sequenced to create a *product backlog* of requirements in an ordered list. One recommendation is to rank your requirements so that 25 percent of those requirements are Must, 25 percent of the requirements are Should, 25 percent are Could, and the remaining 25 percent are Won't. If these percentages don't work for you, you can select numbers that fit your project and your set of requirements to prioritize.

Time Boxing/Budgeting Time boxing/budgeting prioritizes requirements for implementation based on the allocation of a fixed resource, usually either time (time boxing) or money (budgeting). This technique is most effective when it is framed by the defined solution scope for the project.

Negotiation This approach requires establishing consensus among the involved stakeholders regarding the prioritized requirements. Conflict management and negotiation skills can be used to encourage the group to reach consensus.

When using any of these approaches to prioritize requirements, remember that one or more requirements might be redefined, deleted, or added to the set. Over time, the prioritized list of requirements might change based on new information and insight.

Additional Techniques to Consider

The *BABOK® Guide* recommends using one or more of the following additional techniques when you are prioritizing requirements for your project. They are summarized for you here:

Backlog Management Ranked requirements are often stored in a product backlog consisting of prioritized requirements in an ordered list. This backlog can be used to compare requirements to be prioritized.

Business Cases The business goals and objectives found in the business case are used to determine the importance of requirements during the prioritization process.

Decision Analysis You can use this technique to examine and model the consequences of different decisions before actually making a well-informed decision. When prioritizing project requirements, business analysts can use decision analysis to identify and assess high-value requirements.

Estimation Cost estimates are often used as the basis for requirements prioritization. This can occur early in the prioritization process or later when solution implementation specifics are being considered.

Financial Analysis These techniques can be used to assess the financial value of a set of requirements and to look at how implementation timing can impact that value.

Interviews Business analysts use interviews to understand how individual stakeholders or small stakeholder groups want to prioritize requirements.

Item Tracking Item tracking allows for tracking of any issues raised by stakeholders during prioritization activities.

Risk Analysis and Management Risky requirements often need to be investigated further to determine what should be done with them. Some organizations prefer to implement risky requirements early on to minimize the costs of failure, while others prefer to defer risky requirements until later in the life cycle in order to decide what to do with them.

Workshops Business analysts use workshops to understand the basis for how larger stakeholder groups want to prioritize requirements.

Once you have selected and applied one or more techniques as part of your requirements prioritization efforts, you are ready to continue with some of the other analysis tasks at hand. We will discuss those tasks shortly.

Produce the Prioritized Requirements

Prioritized requirements and *prioritized designs* are requirements that have been assigned a priority attribute indicating their relative importance to the stakeholders and to the organization. Sometimes you will find yourself assigning a priority value to a group of related requirements as opposed to a single, standalone requirement. Once you have prioritized your requirements, it is time to assess the risks inherent to those requirements. The prioritized stakeholder and solution requirements are used as an input to the Assess Risks task in Strategy Analysis, as summarized in [Table 4.8](#).

TABLE 4.8 Outputs: Prioritize requirements.

Output	Output Destinations	Destination Knowledge Area
Requirements (prioritized)	Assess risks.	Strategy Analysis
Designs (prioritized)	Assess risks.	Strategy Analysis

A number of stakeholders are involved with prioritizing stakeholder and solution requirements. Remember that the primary responsibility for prioritizing requirements is shared between the business analyst and the key stakeholders who are involved as part of the requirements prioritization process.

Several key business analysis stakeholders should also be involved in prioritizing requirements. The project manager uses your prioritized requirements during the implementation planning efforts. Other stakeholders participating in requirements prioritization include the following:

- Customer
- Domain SME
- End user
- Implementation SME
- Regulator
- Sponsor

Let's take a look at the next task found in the Requirements Life Cycle Management knowledge area—assessing and evaluating the implications of proposed changes to requirements and designs.

Assess Requirements Changes

One thing is certain when it comes to developing requirements—at some point in time, those requirements are going to change. Ideally, the changes are handled in a consistent, formal fashion by using a change request to initiate the process of assessing and decision making. This task is performed when a

proposed change identifies new needs or possible solutions to those needs. The proposed change must be assessed before action is taken to approve, deny, or modify the request.

Business analysts view proposed requirements and design changes relative to the solution value, the current set of requirements, and the level of risk. Experienced business analysts should ask the following questions when assessing a proposed change. Does the proposed change:

- Align with the overall strategy?
- Affect the value delivered to the business or the stakeholders?
- Impact the timeline or resources required to deliver the value?
- Alter any risks, opportunities, or constraints?

The answers to these questions drive the outcome of assessing the proposed change. When assessing a proposed change, remember to use the decision-making and change control approaches defined in the governance approach that was created by the task Plan Business Analysis Governance as part of Business Analysis Planning and Monitoring.



Real World Scenario

A Cat in the Hat Moment: Phase 1 and Phase 2

Phil, a business analyst, had a lot of fun with a recent project in his organization. The sales department decided that the company was lagging hopelessly behind other retail establishments because they forced their customers to physically sign a paper contract when purchasing services.

“After all,” they protested, “even Walmart lets you sign on an electronic pad.” “We must have electronic contracts!” said the business side of the house.

And the eContract project was born.

Phil and his team started working to determine the project requirements and define just what should, could, and must be delivered. It was an entertaining project. Operational questions were ignored. Legal constraints were ignored. All attempts to define eContracts in detail turned to dust. Group-focused meeting invitations went unanswered. Private meetings yielded conflicting and contradictory requirements.

However, at every executive management review or chance encounter in the hallways, Phil was asked, “Why is IT late on eContracts?”

In a last-ditch effort to deliver, Phil divided the project into Phase I and Phase II. Phase I included building the storage and retrieval backbone for contract images along with a method to scan the backlog of all existing paper contracts into a new database. The requirements were developed,

communicated, and approved with executive management, and the project work began.

Right about the time that Phase I was developed and ready for beta testing, Phil was told that none of the business sponsors would accept the project in phases. They needed to get the entire thing, Phase I and Phase 2 (kind of like Thing 1 and Thing 2 from *The Cat in the Hat*). On the heels of this revelation, Phil heard in passing that another department had taken the same challenge and had fully developed eContracts using a PDF form methodology. Never mind that it didn't offer any storage, retrieval, or integration with the sales tools. It was complete, and it was ready to rock 'n' roll.

Of course, the next question for Phil was how to integrate this new eContracts PDF form methodology with the existing systems? Effective impact analysis when assessing requirements changes can truly be an art form.

[Figure 4.5](#) summarizes the inputs, guidelines, tools, outputs, techniques, and associated tasks for assessing requirements changes on a project.

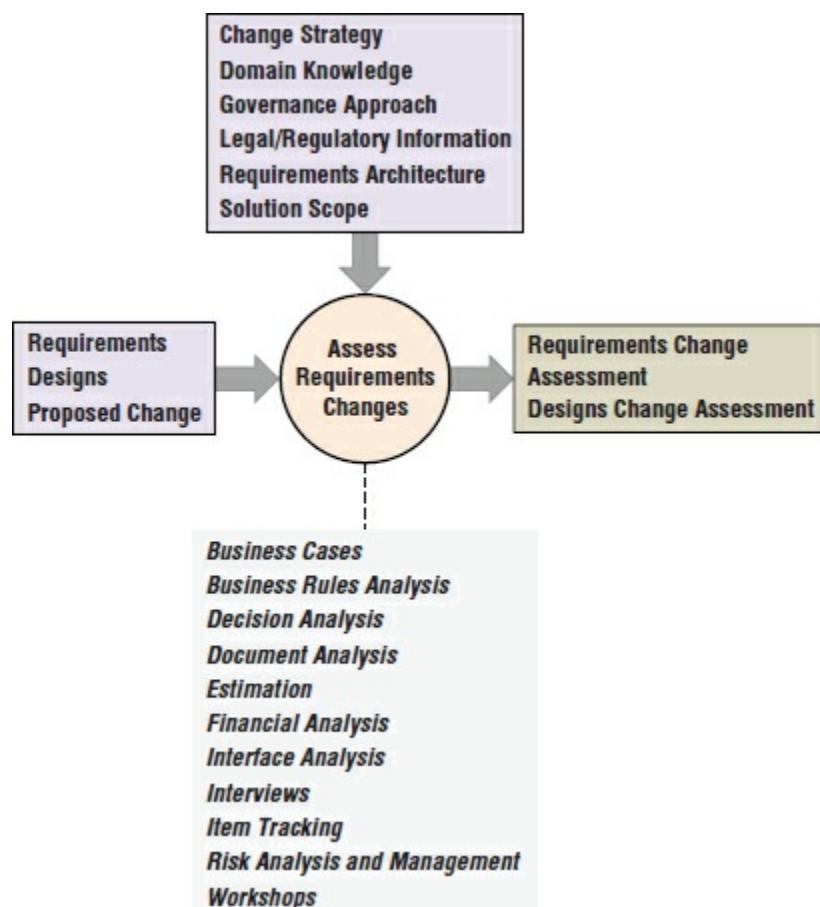


FIGURE 4.5 Task summary: Assess requirements changes.

Several key inputs are used to assess requirements changes during a project. These inputs are produced by other business analysis tasks.

Proposed Change A proposed change to requirements or designs can occur at almost any time and impact the business analysis work and deliverables completed to date. Triggers for proposed changes include business strategy changes, stakeholders, legal requirements, or regulatory changes.

Requirements Business analysts assess the requirements relative to a proposed change in order to identify and quantify the impact of that change.

Designs The more solution-focused designs are also assessed relative to a proposed change in order to identify and quantify the impact of that change and the modifications that will be made if the change takes place.

There are additional inputs that can be used by business analysis tasks: guidelines and tools. Here is a look at the guidelines and tools that can also be used as inputs when assessing requirements changes:

Change Strategy The change strategy describes the purpose of changes and establishes a context and direction for the changes on a project or initiative. It also identifies the critical components for change.

Domain Knowledge Stakeholders with specific domain knowledge contribute a lot of value to assessing proposed requirements changes.

Governance Approach The governance approach, built during Business Analysis Planning and Monitoring, defines the approach for the business analyst to take on the project when making decisions and dealing with change control.

Legal/Regulatory Information Legislative rules or regulations may also impact a proposed change on a project. They must be considered when assessing requested changes to requirements.

Requirements Architecture The requirements architecture defines the relationship of requirements to other requirement and work products. This architecture should be used when assessing the impacts of proposed changes to the requirements.

Solution Scope The solution scope should be considered when assessing proposed changes to requirements in order to fully understand the impacts of a proposed change.

[Table 4.9](#) summarizes the inputs, guidelines, and tools used by the task and lists the source of the input (if applicable).

TABLE 4.9 Inputs: Assess requirements changes.

Task Input	Input Type	Input Source	Source Knowledge Area
Proposed change	Input		
Requirements	Input		
Designs	Input		
Change strategy	Guidelines and tools	Define change strategy.	Strategy Analysis
Domain	Guidelines		

knowledge	and tools		
Governance approach	Guidelines and tools	Define business analysis governance.	Business Analysis Planning and Monitoring
Legal/regulatory information	Guidelines and tools		
Requirements architecture	Guidelines and tools		
Solution scope	Guidelines and tools	Define change strategy.	Strategy Analysis

Business analysts step through three essential elements as they assess a proposed change to requirements or designs. These three elements are as follows:

- Determine the change assessment formality.
- Perform an *impact analysis*.
- Provide impact resolution for the proposed change.

Here we step through each of these elements in more detail:

Determining Change Assessment Formality Methods for assessing and deciding upon requirements changes range from the very informal to formal requests complete with committees to consider whether the requests are worthwhile. Determining the level of formality depends upon the information available, the importance of the change, and the business analysis governance approach defining change control for requirements and designs.

Predictive approaches to projects often use formal methods to assess and determine the merits of requirement and design changes. Changes in projects using predictive approaches to planning can cause major rework of tasks and activities that were previously completed. In contrast, adaptive approaches to project planning often require less change assessment formality because of their iterative and incremental approach to getting work done.

Performing an Impact Analysis Impact analysis is done to assess or evaluate the impacts of a proposed change to requirements or designs. Traceability allows the business analyst to look at the impact of the change relative to related requirements and solution components. The impacts of changing existing requirements should be assessed across the five areas found in [Table 4.10](#).

TABLE 4.10 Areas of impact for changing requirements

Area	What to Look For
Benefit	Benefits to be gained by accepting the change
Cost	Total costs to implement the change
Impact	Number of customers or business processes affected
Schedule	Impact to existing delivery commitments

Providing Impact Resolution Business analysts follow the methods defined in the governance approach when making decisions about proposed changes on their projects. Based upon the approach, key stakeholders may be authorized to approve, deny, or defer a proposed change. Typically, the results of the impact analysis are documented and communicated to all stakeholders.



When considering the total costs of approving and implementing a proposed change, be sure to look at the cost to make the change, the cost of any associated rework resulting from the change, and any opportunity costs such as other features that might be sacrificed or deferred if the change is approved.

Techniques to Consider

The *BABOK® Guide* recommends that you select from a number of techniques when assessing a proposed change to requirements or designs. Let's step through these techniques now, since you should make yourself familiar with all of them.

Business Cases A business case is often used to justify a proposed change. Business cases are particularly relevant when looking at the benefits to be gained by accepting the proposed change to requirements or designs.

Business Rules Analysis This technique is used during impact analysis to trace business rules to the requirements that the business rules support. The technique also works in a different direction and can be used to trace the business rules that support requirements.

Decision Analysis Decision analysis facilitates the change assessment process by examining and modelling the possible consequences of different actions. This helps the business analyst decide whether to approve, deny, or defer a proposed change to requirements or designs.

Document Analysis Use document analysis to analyze existing documents to help you understand the possible impacts of a proposed change to the requirements or designs.

Estimation Estimating the cost and effort to implement a proposed change is a necessary step in impact analysis. Estimation is an iterative process where the act of review and revision takes place as more information is known over time.

Financial Analysis This technique estimates the financial consequences of a proposed change to requirements or designs. Consequences include financial viability, stability, and benefit realization.

Interface Analysis Interface analysis identifies interfaces that can be affected by a proposed change to requirements or designs. This technique looks at

where, what, why, when, how, and for whom information is exchanged between solution components or across solution boundaries.

Interviews Business analysts use interviews to talk with individuals and small groups of stakeholders in order to understand the impact of the change on the organization or its assets.

Item Tracking Item tracking or issue management tracks any issues or conflicts that were discovered during impact analysis activities.

Risk Analysis and Management Risk analysis and management techniques determine the level of risk associated with a proposed change as part of impact analysis activities.

Workshops Workshops allow groups of stakeholders to collectively discuss and understand the impacts of a proposed change or decide what to do about one or more proposed changes.

Assessing Requirements Changes

A Requirements or Designs Change Assessment is the output of this task. This assessment contains a recommendation to approve, modify, or deny a proposed change to either area based upon the results of the impact analysis. [Table 4.11](#) summarizes these outputs.

TABLE 4.11 Outputs: Assess requirements changes.

Output	Output Destinations	Destination Knowledge Area
Requirements change assessment		
Designs change assessment		

Business analysts have the primary responsibility for assessing requirements and design changes as part of requirements development activities on a project. The project manager reviews the requirements or design change assessment to see what impact the change might have on the solution. Other stakeholders involved in assessing requirements changes include the following:

- Customer
- Domain SME
- End user
- Operational support
- Regulator
- Sponsor
- Tester

Assessing requirements changes and deciding what to do about them occurs throughout the project life cycle. Let's take a look at another aspect of producing

project requirements: approving the requirements.

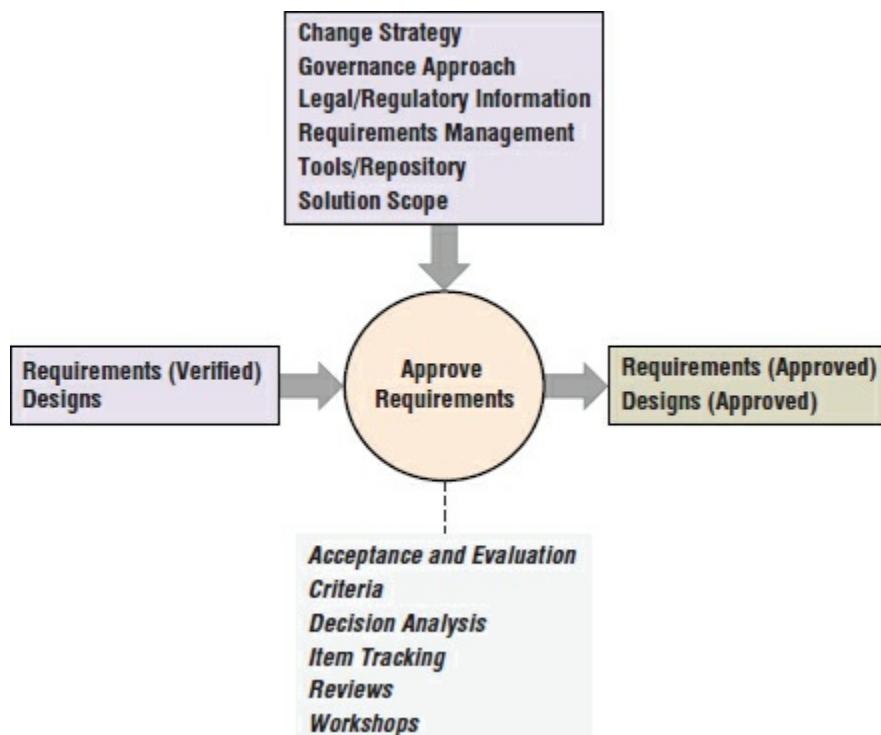
Approve Requirements

Much of the work that you perform as part of the Requirements Life Cycle Management knowledge area gets your project requirements organized and structured appropriately. After they are in good shape, you can share them with key stakeholders for their review, understanding, and approval. This final task holds you responsible for communicating, obtaining agreement on, and getting approval of the requirements and designs. After receiving approval, business analysis work can proceed or actual solution construction can begin.

Requirements communication tends to be iterative and ongoing in nature. It is usually done in parallel with most of the other business analysis tasks found in the *BABOK® Guide*. Requirements communication can be formal or informal in nature and includes conversations, notes, documents, presentations, and discussions with your stakeholders.

Approval of requirements and designs may also be formal or informal. Predictive approaches usually perform approvals of requirements and designs at the end of project phases or during change control meetings. On the flip side, adaptive approaches approve requirements when construction and implementation of the solution meeting the requirements are ready to be done.

[Figure 4.6](#) summarizes the inputs, outputs, techniques, and associated tasks for effectively communicating your project requirements.



[FIGURE 4.6](#) Task summary: Approve requirements.

Several key inputs are used when approving requirements during a project. These inputs are produced by other business analysis tasks. Here is a closer look

at these inputs:

Requirements (Verified) Verified requirements provide a set of requirements that are of sufficient quality to be used as a reliable body of work for further specification and development.

Designs This set of designs is ready to be used for further specification and development.

Additional inputs that can be used by business analysis tasks include guidelines and tools. Here is a look at the guidelines and tools that can also be used as inputs when approving requirements:

Change Strategy The strategy provides information that helps manage stakeholder consensus regarding stakeholder needs.

Governance Approach A governance approach identifies stakeholders who have the authority and responsibility to approve business analysis information, the approval process, and their alignment to organizational policies.

Legal/Regulatory Information This information describes the legislative rules or regulations that must be followed and may impact the approval process.

Requirements Management Tools/Repository A tool such as this documents requirements approvals.

Solution Scope Business analysts assess scope when approving requirements to accurately assess alignment and completeness.

[Table 4.12](#) summarizes the inputs, guidelines, and tools to the business analysis task of approving requirements and lists the source of the input (if applicable).

TABLE 4.12 Inputs: Approve requirements.

Task Input	Input Type	Input Source	Source Knowledge Area
Requirements (verified)	Input	Verify requirements.	Requirements Analysis and Design Definition
Designs	Input		
Change strategy	Guidelines and tools	Define change strategy.	Strategy Analysis
Governance approach	Guidelines and tools	Plan business analysis governance approach.	Business Analysis Planning and Monitoring
Legal/regulatory information	Guidelines and tools		
Requirements management tools/repository	Guidelines and tools		
Solution scope	Guidelines and tools	Define change strategy.	Strategy Analysis

You need to perform the elements that are part of this task in order to communicate and gain approval of the project requirements by key stakeholders. The four elements are as follows:

- Understand stakeholder roles.
- Address conflict and issue management.
- Gain consensus.
- Track and communicate approval.

Let's step through each of these elements now:

Understand Stakeholder Roles The approval process for proposed changes to requirements or designs is defined in the business analysis governance approach. Stakeholder roles and authority levels in this process must be defined and understood. It is essential to know who has the decision-making and sign-off authority. Look for influential stakeholders that should be consulted or informed about the changes, as well. These influencers can help with communicating and gaining consensus about the changes that are proposed.

Address Conflict and Issue Management Maintaining stakeholder support for a change to requirements or designs can be challenging. The *BABOK® Guide* recommends seeking consensus for the change among stakeholders prior to requesting that they approve and sign-off on the change. The business analysis governance approach built during Business Analysis Planning and Monitoring defines how to make decisions about changes and resolve any conflicts that arise.

Gain Consensus Approval requires a business analyst to review requirements changes with accountable stakeholders and request that they agree to and approve that change. Often, this process requires facilitation of the approval process, addressing questions and providing additional information as needed. Approving a change confirms that stakeholders believe the change creates sufficient value for the organization.

Track and Communicate Approval Formal requirements communication follows the contents of the business analysis governance approach when it comes to dealing with proposed changes. Informal communication takes place whenever it is needed. Business analysts record the change approval decisions, often using requirements management tools.

Stakeholders should be able to see what requirements and design changes are approved and in the queue for implementation. Many projects require an audit history of changes to requirements. Be sure to document what was changed, the business analyst who made the change, the reason for the change, and when the change was made.

Exam Spotlight

According to the *BABOK® Guide*, conflict resolution and issue management occurs frequently during the change approval process. This occurs when the business analyst reviews requirements and designs and aims to secure a sign-off on proposed changes.

Techniques to Consider

The *BABOK® Guide* recommends five techniques to use when approving requirements with your stakeholders. Here is a summary of each technique:

Acceptance and Evaluation Criteria Stakeholders and decision-makers define acceptance and evaluation criteria in order to make decisions regarding proposed requirements and designs changes.

Decision Analysis Decision analysis allows you to examine and model the consequences of different decisions before making a well-informed decision. When resolving issues and evaluating proposed changes, business analysts use decision analysis to resolve issues and gain agreement.

Item Tracking Item tracking allows tracking of any issues raised by stakeholders during the agreement and approval activities.

Reviews Reviews are used to evaluate requirements and designs relative to a proposed change.

Workshops Requirements workshops are structured meetings where a selected group of stakeholders works together to define or refine a set of project requirements. During a requirements workshop, specific requirements may be presented to make everyone familiar with the existing solution scope and the current requirements.

Once you have applied one or more of the recommended techniques and gained approval of your requirements, those requirements are now approved requirements. Remember that communicating requirements ensures that the stakeholders understand what they have been told.

Approving Requirements with Your Stakeholders

Remember that proposed changes to requirements and designs are not just communicated from the business analyst to the stakeholders. They must be received, understood, and acknowledged by those stakeholders in order for effective requirements communication to have taken place. [Table 4.13](#) shows this output trail.

TABLE 4.13 Outputs: Approve requirements.

Output	Output Destinations	Destination Knowledge Area
Requirements (approved)		
Designs (approved)		

The business analyst has the primary responsibility for ensuring that proposed changes to requirements and designs are analyzed, communicated, and approved during the requirements development activities on a project. In tandem, the project manager identifies and manages the risks associated with the approved changes. Additional stakeholders involved with approving requirements include the following:

- Customers
- Domain SMEs
- End users
- Operational support
- Regulators
- Sponsor
- Testers

Remember that all business analysis stakeholders may have a role in this task and could be involved with requirements approval activities across the project life cycle. At a minimum, they may be a sender or a receiver of the communicated requirements information.

How This Applies to Your Projects

In this chapter, you stepped through tasks that help you to manage changing requirements across the requirements life cycle. One of the biggest challenges that you encounter on your projects is managing changing requirements. Sometimes it takes no more than five minutes after requirements sign-off to start hearing the inevitable changes creeping back into what was just approved. This can be caused by a number of factors.

- Increased level of interaction and information sharing both within and between systems
- Lack of requirements traceability yielding poor understanding of requirements dependencies
- Changes in business plans and objectives that create a high-level focus shift and impact your existing requirements
- Changes in technology, law, policies, regulations, or directives
- Boundary conditions and constraints that move, causing your requirements to change as well
- Customers and users who change their minds about what they need
- Developers who add their own special twists, creating undocumented features that come back to haunt us

Configuration management (CM) is the key to managing changing requirements. Effective issue and change management is possible only if it is supported by CM. Configuration management is a technical and administrative activity focusing on creating, maintaining, and controlling change to the solution and its components (a configuration) throughout that solution's life cycle.

All organizations should have a configuration management strategy for their projects. The strategy can be developed on a project-by-project basis or be applied to all projects that the organization undertakes. The configuration management strategy identifies how, and by whom, the project's products will be controlled and protected. It answers these questions:

- How and where will the project's products be stored?
- What storage and retrieval security will be put in place?
- How will the products and the various versions and variants of these products be identified?
- How will changes to products be controlled?
- Where does responsibility for configuration management lie?

A configuration management strategy is typically derived from a number of information sources, including any corporate configuration management, quality management, or information management systems and strategies.

Typically, the strategy is based on either the user's or the supplier's quality management systems and is targeted to support meeting the customer's quality expectations. The specific needs of the solution and the environment where it is being developed also plays a part in this strategy, as does the project management team structure with its identified configuration management roles and responsibilities.

To control and protect your solution and its assets, use a configuration management strategy focusing on the solution and the solution components of your project. This is the best way to provide a framework ensuring that your solution deliverables are identified, tracked, and protected. The five generic steps are illustrated in [Figure 4.7](#): Plan, Identify, Control, Account, Verify. Let's take a quick look at each step.

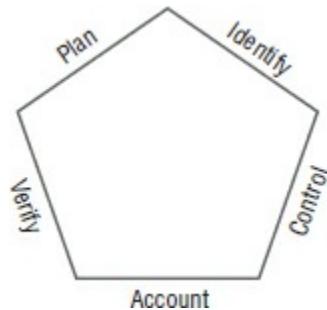


FIGURE 4.7 A framework for configuration management

Plan Configuration management planning defines how you will address storage, retrieval, security, version control, and change control for the solution deliverables. The timing for these activities should also be defined.

Identify Identification encompasses specifying and identifying all components of the final product. This is where you would create unique identifiers and records for each solution component.

Control Configuration control invokes the ability to approve and baseline deliverables. Changes to approved products can be made only by following the formal change procedure for the solution.

Account Status accounting is the recording and reporting of all current and historical data concerning each deliverable or configuration.

Verify The project's configuration management system should provide you with the ability to audit actual deliverables against information recorded about those deliverables in the system, such as current status.

Summary

The five tasks of the Requirements Life Cycle Management knowledge area guide the business analyst in effectively managing requirements changes and communicating requirements to stakeholders across the project life cycle. One of the primary roles of the business analyst is developing and managing requirements across the project life cycle. Effective communication skills are an underlying competency enabling the business analyst to do this work. Successful projects start with defining and agreeing to what is needed. Without the ability to make these requirements understood, you will find it difficult to perform your job well.

The *BABOK® Guide* recommends that business analysts plan for managing changing requirements and designs before the real project work gets started. This information can be found in the business analysis governance plan, which was built as part of the Business Analysis Planning and Monitoring knowledge area. The same holds true for effectively communicating about changing project requirements to the stakeholders. This information was also planned for and is located in the governance approach.

Most of the deliverables produced in the Requirements Life Cycle Management knowledge area focus on adding details to the stakeholder, solution, and transition requirements as specific actions are taken by the business analysis team.

Exam Essentials

Be able to list the tasks found in the Requirements Life Cycle

Management knowledge area. On your exam, you will see questions about the tasks, their associated techniques, their more detailed elements, and the key outputs they produce. You should memorize the five tasks of this knowledge area and any key outputs or techniques associated with them. The tasks are as follows:

- Trace requirements.
- Maintain requirements.
- Prioritize requirements.
- Assess requirements changes.
- Approve requirements.

Be able to discuss how requirements are transformed by the tasks in this knowledge area. The key deliverables produced by the tasks in this knowledge area focus on actions being taken to communicate project requirements to your stakeholders and manage any changes to those requirements. Luckily, the task name directly gives away the state of the requirements after the task is successfully performed. Here's a quick summary:

- Approve requirements yields the approved requirements.
- Trace requirements yields the traced requirements.
- Maintain requirements yields the maintained and reusable requirements.
- Prioritize requirements yields the prioritized requirements.

Be able to explain the difference between adaptive and predictive approaches when assessing proposed changes. Adaptive approaches may require less formality in assessing proposed changes. By their iterative and incremental nature, adaptive approaches minimize the impact of changes. This continuous evolution approach to implementation may reduce the need for formal impact assessment. In contrast, predictive approaches may require a formal assessment of proposed changes. Changes can generate a serious rework of tasks, activities, and deliverables that were previously complete.

Be able to list and describe the five areas for assessing the impact of a proposed change to requirements. Five areas should be considered when considering changes or additions to existing requirements:

- Benefit
- Cost
- Impact
- Schedule
- Urgency

Be familiar with the factors that influence requirements prioritization.

Numerous factors may influence how requirements are prioritized on a project. Typical factors include the following:

- Benefit
- Penalty
- Cost
- Risk
- Dependencies
- Time sensitivity
- Stability
- Regulatory or policy compliance

Be able to list and describe the five common traceability relationships between requirements.

These relationships may be tracked and recorded during and after requirements development:

- Derive
- Depends/Necessity
- Depends/Effort
- Satisfy
- Validate

Key Terms

This chapter stepped through the contents of the third knowledge area from the *BABOK® Guide: Requirements Life Cycle Management*. Most of this knowledge area focuses on effectively managing changes and communicating about requirements during the requirements development phase of a project.

You should understand how to apply the techniques and tasks in this knowledge area in order to be an effective business analyst. Additionally, you will need to know the five tasks and their associated elements and techniques from this knowledge area in order to be successful on the CBAP® or CCBA™ exams. The tasks include the following:

- Trace requirements.
- Maintain requirements.
- Prioritize requirements.
- Assess requirements changes.
- Approve requirements.

Several new key words in Chapter 4 relate to managing changes and communicating requirements on a project. Here is a list of some of the key terms that you encountered in this chapter:

- dependency
- derivation
- grouping, ranking, time boxing/budgeting, and negotiation
- impact analysis
- maintained requirements
- product backlog
- requirement's lineage
- requirements traceability
- reusable requirements
- reuse
- satisfy

Review Questions

1. Which Requirements Life Cycle Management task seeks approval and sign-off on requirements or designs?
 - A. Obtain requirements sign-off.
 - B. Communicate requirements.
 - C. Approve requirements.
 - D. Assess requirements changes.
2. Which document determines how the business analyst obtains approval of business analysis information with their stakeholders?
 - A. Business analysis approach
 - B. Project management plan
 - C. Change strategy
 - D. Governance approach
3. What stakeholder is responsible and accountable for the project scope?
 - A. Project sponsor
 - B. Business analyst
 - C. Project manager
 - D. Process owner
4. The BACCM™ states that the business analyst is responsible for extending value beyond the current initiative they are working on. This is done by:
 - A. Ensuring the solution meets the business need
 - B. Analyzing content of the current enterprise
 - C. Maintaining requirements and designs for reuse
 - D. Managing and evaluating proposed changes
5. Which of the following business analysis work products must be traceable to a business requirement?
 - A. Solution and stakeholder requirements
 - B. Other requirements and designs
 - C. Solution components and scope
 - D. Business rules and objectives
6. Three business analysis deliverables are inputs to several Requirements Life Cycle Management tasks. They are used to influence and guide the business analyst in managing requirements. Which of the following deliverables is *not* one of the three inputs?

- A. Governance approach
 - B. Information management approach
 - C. Change strategy
 - D. Business analysis approach
7. You are defining the traceability approach for your requirements. You want to make sure that the business analysis team traces the relationship between functional requirements and the solution components that implement those requirements. This is an example of which traceability relationship?
- A. Satisfy
 - B. Derive
 - C. Validate
 - D. Depends
8. You are a business analyst tasked with ensuring that stakeholders with approval authority agree about the requirements that the solution should meet. You are most likely performing tasks from which knowledge area?
- A. Business Analysis Planning and Monitoring
 - B. Strategy Analysis
 - C. Requirements Life Cycle Management
 - D. Solution Evaluation
9. Which of the following techniques can be applied when tracing requirements?
- A. Data flow diagrams
 - B. Use cases and scenarios
 - C. Functional decomposition
 - D. Decision analysis
- o. What states of requirements outputs are contained in the Requirements Life Cycle Management knowledge area tasks?
- A. Analyzed, allocated, traced, and confirmed
 - B. Traced, maintained, prioritized, and approved
 - C. Stated, analyzed, unconfirmed, and verified
 - D. Approved, analyzed, prioritized, and traced
11. What is another name for an organized peer-level review of a requirements document?
- A. Business rules analysis
 - B. Brainstorming session
 - C. Focus group

- D. Requirements workshop
2. Requirements that are intended for reuse reflect what view of the organization?
- A. Enterprise level
 - B. Current state
 - C. Ongoing operations
 - D. Future state
3. When prioritizing requirements, which prioritization factor takes into account the likelihood that a requirement will change?
- A. Penalty
 - B. Benefit
 - C. Stability
 - D. Dependency
4. Which guideline or tool is used during requirements prioritization to understand the relationship with other requirements and work products?
- A. Business constraints
 - B. Solution scope
 - C. Governance approach
 - D. Requirements architecture
5. The business analyst receives input from a stakeholder regarding the impacts of technical dependencies on a specific stakeholder requirement. Which stakeholder is most likely to be providing this input?
- A. Domain SME
 - B. Implementation SME
 - C. Project manager
 - D. Operational support
6. When defining your approach to requirements traceability on your project, what levels will you choose from when deciding how to trace the requirements?
- A. Business, stakeholder, or solution
 - B. Capability, conditions, or constraints
 - C. Individual, model, or feature
 - D. Requirements, components, or artifacts
7. The requirements life cycle begins with the representation of a business need as a requirement. When does the requirements life cycle end?
- A. When a solution representing the requirements is retired

- B. After the solution representing the requirements is developed
 - C. Once the solution representing the requirements is implemented
 - D. When the operational solution meets the business need
8. You are a business analyst assessing a proposed change to a set of requirements. Your project is being developed in an adaptive fashion with iterative and incremental implementation techniques. How might you handle your impact analysis?
- A. Impact analysis must be informal.
 - B. Impact analysis must be formal.
 - C. Impact analysis may be informal.
 - D. Impact analysis may be formal.
9. What is the basis for requirements life cycle management during a project, ensuring that proposed requirements support business needs?
- A. Business case
 - B. Business need
 - C. Solution scope
 - D. Desired outcome
10. All of the following are elements of the approve requirements task *except*:
- A. Capabilities and processes
 - B. Understand stakeholder roles
 - C. Track and communicate approval
 - D. Conflict and issue management

Chapter 5

Controlled Middle: Elicitation and Collaboration

CBAP®/CCBA™ EXAM TOPICS COVERED IN THIS CHAPTER:

- ✓ **Prepare for elicitation.**
- ✓ **Conduct elicitation activity.**
- ✓ **Confirm elicitation results.**
- ✓ **Communicate business analysis information.**
- ✓ **Manage stakeholder collaboration.**



Business analysts elicit the necessary information to develop their business, stakeholder, solution, and transition requirements for their projects. The five tasks in the Elicitation and Collaboration knowledge area guide you in gathering and understanding what the project stakeholders need from a new solution. Remember that effective *elicitation* is not just asking questions. It is a human-based activity in which you determine the right sources for your requirements and decide how to gather the right information from those sources. Elicitation is very much like a scientific investigation. You will find yourself actively engaged in research, reading, talking, and observing what is going on in the organization as it relates to your project requirements. Elicitation includes organizing and evaluating the results to make sure you have well-organized information, the right level of knowledge, and a good handle on the scope and status of your elicitation efforts.

Requirements Elicitation

The Elicitation knowledge area focuses on gathering the right information to develop project requirements. The requirements for your project are the foundation for a solution that will be designed and deployed by the project and its efforts. Elicitation is defined as “drawing forth or receiving of information from stakeholders or other sources.” *Collaboration* is defined as “the act of two or more people working together towards a common goal.”

Requirements elicitation can be very challenging. When working with your stakeholders to define requirements, you are often faced with stakeholders who express those requirements in their own terms. You must learn to speak the stakeholders’ language in order to understand the capabilities that are being described. Stakeholders don’t always tell you everything that you need to know, at least not the first time around. Elicitation techniques must be selected to gather as much relevant information as quickly as possible.

Requirements elicitation is performed for all types of requirements found in the *BABOK® Guide*: business, stakeholder, solution, and transition. Elicitation is performed for your project’s high-level business requirements as well as your more-detailed solution requirements. The tasks in the Elicitation and Collaboration knowledge area are performed in parallel with other requirements development tasks from the following knowledge areas:

- Strategy Analysis (business requirements)
- Requirements Analysis and Design Definition (stakeholder and solution requirements)
- Solution Evaluation (transition requirements)

Strategy Analysis, Requirements Analysis and Design Definition, and Solution Evaluation

Be sure you know which of the three knowledge areas are involved directly with requirements development work and how they relate to the elicitation efforts that we discuss in this chapter.

Strategy Analysis Strategy Analysis focuses on identifying the business needs that drive a project and defining a feasible solution scope that can be implemented by the business. This knowledge area includes developing the business requirements for a project that define the high-level goals, objectives, and needs of the organization, and the high-level business functionality needed in the resulting solution.

Requirements Analysis and Design Definition Requirements Analysis and Design Definition steps you progressively through elaborating

and prioritizing the stakeholder and solution requirements for a project. Stakeholder requirements define the needs of stakeholders and how they will interact with a solution. They act as a bridge between high-level business requirements and more-detailed solution requirements. In turn, the solution requirements describe the solution characteristics that are needed to meet the higher-level business and stakeholder requirements.

Solution Evaluation Solution Evaluation assesses and validates the proposed, in progress, and implemented solutions before, during, and after the project life cycle. This is also where the project's transition requirements are defined. Transition requirements define the solution capabilities required to transition from the current to a future state. They are no longer needed once the transition is complete.

The Elicitation and Collaboration knowledge area also addresses monitoring and reporting on the performance of the elicitation activities throughout the project. The business analysis team is responsible for assessing the effectiveness of the techniques being used to elicit requirements. The Elicitation and Collaboration knowledge area is addressed in Chapter 4 of the *BABOK® Guide*.

To focus on what is important to business analysts across the life cycle of their business analysis efforts, let's consider the tasks of this knowledge area with the framework of the BACCM™. Business analysts need to keep an eye on their work relative to the six concepts contained in the framework: changes, needs, solutions, stakeholders, values, and contexts. [Table 5.1](#) lists these responsibilities.

TABLE 5.1 The BACCM™: Elicitation and Collaboration

Core Concept	The Business Analyst's Responsibilities
Change	Use a variety of elicitation techniques to fully identify the characteristics of the change and any stakeholder concerns about the change.
Needs	Elicit, confirm, and communicate needs and supporting business analysis information over time.
Solution	Elicit, confirm, and communicate necessary or desired characteristics of proposed solutions.
Stakeholders	Manage collaboration with stakeholders participating in the business analysis work.
Value	Collaborate with stakeholders to assess the relative value of elicitation information in order to confirm and communicate that value.
Context	Apply various elicitation techniques to identify business analysis information about the context that may affect the change.

You must learn to judge when you have elicited and acquired enough requirements information to start documenting and analyzing what you have

learned. Experienced business analysts find themselves moving between *requirements elicitation*, *requirements analysis*, and *requirements documentation* activities many times on their projects. This is very much like the wand on a metronome, moving left to right to left again in order to keep the beat for the music being played.

The Business Analyst's Task List

You have five tasks to perform in the Elicitation knowledge area. We will cover each one of these tasks in detail later in this chapter. The task list from the *BABOK® Guide* includes the following:

- Preparing for requirements elicitation
- Conducting the elicitation activity
- Confirming the elicitation results
- Communicating business analysis information
- Managing stakeholder collaboration

These tasks focus on obtaining the right information from the right sources in order to develop the right requirements for your project. Remember, effective requirements elicitation in your projects is multifaceted and requires the following:

- The right sources
- The right information
- The right technique
- Clear organization
- Evaluation and understanding
- Accurate reporting

If requirements elicitation is done correctly, the dividends that get paid downstream in the project life cycle can be tremendous. It is like a series of interlocking puzzle pieces. The correct project requirements lead to an appropriate solution design. When the solution design is implemented and deployed, the requirements are still framing the work effort, keeping the team on track to meet the project stakeholder's needs and expectations.

When Does Elicitation Take Place?

I have noticed that even people who claim everything is predetermined and that we can do nothing to change it, look before they cross the road.

—Stephen Hawking

The tasks in the Elicitation and Collaboration knowledge area begin early in the project life cycle and typically peak during the more detailed requirements development phase of the project. Requirements can be elicited at any point in

the project life cycle. Typically, you elicit information for the first time early in the project life cycle. You will also find yourself eliciting information to clarify things you have missed or misinterpreted along the way. Changing requirements also trigger additional elicitation efforts later in the project life cycle.

Don't underestimate the importance of the work that gets done by these five tasks on your projects. Without the right requirements information from the right people, your project will probably not succeed. Let's step through the first task in the Elicitation and Collaboration knowledge area: preparing for a particular elicitation effort or activity.

Exam Spotlight

Approximately 12 percent (18 questions) of the 150 question-CBAP® exam questions focus specifically on Elicitation and Collaboration. On the CCBA™ exam, 20% (30 questions) focus on this knowledge area. The exam questions target specific and detailed aspects of the five tasks found in this knowledge area.

Prepare for Elicitation

The first task in the Elicitation and Collaboration knowledge area is where you prepare a detailed schedule of your elicitation activities. Your elicitation activities can include interviewing an individual face-to-face, creating a survey to send out to a thousand worldwide end users, or facilitating a group workshop of 15 people. Your preparation work should include the following:

- Defining the desired outcome for the elicitation activity
- Determining the work product or products to be produced
- Deciding the techniques to be used to produce the results
- Establishing the elicitation logistics
- Identifying supporting materials that are needed
- Planning to foster collaboration during the elicitation activity

This preparation step ensures that the necessary stakeholder resources are organized and scheduled in advance. This step also allows you to get all of your ducks in a row—from meeting room logistics to required materials to attendance and attention from the right people. [Figure 5.1](#) summarizes the inputs, guidelines and tools, outputs, techniques, and associated tasks used to prepare for requirements elicitation.

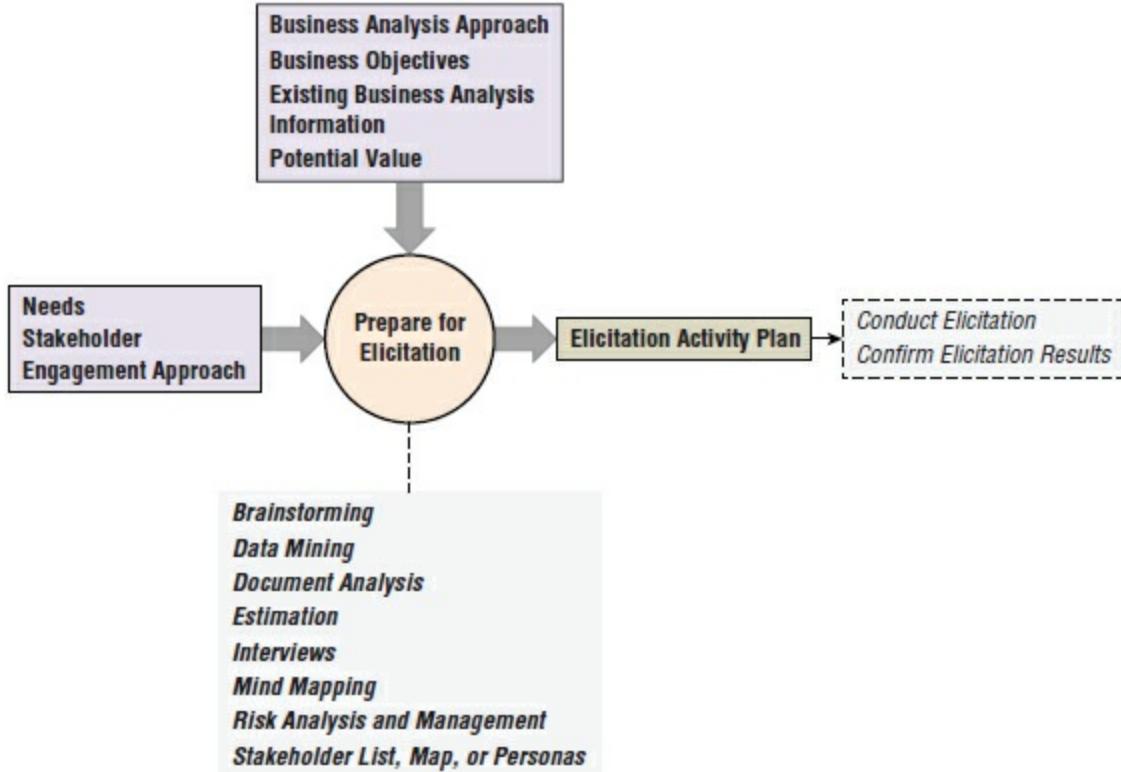


FIGURE 5.1 Task summary: Prepare for elicitation.

Several key inputs are needed to adequately prepare to elicit requirements information on your project. These key inputs are produced by a number of other business analysis tasks, and they include the needs and the stakeholder engagement approach. Let's take a look at each of these task inputs in greater detail:

Needs The business needs define the problem or opportunity being faced by the business. This information is used to determine the information to be elicited when developing business requirements early in the project life cycle. Elicitation is also used to discover and flesh out these needs early in your project.

Stakeholder Engagement Approach Planning and preparing for elicitation requires an understanding of how your stakeholders communicate and collaborate. The stakeholder engagement approach is a good place to start when you are ready to elicit business analysis information.

There are additional inputs that can be used during business analysis tasks: guidelines and tools. Guidelines are essentially instructions or descriptions on why and how a business analyst will undertake a task. Tools, on the other hand, are methods for conducting business analysis tasks or shaping a task output. Let's take a look at the guidelines and tools that can also be used as inputs when preparing for elicitation:

Business Analysis Approach The business analysis approach is a “one-stop shop” for the general strategy used to guide business analysis work on your project. The approach contains stakeholder information, any business analysis methodologies to be used, a high-level schedule, and the level of detail you will

be looking for in your resulting requirements and designs.

Business Objectives Requirements elicitation efforts focus on defining business capabilities to achieve a desired, future state. The direction these capabilities need to take is found in the business objectives.

Existing Business Analysis Information Existing information should not be overlooked during your requirements elicitation efforts. This information ranges from existing project documentation to requirements development methods you can use to understand the business.

Potential Value Be sure you understand and can articulate the value to be realized when the proposed future state is implemented.

[Table 5.2](#) summarizes the inputs, guidelines, and tools for this task and lists the source of each input (if applicable).

TABLE 5.2 Inputs: Prepare for elicitation.

Task Input	Input Type	Input Source	Source Knowledge Area
Needs	Input		
Stakeholder engagement approach	Input	Plan stakeholder engagement.	Business Analysis Planning and Monitoring
Business analysis approach	Guidelines and tools	Plan business analysis approach.	Business Analysis Planning and Monitoring
Business objectives	Guidelines and tools	Define future state.	Strategy Analysis
Existing business analysis information	Guidelines and tools		
Potential value	Guidelines and tools	Define future state.	Strategy Analysis

When preparing to elicit requirements information across the project life cycle, the business analyst should perform several elements, including the following:

- Understanding the scope of elicitation
- Selecting the elicitation techniques
- Planning the logistics of the elicitation
- Securing any supporting materials
- Preparing the stakeholders

Let's step through each of these five elements now:

Understanding Elicitation Scope Successful business analysts don't have time to waste eliciting information about topics that are outside of the scope of their defined effort. That said, it is important to understand the scope of the

future solution as well as focus on the exact boundaries of the information you plan to elicit in a particular elicitation activity.

Selecting Elicitation Techniques Typically, multiple techniques are used to elicit business analysis information. Business analysts are responsible for choosing the right techniques and applying those techniques correctly. When selecting elicitation techniques, look for techniques you have used in similar situations, techniques that are suited to the current situation, and the tasks necessary to use each selected technique properly.

Planning Elicitation Logistics Be sure to plan the logistics of your elicitation session ahead of time. In addition to creating an agenda for the session, the *BABOK® Guide* recommends that you identify the goals for the activity and provide a list of participants and their roles. Participants will also want to know the session location, the session schedule, and the tools and techniques that will be used.

Securing Supporting Materials Business analysts are responsible for identifying and procuring supporting materials needed for an elicitation activity. Required information may include specific people and what they know, or documented data about existing systems. There may be other elicitation results or analysis models from different facets of your project that are also needed.

Preparing Stakeholders Stakeholder understanding and buy-in is essential to successful elicitation. Many times, stakeholders are asked to review supporting materials prior to the elicitation activity. It is helpful to make sure your stakeholders understand the techniques you are using and the outcome the group is seeking.

Exam Spotlight

There are ways to add value when preparing for requirements elicitation on your projects. You should take the time to agree with the involved stakeholders about how you will provide them with feedback, verify the information, and then request their sign-off as you agree on the elicitation results. You should also make certain that you establish the ground rules up front for dealing with individuals and groups during the scheduled elicitation activities.

There are several techniques that you can choose to apply when preparing to elicit project requirements. One technique that we recommend is *brainstorming*, a creative, structured way to get everyone's brain contributing ideas as you plan what needs to take place and who needs to be involved. Let's take a look at this recommended technique in greater detail.

Recommended Technique: Brainstorming

Brainstorming fosters creative thinking about the capabilities of a new solution

across all levels of detail. Brainstorming enables out-of-the-box thinking in a nonjudgmental environment. Out-of-the-box thinking is also called *lateral thinking*.

Using brainstorming as an elicitation technique produces numerous new ideas from the people involved. If you haven't used brainstorming as part of your requirements elicitation efforts, you should try it. You can draw on the experience and creativity of the participants in your brainstorming session, yielding a plethora of interesting and relevant results that require further analysis.

A productive brainstorming session has two parts: *idea generation* and *idea reduction*. Idea generation is the creative part where people share their ideas with one another, no matter how off the wall those ideas might be. Idea reduction is where the group takes the generated ideas and cleans them up a bit to make the information useful for the situation at hand.

Preparing for a brainstorming session involves defining the session itself, including the particular area of interest for the session and the amount of time that will be spent by the participants. A longer brainstorming session is needed for larger groups of people. The ideal brainstorming session contains six to eight people.

Other logistics need to be determined prior to the session start. The session's facilitator and participants need to be selected. Expectations for the session should also be defined, focusing on the area of interest. The evaluation and rating criteria for the idea reduction step should also be set and agreed to in advance.



Over the years, we have found that the success of a brainstorming session depends on the willingness of the participants to actually participate and contribute. It is essential that ideas not be debated during idea generation in order to maximize contributions from the group. Personal feelings and organizational politics need to be set aside during the session in order to achieve the best results.

Once the ideas are generated and recorded, they need to be analyzed and reduced to something useful. Wrapping up is where the idea reduction part of a brainstorming session takes place. The group discusses and evaluates ideas using the evaluation and rating criteria that were previously defined and agreed upon by the group as part of the meeting. Combining some ideas, deleting some ideas, and eliminating any duplicate ideas will build a condensed list. The resulting list will then be distributed to the appropriate parties for review.

Additional Techniques to Consider

There are many additional techniques to choose from when you find yourself

preparing to elicit business analysis information on your projects. Let's step through each of them here.

Data Mining This technique helps you to identify information or patterns from existing data that require further investigation during your planned elicitation activity.

Document Analysis Use document analysis to analyze existing documents and supporting materials that might be helpful as part of the requirements elicitation process.

Estimation Estimating the cost and effort to elicit business analysis information gives you a good idea of just what needs to be done and what getting the work done will take.

Interviews Business analysts use interviews as part of elicitation preparation so they can identify concerns about the planned elicitation and seek authority to proceed when necessary.

Mind Mapping Mind mapping is a visual, nonlinear, collaborative way to discover the sources of business analysis information that you need and which elicitation techniques might be most effective in a given situation.

Risk Analysis and Management Risk analysis and management techniques determine the level of risk associated with eliciting business analysis information. Elicitation plans may be designed or changed to eliminate or minimize significant risks.

Stakeholder List, Map, or Personas This stakeholder data is used to determine who should be consulted during elicitation preparation and who should be involved with the actual solicitation activity.

Once you have selected and applied one or more techniques as part of your preparation efforts, you are ready to plan the elicitation activity itself. We will discuss that next.

Produce the Elicitation Activity Plan

The elicitation activity plan defines both the logistics and scope of a specific elicitation activity. The logistics for the elicitation activity include the *scheduled resources* and the *supporting materials*. The scheduled resources are exactly what they sound like—the people, facilities, and equipment that you need for requirements elicitation. The resource schedule should include the resource name or names, the location of the elicitation activity, and anything else that might be needed.

Supporting materials are anything that you need in order to perform the elicitation activity. These materials could be required for a particular elicitation technique, such as having a whiteboard available for a requirements workshop.



Real World Scenario

Palmer Divide Vineyards Elicitation Worksheet

The IT staff at the vineyard has a long history of projects that don't go according to plan. Almost every effort is over budget and behind schedule. The team has been assessing their current project practices in order to achieve more successful results. Taylor, the head of IT, has decided that this has gone on for long enough. She is determined to put project management processes in place that enable better project outcomes and less rework.

One area of weakness is the team's approach to requirements development. In the past, senior management has been reluctant to allot much time for defining what needs to be done. They ask, "When will you guys be doing the real work and producing something useful?"

For the research study project, Taylor and the team have defined a simple requirements development process that they plan to follow. Senior management has agreed to allot them the extra time to define requirements before the design and coding efforts begin.

One step in Taylor's process is requirements elicitation. She believes that gathering the right information from the right folks makes all the difference. Even though the vineyard is a small company, there are many opinions on what needs to be done and what is most important. Taylor hopes to harness that information and target defining high-quality requirements for this and every subsequent project.

Taylor and the team have decided to plan their elicitation efforts thoroughly. They are using an information-gathering worksheet to document the questions they want to ask and the methods they want to use to gather that information. The team plans to ask the same question more than once and to organize the results by question for further analysis and decision making. Taylor is correct in assuming that this will be the first step in a more robust, well-planned requirements elicitation effort at Palmer Divide Vineyards.

Business analysts often like to use a worksheet to plan their elicitation efforts and get a handle on the questions they will be asking. [Table 5.3](#) provides an example of a requirements elicitation worksheet populated for a round of solution requirements elicitation at Palmer Divide Vineyards. You can use questions and apply techniques, as shown here, or add additional information to your worksheet based on your organization and the nature of your project.

TABLE 5.3 Palmer Divide Vineyards elicitation worksheet

Palmer Divide Vineyards Green Project		
Elicitation Questions	Whom to Ask	Technique(s) to Apply

1. What current research study activities do you currently perform?	Hector (marketing director) Sawyer (vineyard manager) Dan (winemaker, SME) Ginger (product manager) Taylor (IT manager)	Interviews (individual) Requirements workshop (entire group) Document analysis of existing capabilities Observation
2. What are your job responsibilities?	Hector, Sawyer, Dan, Ginger, Taylor	Interviews (individual) Requirements workshop (entire group)
3. What are the most important activities the new research study capabilities should address?	Hector, Sawyer, Dan, Ginger, Taylor	Interviews (individual) Requirements workshop (entire group)
4. What is the prioritization of your research study needs?	Hector, Sawyer, Dan, Ginger, Taylor	Interviews (individual) Requirements Workshop (entire group)
5. If you could change two or three things about your existing research study activities, what would you change?	Hector, Sawyer, Dan, Ginger, Taylor	Interviews (individual) Requirements workshop (entire group)
6. What better, new, or different information do you need to perform research studies for the vineyard?	Hector, Sawyer, Dan, Ginger, Taylor	Interviews (individual) Requirements workshop (entire group)
7. What system functionality do you use? Not use?	Hector, Sawyer, Dan, Ginger, Taylor	Interviews (individual) Requirements Workshop (entire group)
8. What capabilities do you think the new solution should provide for others? Why?	Hector, Sawyer, Dan, Ginger, Taylor	Interviews (individual) Requirements workshop (entire group)
9. What activities will you perform using the new solution?	Hector, Sawyer, Dan, Ginger, Taylor	Interviews (individual) Requirements workshop (entire group)
10. From your point of view, what are the key new requirements for the research study aspects of the solution? Why?	Hector, Sawyer, Dan, Ginger, Taylor	Interviews (individual) Requirements workshop (entire group)

An *elicitation worksheet* helps you define your elicitation activity objectives and

allows you to prepare your questions ahead of time and review them. By thinking through your questions and documenting them in this way, you are also setting the basis for organizing your elicitation results.

Once you have completed your elicitation preparation, it is time to go get the information that you need from your stakeholders. [Table 5.4](#) shows the outputs from your elicitation preparation activities that you will use to get the work done.

TABLE 5.4 Output: Prepare for elicitation.

Output	Output Destinations	Destination Knowledge Area
Elicitation activity plan	Conduct elicitation.	Elicitation and Collaboration
	Confirm elicitation results.	Elicitation and Collaboration

As a business analyst, you are responsible for adequate requirements elicitation preparation. On large projects, this responsibility often falls to the collective members of the business analysis team, who will be simultaneously eliciting requirements information from different stakeholders. Be sure to coordinate who is doing what, when, and make sure you plan to sit down and accumulate what everyone has learned. Any business analysis stakeholder can be involved in requirements elicitation. The project manager, domain SMEs, and the project sponsor may also be involved in the elicitation prep work.

Now, let's take a look at the next step in effective requirements elicitation—successfully conducting the elicitation activity.

Conduct Elicitation

There are a number of ways to elicit requirements for your projects. The most common elicitation technique is a face-to-face meeting with one or more of your project stakeholders to gather information regarding their needs. However, elicited information doesn't have to come directly from people. It can also come to you indirectly, based on your research and review of existing documents and other data.

Exam Spotlight

The *BABOK® Guide* lists three common types of elicitation: collaborative, research, and experiments. Make sure you can recognize each type of elicitation for the exam.

- Collaborative elicitation involves direct interaction with stakeholders and relies on their experiences, expertise, and judgment.
- Research involves systematically discovering and studying information

from materials or sources not directly known by stakeholders involved in the change, such as analyzing historical data trends.

- Experiments involve identifying information that could not be known without some kind of controlled test, using observational studies, proofs of concept, and prototypes.

Stakeholders may collaborate during elicitation by participating in the actual elicitation activity or by researching, studying, and providing feedback on documents, systems, models, and interfaces related to the activity and its results.

[Figure 5.2](#) summarizes the inputs, outputs, techniques, and associated tasks used to conduct requirements elicitation.

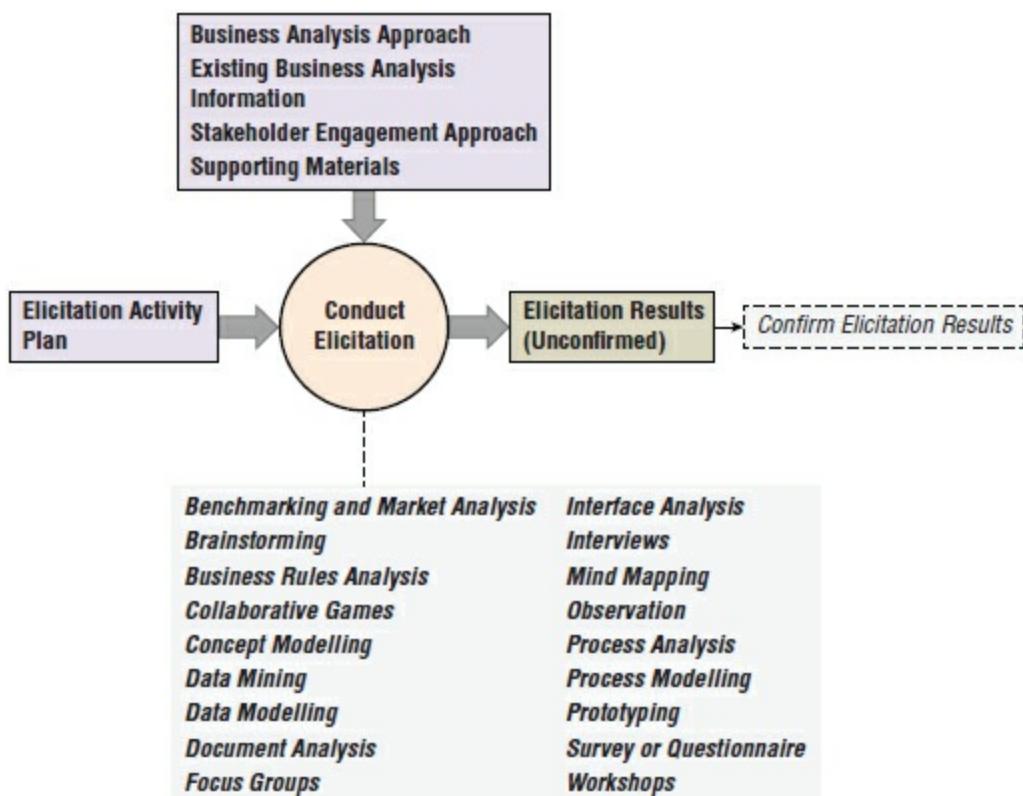


FIGURE 5.2 Task summary: Conduct elicitation activity.

Several key inputs, guidelines, and tools are needed when eliciting requirements information. The primary input to this task is the planning you did in the previous task when preparing for elicitation.

Elicitation Activity Plan The elicitation activity plan defines both the logistics and scope of a specific elicitation activity. The logistics for the elicitation activity include the scheduled resources and the supporting materials. This plan was created by the Prepare for Elicitation task in the Elicitation and Collaboration knowledge area that we just covered in the previous section.

There are additional inputs that may be used by business analysis tasks: guidelines and tools. Let's take a look at the guidelines and tools that may also

be used as inputs when conducting elicitation:

Business Analysis Approach The business analysis approach is a “one-stop shop” for the general strategy used to guide business analysis work on your project. The approach contains stakeholder information, any business analysis methodologies to be used, a high-level schedule, and the level of detail you will be looking for in your resulting requirements and designs.

Existing Business Analysis Information Existing information should not be overlooked during your requirements elicitation efforts. This information ranges from existing project documentation to requirements development methods you can use to understand the business.

Stakeholder Engagement Approach This approach provides the business analyst with stakeholder preferences for collaboration and communication that may be helpful when eliciting information.

Supporting Materials These materials are used to prepare the business analysis team and the stakeholders prior to an elicitation activity and may be reviewed prior to the event. Supporting materials also include information, tools, or equipment used as part of the elicitation itself.

[Table 5.5](#) summarizes the inputs, guidelines and tools to this elicitation task and lists the source of each input (if applicable).

TABLE 5.5 Inputs: Conduct elicitation.

Task Input	Input Type	Input Source	Source Knowledge Area
Elicitation activity plan	Input	Prepare for elicitation.	Elicitation and Collaboration
Business analysis approach	Guidelines and tools	Plan business analysis approach.	Business Analysis Planning and Monitoring
Existing business analysis information	Guidelines and tools		
Stakeholder engagement approach	Guidelines and tools	Plan stakeholder engagement.	Business Analysis Planning and Monitoring
Supporting materials	Guidelines and tools		

There are several elements that you should perform when eliciting project requirements information across the project life cycle, including the following:

- Guiding the elicitation activity
- Capturing elicitation outcomes

Let's look at each element in greater detail:

Guide Elicitation Activity Experienced business analysts follow their elicitation plan to navigate the actual elicitation activity. This approach keeps

things on track by focusing on gathering business analysis information at the required level of detail. Remember that things can change once elicitation is underway; being flexible and adaptable relative to your elicitation plan is also an essential skill. Keep an eye out for when you have gathered enough information.

Capture Elicitation Outcomes Eliciting requirements is an iterative and incremental activity. Elicitation outcomes are captured and integrated into the planned outcomes and what the business analysis team already knows. Recording business analysis information during elicitation is essential for later reference, integration, and use.

The *BABOK® Guide* contains numerous elicitation techniques that you should be able to use as needed. Each technique is an excellent way to elicit requirements. The technique you choose should be the best fit for the situation that you find yourself in. For instance, scheduling telephone interviews with 100 individual users is not time effective. Building a survey/questionnaire to send to them combined with a requirements workshop for a selected subset of senior or key users may be a better approach to gathering information.

There are several techniques that you may choose to apply when prioritizing your project requirements. Two techniques that we recommend for eliciting requirements are focus groups and prototypes. Let's take a look at these recommended techniques in greater detail.

Recommended Technique: Focus Groups

Focus groups provide you with an interactive group environment to elicit ideas and attitudes from selected stakeholders about a product, service, or opportunity. The work done in a focus group may be similar to a brainstorming session, but a focus group is a more structured event. Focus groups are a form of qualitative research in which your participants are prequalified to address a set of questions about a particular topic.



Real World Scenario

Getting Things in Focus

Ginger was assigned the task of eliciting business requirements for the senior management team of an overseas bank. She enjoyed her trip across the ocean and really looked forward to facilitating several focus group sessions that targeted the definition of and the agreement to the business requirements for developing a new IT system. Ginger believed this was going to be an interesting and rewarding consulting assignment. She was right.

The initial focus group session kicked off mid-morning on Tuesday. Ginger, in her role as moderator, arrived early to make sure the room was arranged correctly and that all required materials were available to share with the

attendees. She made certain that the room was arranged in the traditional U-shape that many facilitators prefer. This arrangement would allow Ginger to facilitate effectively by walking the inside of the tables to make points, clarify issues, and minimize any conflicts.

This particular group was a heterogeneous set of vice presidents from the numerous operating units at the bank. The discussion guide for this session focused on the high-level business drivers justifying the project and the big-picture capabilities that would be required. Everyone arrived pretty much on time, dressed for success. The coffee was poured into lovely ceramic mugs with the bank logo on them, breakfast treats were selected, introductions were made, and the focus group was off and running.

About an hour into the session, it became apparent to Ginger (and everyone else in the room) that two of the vice presidents had conflicting opinions about the definition of the new system capabilities. They were sitting right across the tables from one another. Voices were rising, and the conflict began to escalate. Ever the well-trained facilitator, Ginger walked briskly down the tables in order to physically stand between them and shut down their conflict.

Just as Ginger stepped between them, one of the angry vice presidents threw his coffee cup across the table right at the other fellow. Alas, that coffee cup never got to the other fellow—it hit Ginger in the face. The room went very still as the cup fell to the floor. Ginger knelt down, picked up the cup, and stood back up.

“Well,” she said, “Let’s get on with things, shall we?”

She then moved on to the next topic in her discussion guide.

Funny thing, there were no more conflicts in that particular focus group. Even funnier, there were no conflicts in the sessions that followed. The business requirements for the project were defined and agreed upon, and the project was off and running. After she got back home, Ginger found herself wondering if it was her strong facilitation skills that made those focus groups go so very well or if it was her black eye that got everyone’s undivided attention during the rest of the week.

Focus group preparation requires you to select and recruit the right participants for the session. The *BABOK® Guide* recommends a focus group size of 6 to 12 attendees. A moderator and a recorder for the session should also be assigned ahead of time. It is essential that your focus group be guided by a trained moderator. In many organizations, the trained moderator is the business analyst. The moderator creates a discussion guide defining the goals and objectives of the session and five or six questions to be discussed. The focus group location and any necessary technical services also need to be set up in advance.

The focus group should be conducted in a one-to-two-hour session. The moderator is responsible for guiding the discussion using the discussion guide as a road map. The recorder is responsible for capturing the group’s comments.

It is not advisable for the moderator to be the recorder—it is quite difficult to facilitate a focus group and take notes at the same time. An alternative is to make audio and/or video recordings of the focus group.



Focus groups may contain homogeneous or heterogeneous participants. Homogeneous participants all have similar characteristics; heterogeneous participants have diverse backgrounds. For example, a homogeneous focus group may consist of key end users who deal with the order entry aspect of the business, discussing the order entry capabilities for a new solution. A heterogeneous focus group would be one with a cross section of end users from all aspects of the business being present to discuss those very same order entry capabilities from multiple perspectives.

After the session is complete, the moderator is responsible for analyzing and documenting the session results. A key output is group themes and perspectives. This captures agreements, as well as disagreements, in the areas being discussed. The moderator produces the report and sends that report to key stakeholders, business analysts, or marketing staff.

Recommended Technique: Prototyping

Prototyping is a great way to add detail to your solution interface requirements and integrate those requirements with the other requirements defining the new solution. Essentially, a prototype is an initial or preliminary version of a solution or system.

Prototypes are extremely valuable for identifying, describing, and validating your solution needs during requirements development. There is tremendous value in allowing early user interaction and feedback with a new solution. For software projects, mocked-up screens or report layouts allow users to interact with and comment on the solution.

Two categories of prototypes are defined in the *BABOK® Guide*: *throw-away prototypes* and *evolutionary or functional prototypes*. Let's take a closer look at each category:

Throw-Away Throw-away prototypes are built to uncover and identify solution requirements using simple tools. These tools can be paper based or computer based. A throw-away prototype is intended to be discarded after the final system is complete. These prototypes don't have anything much under the covers that would be of operational use. Throw-away prototypes are used to gather requirements information.

Evolutionary or Functional Evolutionary prototypes are built to be the basis for the new fully functioning system. To use them in this way, the prototypes must be built using a specialized prototyping tool or language. They ultimately become the working software application that is part of the solution.

Evolutionary prototypes are also called functional prototypes.

Exam Spotlight

There are two significant decisions for you to make when using prototyping as a requirements elicitation vehicle:

- Do you use a throw-away prototype (discard after system developed) or an evolutionary/functional prototype (becomes all or part of the system)?
- Do you use a vertical perspective (narrow detailed area) versus a horizontal point of view (broad brush of all capabilities at a very high level)?

To prepare for prototyping, you must clearly identify the functionality that will be modelled and select your prototyping approach. Then, build the prototype in an iterative fashion, adding details as appropriate. It is important to make sure that the elements of the prototype can be traced back to the solution requirements, such as processes, data rules, and business rules. Prototypes are intended for end users, so make sure the prototype actually meets their needs for the new solution.



Real World Scenario

Throw-Away Does Not Mean Keep

Phil, the business analyst, frequently uses throw-away prototypes for his user-facing software systems. He believes (and rightfully so) that prototyping the user interface is a great way to get input before spending enormous amounts of time and effort in actual system development and implementation. As Phil is fond of saying to his team, end users sure seem to know what they don't like when they see it. By using a throw-away prototype or storefront, Phil is frequently able to get a handle on the user's interaction with the new system and discover their likes and dislikes.

While working on developing a software system for a large telecommunications firm, Phil determined that prototyping was the best approach to use for elicitation. The development team built a storefront prototype of an online store and then scheduled meetings with users of the eventual system and those who received the outputs from the proposed new application.

Phil's experience was interesting to say the least. The users spent hours making suggestions on layout, color, and error messages. They concentrated on the human interface pieces of the system. They didn't say a word to Phil

or to the team about the functionality behind the user screens. The higher-level managers didn't say too much about the storefront's functionality either. They took one look at the screens and beamed, "Nice work, you finished the application ahead of schedule!"

As Phil and his team learned, it is easy to get burned in your throw-away prototyping efforts. Remember to make sure that the folks interacting with the prototype are consistently made aware that this particular prototype is just a shell, not the actual process or system. That way, they won't be surprised to learn that the throw-away prototype will be discarded (hence the name *throw-away*), and the system will be designed and developed using enhanced requirements based on the prototyping efforts. Keep reminding everyone that throw-away prototypes typically don't have much substance hidden under the mocked-up user interface covers.

There are many forms of prototypes in use today. [Table 5.6](#) describes each form for you.

TABLE 5.6 Forms of prototypes

Form	Description
Proof or Principle or Concept	Validates the design of a system without modelling appearance, materials, or process flow
Form Study	Explores basic size, look, and feel of a product without creating actual functionality
Usability	Addresses how the end user interacts with the system without including any properties
Visual	Shows the visual aspects of the solution without modelling complete functionality
Functional	Tests software functionality, system qualities, and workflow in a working model

Your goal when building a prototype is developing an end-to-end understanding with your end users (and for yourself) of how the solution or part of a solution actually works.

Other Techniques to Consider

The *BABOK® Guide* lists some additional techniques that may be used when conducting elicitation. They are summarized for you here:

Benchmarking and Market Analysis Benchmarking studies are a source of business analysis information, comparing an aspect of the solution with an external baseline. Market analysis is a mechanism for determining what external customers want and what your competition provides.

Brainstorming This technique is used during elicitation to generate many ideas from a stakeholder group in a short period of time. The resulting ideas can then be organized and prioritized relative to the targeted elicitation activity

outcome and what is currently known.

Business Rules Analysis When eliciting business analysis information, business analysts must discover and factor in how decisions are made in the organization and the rules governing organization operations.

Collaborative Games Collaborative games, such as product boxes, affinity maps, and fishbowls, help groups of stakeholders develop a better understanding of a problem or stimulate creative solutions to a problem.

Concept Modelling Concept models identify key terms and ideas of importance, and the relationships between the two.

Data Mining Data mining is an analytical way to identify relevant information and patterns from data. This technique examines and summarizes large amounts of data from different perspectives.

Data Modelling Data modelling defines entity relationships during elicitation activities using a diagram and textual descriptions of the pieces and parts.

Document Analysis Document analysis allows the business analyst to review documented information about existing systems, contracts, policies, procedures, standards, and regulations.

Interface Analysis This technique focuses on understanding the interaction between two entities, such as systems, organizations, or individual roles.

Interviews Interviews involve asking questions of stakeholders to uncover needs, identify problems, or discover opportunities during the requirements elicitation process.

Mind Mapping Mind mapping is a visual, nonlinear collaborative way of generating, organizing, and prioritizing many ideas from a group of stakeholders.

Observation Watching people do their work is an excellent way to gain insight about how the work is actually done.

Process Analysis Process analysis focuses on understanding the current processes and identifying opportunities to improve those processes as part of an elicitation activity.

Process Modelling Process modelling is a way to understand and think about improving processes with stakeholders during elicitation activities.

Survey or Questionnaire Surveys and questionnaires allow the business analyst to elicit business analysis information about customers, products, work practices, and attitudes in a structured way from a group of stakeholders.

Workshops Workshops are a collaborative and facilitated way to elicit information about customers, products, work practices, and attitudes from a stakeholder group.

Exam Spotlight

A great many questions for the Elicitation knowledge area will focus on the details of how you apply the elicitation techniques. Make sure you are very familiar with the details of these techniques.

Think of each recommended elicitation technique as a three-step process: prepare, conduct, and wrap-up. [Figure 5.3](#) illustrates the sequence of the steps for you. First, you prepare to use the technique you have chosen for eliciting requirements. The preparation activities will be driven by the technique you have selected. Then, you conduct the elicitation activity and use the selected technique in the appropriate way. After the elicitation activity is done, you then are responsible for wrapping things up by reviewing, reporting, and, as needed, further investigating what you have learned.

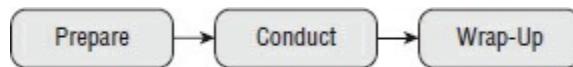


FIGURE 5.3 Applying the elicitation techniques

Now let's get back to the task at hand: conducting the elicitation activity. Once you have conducted that activity, you are ready to produce the elicitation results that document what your stakeholders have told you. We will discuss that task output next.

Produce the Elicitation Results

The *elicitation results* are just what the name says: the informally documented results of your requirements elicitation efforts. These might be your informal notes, scribbles, and pictures representing what you have been told. Your informal elicitation results are then used as input to the confirm elicitation results task. [Table 5.7](#) summarizes this transaction.

TABLE 5.7 Output: Conduct elicitation activity.

Output	Output Destinations	Destination Knowledge Area
Elicitation results (unconfirmed)	Confirm elicitation results.	Elicitation and Collaboration

As the project business analyst, you have the primary responsibility for informally documenting your elicited project requirements information. The format that you select depends on the information you are documenting. You may use text, graphical models, or a combination of the two. The technique or techniques you selected to elicit requirements may also play a role in how the elicitation results are informally collected. Other business analysis stakeholders might be involved with providing the business analyst with the requirements information that they are seeking.

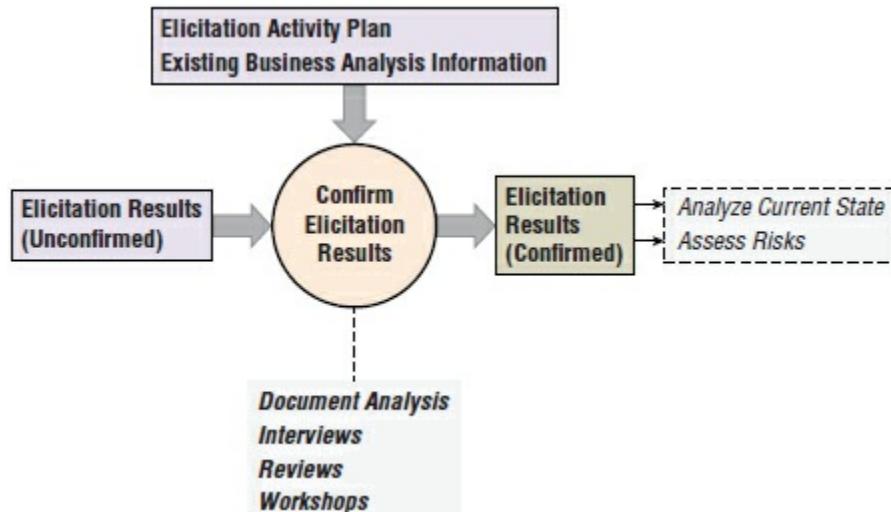
Let's take a look at the next step in effective requirements elicitation—confirming your elicitation results.

Confirm Elicitation Results

The third task in the Elicitation and Collaboration knowledge area is confirming the results of your elicitation activities. Elicited business analysis information is checked for accuracy and consistency. Any identified errors, omissions, conflicts, or ambiguity are resolved prior to using the elicited information. Often, we find that additional elicitation and stakeholder collaboration is required to resolve these discrepancies. This important step ensures that you clearly understand the stakeholder intentions and any related issues that might impact your requirements and your project. You must make sure that you involve all stakeholders who participated in the elicitation event in this confirmation step.

According to the *BABOK® Guide*, confirming elicitation results is a less rigorous and less formal review than what takes place during analysis.

[Figure 5.4](#) summarizes the inputs, guidelines, tools, outputs, techniques, and associated tasks used to confirm the elicitation results.



[FIGURE 5.4](#) Task summary: Confirm elicitation results.

One key input is required to confirm the elicitation results—the elicitation results themselves. Additional guidelines and tools can also be used. Let's take a look at this key input in more detail:

Elicitation Results Elicitation results are the stated and unconfirmed requirements that represent the business analyst's documented understanding of the stakeholder's intentions. They were obtained using one or more elicitation techniques. This information has yet to be reviewed with the involved stakeholders to make sure everything is correct and complete. This information may also include risks, assumptions, and constraints to be confirmed and addressed by the business analyst.

[Table 5.8](#) summarizes the inputs, guidelines, and tools used by this task.

[TABLE 5.8](#) Inputs: Confirm elicitation results.

Task Input	Input Type	Input Source	Source
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			Knowledge Area
Elicitation results (unconfirmed)	Input	Conduct elicitation.	Elicitation and Collaboration
Elicitation activity plan	Guidelines and tools	Prepare for elicitation.	Elicitation and Collaboration
Existing business analysis information	Guidelines and tools		

Guidelines and tools are additional inputs that can also be used by business analysis tasks. Let's take a closer look at the guidelines and tools that can also be used as inputs when confirming the elicitation results:

Elicitation Activity Plan Elicitation activity plans are created as part of preparing for elicitation. They provide the business analyst with guidance regarding techniques to be applied, questions to be asked, and the general scope of a particular elicitation effort.

Existing Business Analysis Information Existing business analysis information should not be overlooked during your requirements elicitation efforts. This information ranges from existing project documentation to previously elicited information and requirements to requirements development methods you can use.

When confirming requirements information, the business analyst performs two elements of this task, which are as follows:

- Comparing elicitation results against source information
- Comparing elicitation results against other elicitation results

Let's step through each of these elements now:

Comparing Elicitation Results Against Source Information Elicitation results can come from a number of sources, including existing documents and your project stakeholders. Many times, business analysts schedule follow-up meetings to review elicitation information for correctness and completion against one or more of these sources. Key stakeholders may also be asked to review and confirm elicitation results independently.

Comparing Elicitation Results Against Other Elicitation Results Consistency is an attribute of well-formed and accurate requirements. To achieve consistent elicitation results that become confirmed requirements, business analysts often compare the results against the results of other elicitation activities. Differences are then collaboratively discussed and resolved with the stakeholders and the team. Comparisons can also be made to historical data or existing specifications or models.

Techniques to Consider

The *BABOK® Guide* recommends one or more techniques when confirming elicitation results with stakeholders. Let's take a look at them now in greater detail:

Document Analysis Use document analysis to confirm elicitation results against existing documents, source information, and other elicitation results.

Interviews Interviews are used to confirm business analysis information with stakeholders at any level of detail. This technique is particularly helpful when you are combining and integrating what you have learned to build the confirmed requirements.

Reviews Formal and informal reviews are a way to confirm elicitation results with stakeholders, either individually or in groups.

Workshops Workshops are another collaborative way to confirm elicited information. Walking through elicitation results in a more structured fashion with stakeholders allows for their feedback and correction.

Producing the Confirmed Elicitation Results

Think of the unconfirmed elicitation results as raw stakeholder information; your stakeholders tell you what they think is needed. Stakeholder concerns are any stakeholder issues that arise from your elicitation activities. They can be many things, such as risks, assumptions, and constraints that accompany the requirements information you are gathering. Once these concerns are captured and documented, they will need to be addressed by the business analysis team.

Any stakeholder can be involved with confirming elicitation results, as needed. Domain SMEs often bring their knowledge and experience to the table relative to specific business analysis information that has been elicited relative to a specific change.

[Table 5.9](#) summarizes the full set of tasks using the confirmed elicitation results.

TABLE 5.9 Output: Confirm elicitation results.

Output	Output Destinations	Destination Knowledge Area
Elicitation results (confirmed)	Analyze current state.	Strategy Analysis
	Assess risks.	Strategy Analysis

Now let's take a look at the next step in effective requirements elicitation—effectively communicating business analysis information.

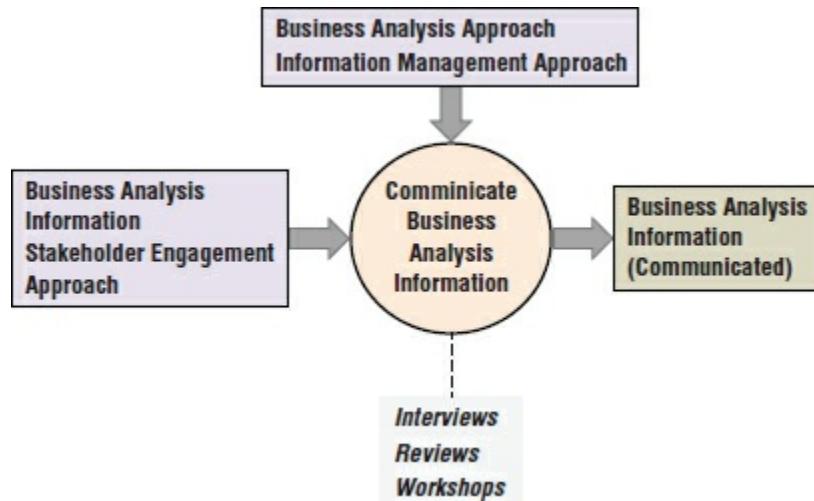
Communicate Business Analysis Information

Much of the work that you perform as part of the Elicitation and Collaboration knowledge area gets your project requirements information elicited, organized, and structured appropriately. After the business analysis information is in good shape, don't forget to share that information with key stakeholders for their review, understanding, and approval. This task holds you responsible for effectively communicating requirements to ensure stakeholder understanding.

Communicating business analysis information tends to be bidirectional,

iterative, and ongoing in nature. It is usually done in parallel with most of the other business analysis tasks found in the *BABOK® Guide*. Communication can be formal or informal in nature and includes conversations, notes, documents, presentations, and discussions with your stakeholders.

[Figure 5.5](#) summarizes the inputs, guidelines, tools, outputs, techniques, and associated tasks for effectively communicating business analysis information on your projects.



[FIGURE 5.5](#) Task summary: Communicate business analysis information.

Several key inputs are used when communicating business analysis information during a project. These inputs are usually produced by activities performed by other business analysis tasks. Let's take a closer look at these inputs:

Business Analysis Information The business analyst is responsible for determining which business analysis information needs to be communicated to and understood by the stakeholders. Information can be packaged and communicated to stakeholders at any point in the requirements development process.

Stakeholder Engagement Approach The stakeholder engagement approach defines how to communicate about business analysis activities, elicited information, and deliverables with your stakeholders. Your focus is on the requirements development tasks and the resulting deliverables.

There are additional inputs that may be used by business analysis tasks: guidelines and tools. Guidelines are descriptions of why and how a business analyst will undertake a task. Tools are methods for conducting a business analysis task or shaping a task output. Let's take a look at the guidelines and tools that may also be used as inputs when communicating elicitation information:

Business Analysis Approach The business analysis approach is a “one-stop shop” for the general strategy used to guide business analysis work on your project. The approach contains stakeholder information, any business analysis methodologies to be used, a high-level schedule, and the level of detail you will be looking for in your resulting requirements and designs.

Information Management Approach This approach determines how business analysis information will be stored, packaged, and communicated to your stakeholders.

[Table 5.10](#) summarizes the inputs to the business analysis task of communicating requirements and lists the source of the input (if applicable).

TABLE 5.10 Inputs: Communicate business analysis information.

Task Input	Input Type	Input Source	Source Knowledge Area
Business analysis information	Input		
Stakeholder engagement approach	Input	Plan stakeholder engagement.	Business Analysis Planning and Monitoring
Business analysis approach	Guidelines and tools	Plan business analysis approach.	Business Analysis Planning and Monitoring
Information management approach	Guidelines and tools	Plan business analysis information management.	Business Analysis Planning and Monitoring

You need to perform two elements that are part of this task in order to effectively communicate business analysis information to stakeholders and make sure they understand that information. The two elements are:

- Determine the objectives and format of communication.
- Communicate the business analysis package.

Let's step through each of these elements now:

Determine Objectives and Format of Communication Formal communication of business analysis information is done using *business analysis information packages*. These packages are used to communicate requirements, designs, quality, solution design inputs, and formal reviews and approvals. Informal communication takes place whenever it is needed.

Business analysts develop packages to effectively share information with stakeholders about planned changes. It is essential to analyze the audience for the business analysis information package and make sure they can understand the information that is being shared. Packages can be stored in online or offline repositories.

Exam Spotlight

According to the *BABOK® Guide*, business analysis information packages are used for many reasons, including the following:

- Communicating requirements and designs information to stakeholders
- Assessing early quality and planning
- Evaluating possible alternatives
- Reviewing and approving proposed changes
- Providing inputs to solution design
- Conforming to contractual and regulatory obligations
- Maintaining requirements and designs for reuse

Business analysis information packages can be formal documents, informal documents, or presentations. They should fit both the audience and the situation. Business analysts are expected to have good presentation skills. These skills include creating the presentations, as well as delivering them to the stakeholders.

Formal documents are usually based upon a template used by the organization and may include text, matrices, or diagrams. Formal documents are saved and typically become part of the long-term information record for the project. Informal documents are used during a change but are not part of the formal organizational process.

Communicate Business Analysis Package Business analysts are expected to provide stakeholders with details about the change so the stakeholders can understand the information. Communicating this information allows stakeholders to review the package, ask questions, and raise any issues pertaining to what they have read.

Common ways to communicate business analysis information packages include group collaboration, individual collaboration, and email or other nonverbal methods. Group collaboration allows for immediate discussion and feedback from a group of stakeholders regarding the package contents. Individual collaboration is a one-on-one review of the package between the business analysts and a single stakeholder. Nonverbal methods such as email are used when the information is clear and few questions or explanations are expected.

Techniques to Consider

The *BABOK® Guide* recommends three techniques for communicating requirements with stakeholders: *interviews*, *reviews*, and *workshops*. Let's summarize each of these techniques.

Interviews Interviews are typically used when communicating the contents of a business analysis information package to a single stakeholder in a one-on-one setting. This facilitates individual understanding of the information.

Reviews Reviews allow a group of stakeholders to understand the contents of a business analysis information package and provide feedback on the contents. Reviews are also used when approvals for a change are being sought.

Workshops Requirements workshops are structured meetings where a group

of stakeholders works together to provide feedback and approval of a business analysis information package. This technique is typically used during group collaboration.

Once you have applied one or more of the recommended techniques to communicate your business analysis information, you can say that the business analysis information has been communicated. Remember that communicating business analysis information ensures that the stakeholders understand what they have been told. Let's review the concept of communicating business analysis information one more time.

Communicating Business Analysis Information to Your Stakeholders

Once you have decided how to approach formally or informally documenting business analysis information, you are ready to communicate the information to your stakeholders. Remember that the communicated business analysis information is not just transmitted from the business analyst to the stakeholders. It must be received, understood, and acknowledged by those stakeholders in order for effective business analysis information communication to have taken place. There is no standardized output trail.

The business analyst has the primary responsibility for communicating business analysis information during requirements development activities on a project. However, all business analysis stakeholders may have a role in this task and could be involved with business analysis information communication activities across the project life cycle. Typical stakeholder roles involved with this activity include end user, customer, domain SME, implementation SME, and tester. They may be a sender or a receiver of the communicated information.

Now let's take a look at the next step in effective requirements elicitation and collaboration—effectively managing stakeholder collaboration.

Manage Stakeholder Collaboration

Confirming the elicitation results is not enough. Effective business analysts foster a spirit of collaboration and teamwork with their stakeholders across the project life cycle. Business analysis work does not take place in a vacuum. Business analysis efforts require significant collaboration as work products are defined, documented, reviewed, revised, and approved. Business analysts should strive to minimize risk and maximize positive reactions by keeping the right people “in the loop” relative to business analysis information and work activities.

Managing stakeholder collaboration is an ongoing task for the business analyst. As work moves forward, stakeholders are identified, their roles are confirmed, and they receive communications at the right time about the correct topics. New stakeholders can be identified at any point in time and must be incorporated into the collaborative work environment the business analyst has created. Stakeholders can also wear many hats on a project, taking on multiple roles as the project progresses.



NOTE According to the *BABOK® Guide*, business analysts should strive to actively manage relationships with stakeholders who:

- Provide services to the business analyst.
- Depend on services provided by the business analyst.
- Participate in the execution of business analysis tasks.

It is essential to maintain good working relationships with the key stakeholders on your project. Poor relationships can result in low-quality information from stakeholders and a general resistance to the changes that are taking place. Disengaged stakeholders may not support or may actively oppose the business analysis activities that are taking place.

[Figure 5.6](#) summarizes the inputs, guidelines and tools, outputs, techniques, and associated tasks used to prepare for this task.

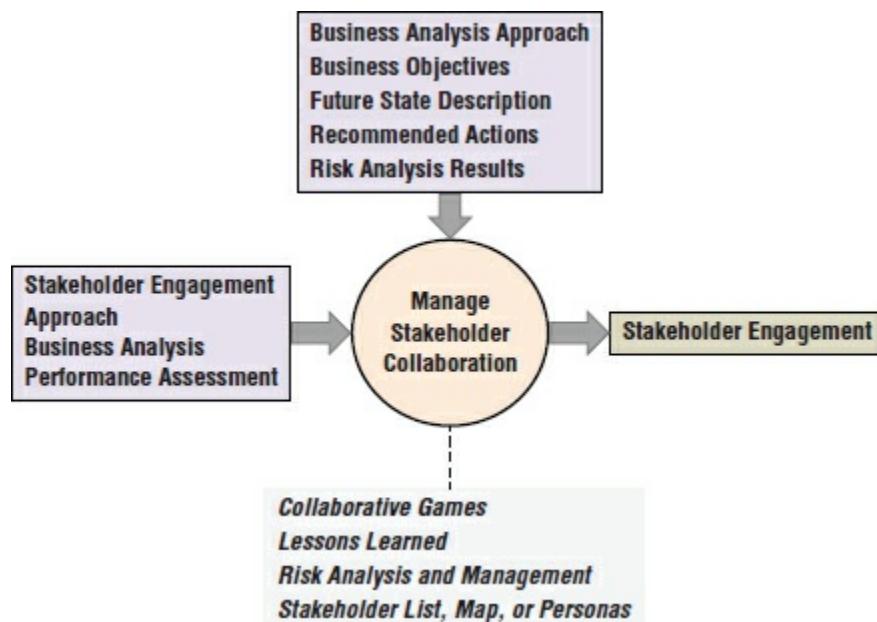


FIGURE 5.6 Task summary: Manage stakeholder collaboration.

Several key inputs are needed to adequately prepare business analysts to perform this task. Let's take a look at each of these task inputs in greater detail:

Stakeholder Engagement Approach This approach defines and describes the types of engagement expected from the stakeholders and suggests ways to manage and deal with those stakeholders.

Business Analysis Performance Assessment This assessment focuses on how effectively business analysis tasks are being performed. The tasks being assessed include those tasks targeting stakeholder engagement.

There are additional inputs that may be used by business analysis tasks:

guidelines and tools. Let's take a closer look at the guidelines and tools that may also be used as inputs when managing stakeholder collaboration:

Business Analysis Approach The business analysis approach is a “one-stop shop” for the general strategy used to guide business analysis work on your project. The approach contains stakeholder information and the level of involvement and collaboration expected from the stakeholders during business analysis activities.

Business Objectives Business objectives define the direction to take in order to achieve the desired future state. These objectives are frequently used to focus your stakeholders on a common goal for the desired changes and the resulting solution.

Future State Description The future state description defines where the initiative is heading and what will result when the changes have been implemented. This description is also used to focus stakeholders on a common goal as they work together to achieve that future state.

Recommended Actions Recommended actions suggest what should be done to improve the value of a solution. They are part of the common goal the business analyst can use to keep stakeholders working together and heading in the same direction.

Risk Analysis Results Some risks identified for your project will be stakeholder-related risks. You will need to address these risks to maintain communication and collaboration with stakeholders across the project life cycle.

[Table 5.11](#) summarizes the inputs, guidelines, and tools for this task and lists the source of each input (if applicable).

TABLE 5.11 Inputs: Manage stakeholder collaboration.

Task Input	Input Type	Input Source	Source Knowledge Area
Stakeholder engagement approach	Input	Plan stakeholder engagement.	Business Analysis Planning and Monitoring
Business analysis performance assessment	Input	Identify business analysis performance improvements.	Business Analysis Planning and Monitoring
Business analysis approach	Guidelines and tools	Plan business analysis approach.	Business Analysis Planning and Monitoring
Business objectives	Guidelines and tools	Define future state.	Strategy Analysis
Future state description	Guidelines and tools	Define future state.	Strategy Analysis
Recommended actions	Guidelines and tools	Recommend actions to increase solution value.	Solution Evaluation

Risk analysis results	Guidelines and tools	Assess risks.	Strategy Analysis
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When managing stakeholder collaboration across the project life cycle, the business analyst performs several elements, including the following:

- Gaining agreement on commitments
- Monitoring stakeholder engagement
- Collaborating

Let's step through each of these three elements now:

Gaining Agreement on Commitments Business analysis activities typically require time and resource commitments from the stakeholders. These expectations are key parts of completing the business analysis work in a timely fashion. The terms and conditions of time and resource commitments should be discussed and negotiated as early as possible to avoid or minimize conflicts. Remember to use your negotiation, communication, and conflict resolution skills when managing stakeholder collaboration.

Monitoring Stakeholder Engagement Monitoring participation and performance of stakeholders doing business analysis work is another important task for the business analyst. The right stakeholders need to participate on the right things in order for the work to be done correctly. Keeping stakeholders engaged and interested in the business analysis work is also essential.

A number of risks come into play when stakeholders are involved in business analysis work. Stakeholders can be diverted to other work activities that are not part of your efforts. They can also provide low-quality business analysis information that impacts your requirements and designs. Confirmation and approval of elicitation results and other business analysis deliverables must be completed in a timely fashion.

Collaborating Business analysts should encourage free flow of information, ideas, and innovations when working with stakeholders. Common sense tells us that stakeholders who feel that they are part of the team are typically more engaged with the work that is being done. Collaboration requires regular, frequent, bidirectional communication between the business analysis team and the stakeholders. This stakeholder "care and feeding" is an important part of the business analyst's job.

There are several techniques that you may choose to apply when managing stakeholder collaboration. One technique that we recommend is collaborative games, an engaging way to get your stakeholders to work as a team. Let's take a look at this recommended technique in greater detail.

Recommended Technique: Collaborative Games

Collaborative games stimulate teamwork and collaboration by putting participants in an environment where they elicit information and build a joint understanding of a problem or solution. These games are designed to facilitate collaboration between the participants while focusing them on a specific

objective. Participants share their knowledge on a particular topic, identify assumptions, and explore the knowledge together in creative ways. People with different points of view learn how to work together and develop a shared model of what is needed.

A neutral facilitator usually manages the event and enforces the rules of the game across all participants. Most collaborative games involve a strong visual or tactile element, such as using sticky notes, whiteboards, or drawing pictures. Games typically have these three steps:

1. The first step is an opening step to get participants involved and aware of the rules of the game. They may also start generating ideas during this step.
2. The exploration step is where participants engage and look for connections between their ideas, test the ideas, and experiment with new ideas.
3. The closing step has everyone assessing the ideas and working out which ideas are the most useful relative to the objective of the game.

At the end of the game, the facilitator debriefs the activity. Participants then review the results and decide what needs to happen next as a result of what was learned in the session.



The *BABOK® Guide* lists three specific examples of collaborative games. They include the following:

Product Box Participants construct a box for a product as if it was being sold in a retail store. This helps everyone identify the actual features of the product included on the label.

Affinity Map Participants write down features on sticky notes, put them on the wall, and then group them together as groups of similar features. This is a good way to identify related or similar features.

Fishbowl Participants divide into two groups. One group speaks about a topic while the other group listens and documents their observations. This is a way to identify hidden assumptions or perspectives.

Additional Techniques to Consider

There are many other techniques to choose from when you find yourself managing and encouraging stakeholder collaboration on your projects. Let's step through each of them here:

Lessons Learned Lessons learned provide a great way to understand stakeholder engagement and satisfaction as part of your project team. They also offer the opportunity to improve working relationships by making changes in the way things are done.

Risk Analysis and Management Risk analysis and management is used to

identify and manage stakeholder-related risks, such as participation, involvement, or engagement.

Stakeholder List, Map, or Personas This technique provides the business analyst with a list of the stakeholders who are available to participate in business analysis work.

Once you have selected and applied one or more techniques as part of your efforts, you are ready to get your stakeholders engaged with your project efforts. We will discuss that next.

Achieving Stakeholder Engagement

The *BABOK® Guide* defines *stakeholder engagement* as “willingness from stakeholders to engage in business analysis activities and interact with the business analyst when necessary.” All types of stakeholders may be involved with the business analysis activities on a project at some point in time.

Managing these stakeholder resources effectively and keeping them engaged with the work falls on the business analyst’s shoulders. This task output is fairly subjective. You will be tasked with getting the stakeholders to “play pretty” and be a part of things. All stakeholders on your project may collaborate with the business analyst, project team members, and one another while dealing with a proposed change.

Now let’s wrap up our review of the Elicitation and Collaboration knowledge area.

How This Applies to Your Projects

In this chapter, you stepped through tasks guiding you in eliciting information for your project's business, stakeholder, solution, and transition requirements. Remember that requirements elicitation work is iterative and incremental in nature. One of the biggest challenges that you will encounter in your projects is making sure that you ask the stakeholders all of the right questions. After all, the goal is to get the right information so you can develop correct and complete requirements defining what capabilities the new solution has to offer. Engaging and collaborating with your stakeholders is another essential component of a successful project.

Many types of questions are used in gathering business analysis information. Using all types of questions as part of your elicitation activities allows you to organize and discover what the stakeholders need and want within the scope of the proposed solution. Remember, skilled requirements analysts are experts at asking questions, especially when they don't know the answers. These are the types of questions a skilled business analyst should be proficient with:

- Research questions
- Detailed questions
- Directive questions
- Meta questions
- Open-ended questions
- Closed-ended questions

We'll take a quick look at each of these question types, but first let's see how one seasoned business analyst uses them in interviews.



Real World Scenario

What Is the Real Problem?

Asking different types of elicitation questions with a plan in mind really helps us find out what the stakeholders need from our project. Design your elicitation questionnaire like a funnel, with the top of the funnel representing high-level, scoping questions. As you progress down the funnel toward the ground, your questions become more and more detailed based on what you have learned. At the bottom of the funnel, ask very specific and detailed questions about what your stakeholders do and what they need from your project.

The shipping team at Palmer Divide Vineyards expressed concern about the reliability of current inventory data at the winery. Recently, several cases of

a particular wine were sold to a distributor when they were not currently in stock. Taylor, the IT director, sat down with Bob, the shipping team lead, to figure out what was going on.

Taylor started her information gathering at the top of the funnel with a research question.

“What is the problem that we need to address?”

Bob responded, “Well, we have a serious issue with inventory.”

Taylor used a meta question to clarify the response.

“What makes you say that there is an inventory issue?” she asked.

Bob replied, “This organization has no idea of how many items we have in the warehouse at any given time.”

Taylor used a detailed question to ask for more information.

“Is the issue with keeping track of incoming quantities of wine, outgoing quantities of wine, or both?”

Bob responded, “I think it is both, but I believe that we should focus on keeping track of incoming quantity and our current stock of each wine first.”

Taylor dug deeper for more details to provide direction for subsequent elicitation interviews and involvement with this pending effort.

“Who should keep track of incoming quantity? What should they keep track of? How often should they keep track of it? Where should they do it?”

Bob pointed to Warren, the warehouse manager, as the person having primary responsibility for the current wine inventory. From a data perspective, Bob listed the item number, item quantity, and weekly shipments as the key data values currently being tracked. He explained that the vineyard has a simple, spreadsheet-driven inventory system that might require an update or replacement.

Taylor made good use of the funnel approach in her first round of elicitation questions. She asked a high-level research question about the inventory problem and then focused the conversation using a meta question to narrow the discussion. She then asked several detailed questions about the current situation. Taylor was not in a situation to use directive questions to seek agreement or consensus during this elicitation interview. Remember, you can mix your research, meta, detailed, and directive questions with open- and close-ended questions to collect the right information from your stakeholders.

Research Questions These are general questions inviting your stakeholders to provide you with information about their concerns, interests, and needs relative to the solution scope. Research questions allow a skilled business analyst to assess the stakeholder needs. People are comfortable answering research questions when the questions are not limited or specific and the answers are not controlled in any way. An example of a research question might

be “What constitutes success for this project?”

Detailed Questions Detailed questions focus on gathering specific information within the predefined solution scope. These questions are typically the step after research questions and help the business analyst focus on more specific information that is needed. To be thorough, detailed questions should be framed around the five Ws: who, what, where, when, and why. As your questions become more specific, it is important to discourage one-word answers, such as yes and no. This can often be achieved in the phrasing of each question. An example of a detailed question is, “Who provides you with this information?”

Directive Questions Directive questions are used primarily by business analysts in group settings where there are contradictions in what the business analyst has been told. Directive questions direct the other parties to an area where agreement needs to be reached and sometimes away from an area that is contentious. For project requirements information, these questions can be used to get consensus on specific features and functionality and to encourage stakeholder decision making. One example of a directive question might be, “What is the relative priority of this key feature?”

Meta Questions Meta questions are powerful tools. They allow you to clarify and enhance what has just been said. Basically, meta questions are questions about questions. This communications strategy allows the business analyst to promote open communication in a nonthreatening way. Meta questions clarify and summarize what the business analyst has been told. They are an active listening technique that proves that the business analyst really listened to what a particular stakeholder said during requirements elicitation. An example of a meta question is, “Do you mind if I ask you about . . . ?”

Both research and detailed questions can be open-ended or closed-ended questions. Be sure you can distinguish between the two types of questions, as this is a topic that could appear on your certification exam.

Using a good blend of question types at all levels of detail allows you to elicit more complete and correct requirements information for your projects. Saving your questions and reusing them is another best practice that you should apply on all of your projects. Once you have well-written, general questions, it is easy to use them on another project. Building requirements elicitation questionnaires or surveys based on your proven questions often raises the quality and quantity of business analysis information received. It also saves you from reinventing the wheel.

Summary

The five tasks in the Elicitation and Collaboration knowledge area guide a business analyst in effectively gathering and organizing requirements information at any level of detail. It is difficult to develop complete and correct requirements for your project if you do not elicit complete and correct business analysis information from your stakeholders. Remember, elicitation is not just asking questions.

Effective communication and collaboration skills are underlying competencies enabling a business analyst to do this work. Successful projects start with defining and agreeing to what is needed. Without the ability to elicit high-quality requirements information, business analysts will find it difficult to perform their jobs well.

Your elicitation results must be documented, confirmed, and used in subsequent requirements development activities, such as analysis and specification. The stated, confirmed requirements and any stakeholder concerns are the building blocks from which the real requirements for your projects will be derived.

Exam Essentials

Be able to list the tasks found in the Elicitation and Collaboration knowledge area. You will see questions about the tasks, their associated techniques, their more detailed elements, and the key outputs that they produce on your exam. You should memorize the five tasks of this knowledge area and the key outputs associated with them. The tasks are:

- Prepare for elicitation.
- Conduct elicitation.
- Confirm elicitation results.
- Communicate business analysis information.
- Manage stakeholder collaboration.

Be able to list, describe, and apply the elicitation techniques.

Understanding and applying the elicitation techniques will be a key focus for your Elicitation and Collaboration knowledge area exam questions. Be sure that you can list and describe how to use the elicitation techniques found in the knowledge area. Here's the list:

- Benchmarking and market analysis
- Brainstorming
- Business rules analysis
- Collaborative games
- Concept modelling
- Data mining
- Data modelling
- Document analysis
- Estimation
- Focus groups
- Interface analysis
- Interviews
- Lessons learned
- Mind mapping
- Observation
- Process analysis
- Process modelling
- Prototyping

Reviews

Risk analysis and management

Stakeholder list, map, or personas

Survey or questionnaire

Workshops

Be able to explain the different types of elicitation prototypes and when they might be used. Functional scope prototypes are either horizontal or vertical; horizontal prototypes present a shallow, wide view of the functionality, while vertical prototypes highlight a deep, narrow slice of the functionality. Software Development Life Cycle (SDLC) prototypes can be throw-away or evolutionary. Throw-away prototypes allow you to quickly uncover and clarify interface requirements and then discard the prototype when the system is done. Evolutionary or functional prototypes extend your initial requirements into the fully functional system.

Be able to distinguish between structured and unstructured elicitation interviews. Structured interviews are driven by a predefined set of questions. Unstructured interviews are more of an informal, open-ended conversation.

Be able to compare passive and active observation. In passive (invisible) observation, you observe work being performed, but you do not ask questions during that work. You record what you see, write down any questions that arise, and stay out of the way. Once the work is finished, you can ask questions about what you just witnessed. In contrast, active (visible) observation allows you to observe and to talk with the user at the same time as the work is being performed. You can ask questions, even if they interrupt what the user is doing.

Key Terms

This chapter stepped through the contents of the fourth knowledge area from the *BABOK® Guide*: Elicitation and Collaboration. Most of this knowledge area focuses on gathering the business analysis information you need to define the solution capabilities being built by your project.

You should understand how to apply the techniques and tasks in this knowledge area in order to be an effective business analyst. Additionally, you will need to know the five tasks and their associated elements and techniques from this knowledge area in order to be successful on the CBAP® or CCBA™ exams. The tasks include the following:

- Prepare for elicitation.
- Conduct elicitation.
- Confirm elicitation results.
- Communicate business analysis information.
- Manage stakeholder collaboration.

Chapter 5 introduced a number of new key words related to eliciting business analysis information on a project. Here is a list of some of the key terms that you encountered in this chapter:

- brainstorming
- business analysis information packages
- collaboration
- elicitation
- elicitation results
- elicitation worksheet
- evolutionary or functional prototypes
- focus groups
- idea generation
- idea reduction
- interviews
- prototypes
- prototyping
- requirements analysis
- requirements documentation
- requirements elicitation

- reviews
- scheduled resources
- stakeholder engagement
- supporting materials
- throw-away prototypes
- workshops

Review Questions

1. All of the following tasks are performed during elicitation except:
 - A. Select elicitation techniques.
 - B. Confirm elicitation results.
 - C. Prepare for elicitation.
 - D. Conduct elicitation.
2. You are reviewing documents for the current system in order to confirm the existing requirements. Document analysis is an effective technique for doing this work as long as the documents being reviewed are
 - A. Not current and invalid
 - B. Not current but valid
 - C. Current but not valid
 - D. Both current and valid
3. What is the proper sequence for conducting any type of elicitation technique?
 - A. Reduce, reuse, and recycle.
 - B. Prepare, conduct, and wrap up.
 - C. Prepare, analyze, and reduce.
 - D. Generate, reduce, and assess.
4. During an active observation session, the business analyst watches the user carefully, asks them probing questions, and:
 - A. Acts as an apprentice
 - B. Reviews the findings
 - C. Takes detailed notes
 - D. Studies the process
5. What prototype allows you to learn about user interface needs and then to evolve the requirements into a fully functioning system?
 - A. Throw-away
 - B. Usability
 - C. Evolutionary
 - D. Visual
6. Who may participate in requirements elicitation activities?
 - A. Any stakeholder

- B. Stakeholder list
 - C. Subject matter experts
 - D. Project team
7. “Does the existing functionality currently meet your needs?” is an example of what type of structured interview question?
- A. Closed-ended
 - B. Open-ended
 - C. Research
 - D. Meta question
8. Stakeholder _____ is defined as the willingness of stakeholders to actively work and interact with the business analysis team.
- A. Collaboration
 - B. Engagement
 - C. Willingness
 - D. Involvement
9. What elicitation technique might best assist you in understanding the existing processes that are being used in an online order entry system?
- A. Brainstorming
 - B. Observation
 - C. Focus group
 - D. Prototyping
10. When preparing for observation, you plan to ask questions while the work is being done. You are preparing to do _____ observation.
- A. Active
 - B. Passive
 - C. Invisible
 - D. Proactive
11. The Elicitation and Collaboration knowledge area focuses on eliciting business, stakeholder, solution, and _____ requirements.
- A. Implementation
 - B. Functional
 - C. Transition
 - D. Nonfunctional
12. You are working with a group trying to build a diverse list of possible approaches as to how the team might solve a specific business problem. What technique should the group consider applying?

- A. Observation
 - B. JAD session
 - C. Focus group
 - D. Brainstorming
3. You have just discovered that the business process expert, who was responsible for the existing system currently being upgraded, is no longer employed by the company. Which elicitation technique might you apply in this situation?
- A. Document analysis
 - B. Reverse engineering
 - C. Interface analysis
 - D. Elicitation workshop
4. You are planning a focus group to elicit requirements for a new online order-entry system, addressing a wide variety of end users interacting with the system in different ways. What type of users should you include in your focus group?
- A. Miscellaneous
 - B. Heterogeneous
 - C. Homogeneous
 - D. Collaborative
5. What are the three types of interfaces typically looked at during interface analysis?
- A. People, process, and project
 - B. User, application, and device
 - C. Input, output, and process
 - D. User, system, and software
6. The requirements elicitation technique that uncovers and visualizes the interface requirements before an application is designed or developed is called:
- A. Prototyping
 - B. Interface analysis
 - C. Observation
 - D. Reverse engineering
7. What technique provides an effective method for eliciting requirements information from many people in a short period of time?
- A. Workshop
 - B. Interview

- C. Survey
 - D. Review
8. Eliciting requirements using a brainstorming session enables the participants to exercise _____ thinking.
- A. Creative
 - B. Parallel
 - C. Focused
 - D. Critical
9. You and the project sponsor are informally discussing what the business expects from a proposed new system. You came into the discussion with no prepared questions. What type of elicitation interview are you conducting?
- A. Structured
 - B. Functional
 - C. Unstructured
 - D. Discussion
10. All of the following are games that may be used to encourage stakeholders to develop a joint view of a problem or potential solution except:
- A. Affinity map
 - B. Product box
 - C. Business rules
 - D. Fishbowl

Chapter 6

Controlled Middle: Requirements Analysis and Design Definition

CBAP®/CCBA™ EXAM TOPICS COVERED IN THIS CHAPTER:

- ✓ **Specify and model requirements and designs.**
- ✓ **Verify requirements.**
- ✓ **Validate requirements.**
- ✓ **Define requirements architecture.**
- ✓ **Define design options.**
- ✓ **Analyze potential value and recommend solution.**



Requirements analysis takes elicited information and makes sense of it. The tasks found in the Requirements Analysis and Design Definition knowledge area focus on analyzing the business analysis information from your elicitation efforts and building the real stakeholder or solution requirements for your project. The real requirements define the derived needs of your stakeholders after your structured and collaborative requirements analysis and design efforts are complete.

Deriving and refining requirements for a project is repetitive and systematic in nature. Experienced business analysts find themselves moving between requirements elicitation, requirements analysis, and requirements documentation or specification activities many times throughout their projects. There can be a significant difference between the business analysis information elicited from stakeholders and the real requirements that define the resulting solution.

Requirements Analysis and Design Definition

The Requirements Analysis and Design Definition knowledge area focuses on analyzing what your stakeholders have told you and defining which capabilities need to be part of the resulting solution. According to the *BABOK® Guide*, the Requirements Analysis and Design Definition knowledge area is where you develop your stakeholder and solution requirements for your project. Business requirements are developed by tasks in the Strategy Analysis knowledge area, and transition requirements are built by the Solution Evaluation tasks.

Exam Spotlight

Stakeholder requirements describe the capabilities of the solution that will meet the stakeholder needs. *Solution requirements* are more detailed requirements, describing the behavior of the solution components so that those components can actually be created later in the project life cycle. Be sure you know the difference. behavior sometimes and *behaviour* other times. "? amznid=12506>

The tasks in this knowledge area take the elicited business analysis information and make sense of it. The information reflects what the stakeholders have told you about what they need. The business analysis information becomes analyzed requirements after it is acted upon by the tasks in this knowledge area.

Analyzed requirements are defined as requirements that have been specified and modelled.

This requirements development-focused knowledge area generates several key business analysis deliverables. They include the following:

- Specified and modelled stakeholder and solution requirements
- Verified stakeholder and solution requirements
- Validated stakeholder and solution requirements
- *Requirements architecture*
- Design options
- Solution recommendation

We will cover each deliverable in more detail later in the chapter.

To focus on what is important to the business analyst across the life cycle of their business analysis efforts, let's consider the tasks of this knowledge area with the framework of the BACCM™. The business analyst needs to keep an eye on their work relative to the six concepts contained in the framework: change, need, solution, stakeholder, value, and context. [Table 6.1](#) lists these responsibilities.

TABLE 6.1 The BACCM™: Requirements Analysis and Design Definition

Core Concept	The Business Analyst's Responsibilities
Change	Transform the elicitation results into requirements and designs defining the proposed change.
Need	Analyze needs and recommend a solution that meets those needs.
Solution	Define solution options and recommend the option addressing the need that has the most value to the business.
Stakeholder	Tailor requirements and designs so the stakeholders can both understand and use them.
Value	Analyze the potential value of the solution options in order to confirm and communicate that value.
Context	Model and describe the context for the proposed change in an understandable and usable format.

Requirements analysis and design work is multifaceted and applies a wide range of techniques for categorizing project requirements and making good decisions about their priorities, their structure, and their quality.

Exam Spotlight

The tasks in the Requirements Analysis and Design Definition knowledge area apply to the stakeholder and solution requirements for your project. The Requirements Analysis and Design Definition knowledge area also addresses monitoring and reporting on the performance of the analysis activities throughout the project. The business analysis team is responsible for assessing the effectiveness of the techniques being used to analyze and specify the stakeholder and solution requirements for their project. The Requirements Analysis and Design Definition knowledge area is addressed in Chapter 7 of the *BABOK® Guide*.

The Business Analyst's Task List

A business analyst has six tasks to perform in the Requirements Analysis and Design Definition knowledge area. We will look at each one of these tasks in detail later in this chapter. The task list from the *BABOK® Guide* includes the following:

- Specifying and modelling requirements
- Verifying requirements
- Validating requirements
- Defining the requirements architecture

- Defining design options
- Analyzing potential value and recommending a solution

These tasks focus on making sure that the stakeholder and solution requirements for your projects are thoroughly analyzed and documented for you, your team, and your stakeholders. The goal is to use the capabilities defined in these requirements as the basis for designing and constructing the solution.

When Does Requirements Analysis and Design Definition Take Place?

What you and I need is the right word—fat or thin, brisk or lazy. The right word. In the right place. For the right reason.

Willard R. Espy, editor

The tasks in the Requirements Analysis and Design Definition knowledge area begin by developing the project's stakeholder requirements and continue until the more detailed solution requirements are completed. Typically, defining the stakeholder and solution requirements on your projects takes place in the controlled middle of the project life cycle as part of the project's requirements development or definition phase.

The controlled middle of a project is where the actual work gets done—one stage or phase at a time. Business analysis tasks typically include those from the Elicitation and Collaboration, Requirements Analysis and Design Definition, and Solution Evaluation knowledge areas, with a little Requirements Life Cycle Management thrown in for good measure.

Exam Spotlight

Approximately 45 of your 150 CBAP® exam questions will focus on the Requirements Analysis and Design Definition knowledge area. On the CCBA™ exam, expect to see approximately 48 questions about this knowledge area. The exam questions target specific and detailed aspects of the tasks, tools, and techniques that are found there.

Let's step through the first task in the Requirements Analysis and Design Definition knowledge area: specifying and modelling your requirements.

Specify and Model Requirements

The first task in the Requirements Analysis and Design Definition knowledge area is specifying and modelling the stakeholder and solution requirements for your project. The business analyst analyzes the elicitation results and creates representations of those results. For most projects, this work is not done all at once. The higher-level stakeholder requirements are typically defined and decomposed into the more detailed solution requirements. Your requirements architecture drives how you accomplish this by defining the combination of text,

charts, diagrams, and models that you will use.

Formal textual or graphical models must follow the rules for their model type. Typically, modelling rules are set either by your organization, by your selected modelling tool vendor, or by a set of standards and guidelines for the particular type of modelling technique that you have selected. That means you are expected to consistently use the correct notation and meaning for every element in your model. *Formal models* are powerful tools as long as your stakeholder audience understands the language they are speaking. *Informal models* have no formal definition, connecting elements in ways that have meaning for you and for your stakeholder audience.

[Figure 6.1](#) summarizes the inputs, guidelines, tools, outputs, techniques, and associated tasks used to specify and model your requirements.

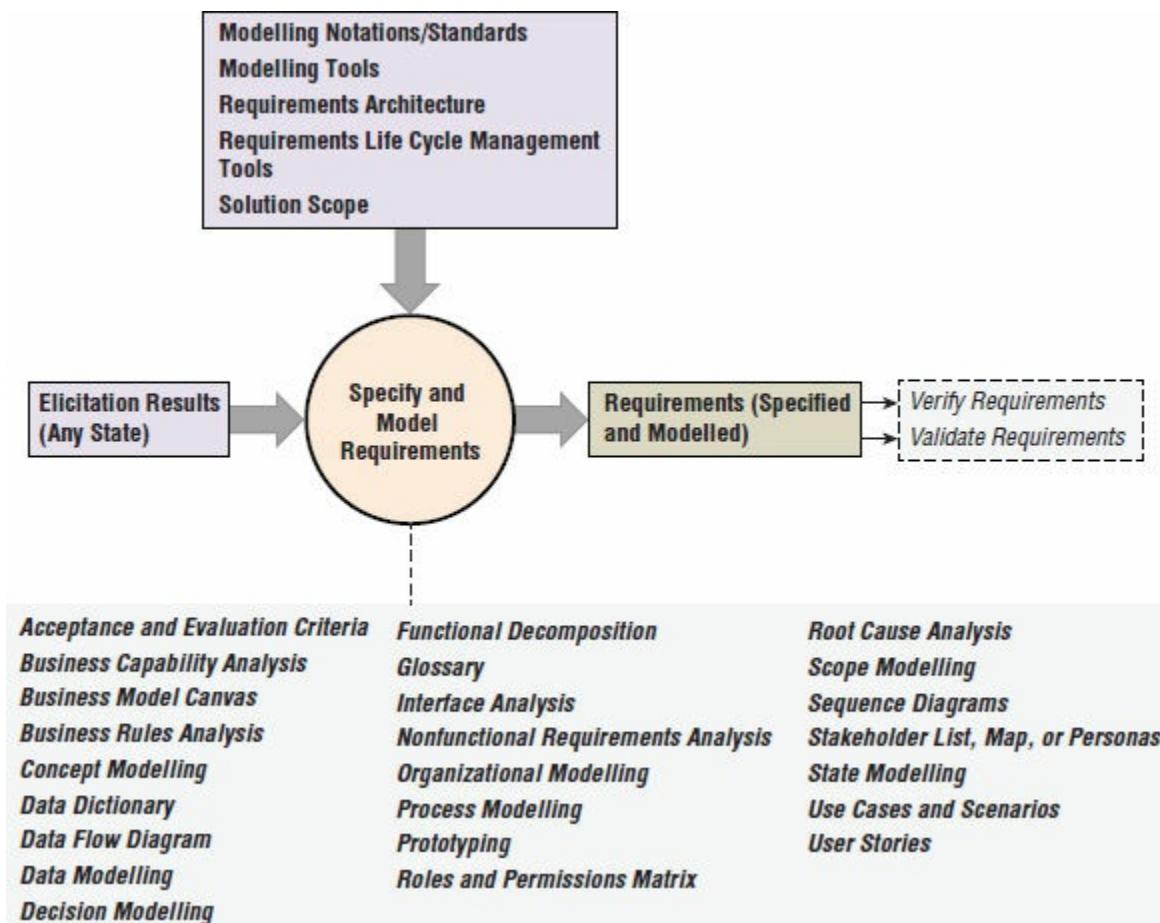


FIGURE 6.1 Task summary: Specify and model the requirements.

One key input is needed to specify and model the stakeholder and solution requirements for your project: the business analysis information that was elicited from your stakeholders and the requirements structure defining how the stakeholder and solution requirements will be organized. Let's take a look at this input in greater detail:

Elicitation Results (Any State) Modelling begins when there are elicitation results available. The elicitation results that are used can be either confirmed or unconfirmed. Modelling and elicitation can be sequential, iterative, or

concurrent activities. Modelling often leads to the need for additional elicitation results to clarify or expand upon what is known at a particular point in time.

There are additional inputs that can be used by business analysis tasks: guidelines and tools. Guidelines are essentially instructions or descriptions on why and how a business analyst will undertake a task. Tools, on the other hand, are methods for conducting business analysis task or shaping a task output. Let's take a look at the guidelines and tools that can also be used as inputs when specifying and modelling requirements:

Modelling Notations/Standards Many business analysts use standard templates and syntax to precisely and consistently specify requirements.

Modelling Tools There are many modelling tools available to draw and store matrices and diagrams that represent requirements. These tools may or may not be part of a requirements life cycle management tool.

Requirements Architecture The business analyst uses the requirements and their interrelationships to make sure the requirements and designs are complete and consistent.

Requirements Life Cycle Management Tools These software-based products are frequently used to record, organize, store, and share requirements and designs.

Solution Scope Solution scope is the set of capabilities a solution must deliver to meet the business need. The boundaries of the solution scope are also the boundaries for the resulting requirements and designs that are being specified and modelled.

[Table 6.2](#) summarizes the inputs, guidelines, and tools to this task and lists the task and knowledge area sources for each input used to specify requirements.

TABLE 6.2 Inputs, Guidelines, and Tools: Specify and model requirements.

Task Input	Input Type	Input Source	Source Knowledge Area
Elicitation results (any state)	Input	Conduct elicitation.	Elicitation and Collaboration
		Confirm elicitation results.	Elicitation and Collaboration
Modelling notations/standards	Guidelines and tools		
Modelling tools	Guidelines and tools		
Requirements architecture	Guidelines and tools	Define requirements architecture.	Requirements Analysis and Design Definition
Requirements life cycle management tools	Guidelines and tools		

Solution scope	Guidelines and tools	Define change strategy.	Strategy Analysis
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You should apply several elements when specifying and modelling the stakeholder or solution requirements on your projects, such as the following:

- Model requirements.
- Analyze requirements.
- Represent requirements and attributes.
- Implement appropriate levels of abstraction.

Let's look at each of these elements in greater detail. Working with each of these elements to the appropriate degree is a skill found in experienced business analysts. You must decide what to model, how to effectively model it, and how much detail is necessary in your models.

Model requirements Models are a simplified representation or diagram of something real. They can be textual, graphical, or a combination of both. The phrase “a picture is worth a thousand words” is certainly true when it comes to analyzing and documenting your requirements. Many analysts find using models—formal or informal—to be helpful during their requirements elicitation efforts, as well as during requirements analysis.

The most common matrix type of model seen in requirements is a two-dimensional table or spreadsheet. Requirements attributes and data dictionaries lend themselves to being developed in a table format. A table can be much more effective than a bunch of sentences when you are trying to show simple relationships between pieces of your requirements information, such as requirements priorities or traceability relationships.

According to the *BABOK® Guide*, there are five categories of models. [Table 6.3](#) summarizes each category of model and suggests techniques that might be used for each type.

TABLE 6.3 Categories of models

Category	Description	Techniques
People and Roles	Represent organizations, people, and their relationships to the enterprise and the solution	Organizational modelling Scope modelling Roles and permissions matrix Stakeholder list, map, or personas
Rationale	Represent the rationale or the “why” of a change	Decision modelling Scope modelling Business model

		canvas Root-cause analysis Business rules analysis
Activity flow	Represent a sequence of actions, or events as an activity flow	Process modelling Use cases and scenarios User stories
Capability	Represent capabilities, features, or functions of the solution	Business capability analysis Functional decomposition Prototyping
Data and information	Represent the exchange of information within a solution and the characteristics of that information	Data dictionary Data flow diagram Data modelling Glossary State modelling Interface analysis

You will also find yourself using textual requirements to describe your solution capabilities, conditions, and constraints. Good technical writing skills are essential. Writing text requirements is not an exercise in creative writing. You want your text requirements to be written in simple sentences that are clear, concise, and complete.

Analyze requirements. Requirements analysis requires you to *decompose* the elicited business analysis information into components. According to the *BABOK® Guide*, a *component* is “a uniquely identifiable element of a larger whole that fulfills a clear function.” Basically, you will break down what you know about the solution into organized pieces and parts and to the right level of detail. Be sure to look for things that are changing to meet the business need as well as things that need to stay the same. Watch out for missing information and beware adding in components that are not needed to attain the solution scope.

Represent requirements and attributes. Most business analysts use the Requirements Classification Schema from the *BABOK® Guide* to classify their requirements: business, stakeholder, solution, and transition. Solution requirements can be either functional or nonfunctional. These categories are generic enough to fit any business need.

Make sure you capture the requirements attributes associated with each of the requirements that you specify and model. The attributes that you need to capture for each type of requirement are defined for you in the requirements

management plan that you produced as part of the Business Analysis Planning and Monitoring knowledge area.

Exam Spotlight

The *BABOK® Guide* makes an important distinction between requirements and designs for this task. When the focus of the specifying and modelling activities is on understanding the business need, the resulting outputs are referred to as *requirements*. When the focus of the specifying and modelling activities is on the solution, the resulting outputs are referred to as *designs*.

Implement the appropriate levels of abstraction. When the different types of requirements found in the *BABOK® Guide* (business, stakeholder, solution, and transition) are discussed, the names are provided for the different levels of abstraction or detail found in those requirements. For example, business requirements are high level and focus on the big picture of what an organization requires in order to address a business need. Solution requirements are far more detailed, providing a basis to design and develop the capabilities needed in a new solution and its components. It is important for you to understand the levels of abstraction in your project requirements and factor them into your requirements elicitation and analysis activities across the project life cycle.

There are several techniques that you may choose to apply when specifying and modelling stakeholder and solution requirements and designs. Let's take a look at a number of these modelling techniques in greater detail.

Recommended Technique: Business Rules Analysis

Business rules analysis allows you to define the business policies and rules that govern business decisions and operations in your organization. Business policies are directives that support business goals. Business rules, by contrast, are actionable and testable directives that support the business policies. Complex business rules are often represented using a decision tree or table.

Business rules require you to create or to use a defined glossary of terms and an understanding of the relationships between them. There are two types of business rules:

- *Definitional business rules*
- *Behavioral business rules*

Behavioral business rules guide the actions of people who work in your organization and are typically enforced by organizational policies. Definitional business rules structure and categorize the knowledge and information found in your organization. When analyzing, stating, and managing business rules, you should do the following:

- State the business rules using the appropriate terminology.
- Keep the business rules independent of their implementation.
- Document business rules separately from how they are enforced.
- State business rules at the atomic level using a declarative format.
- Separate business rules from the processes that the rules support or constrain.
- Maintain the business rules in a way that allows for changes as business policies change.

To effectively perform business rules analysis, you need to have a data dictionary and glossary for your specific project or your organization.

Recommended Technique: Data Flow Diagrams

Data flow diagrams (DFDs) model how information flows within a system. DFDs portray the transformation of data by looking at the following:

- External entities that are sources or destinations for data
- Data processes that transform the data in some way
- Data stores that collect the data for some period of time
- Data flows moving data between external entities, processes, and data stores

DFDs help you understand the range of data found within a solution or solution component. They are created after a context diagram has been built that shows you the high-level view of the solution and its associated data flow. However, DFDs do not show you who performs the work nor do they show you any alternative paths through the process.



Real World Scenario

Palmer Divide Vineyards: Selecting a Data Flow Diagram Notation

You are currently modelling the new functionality associated with requesting and performing research studies at Palmer Divide Vineyards. You choose to use data flow to model the basic capabilities that will be found in the solution.

SH1: Users will perform research studies.

S1: The system will calculate elapsed study time.

SH2: Users will customize the contents of their research studies.

S2: The system will allow creation of custom data queries.

S3: The user will analyze the customer query results.

You draw two models using both the Gane-Sarson and Yourdon notations

just for comparison's sake ([Figure 6.2](#)). You decide to show the models to the project team to see whether they have a preference between them.

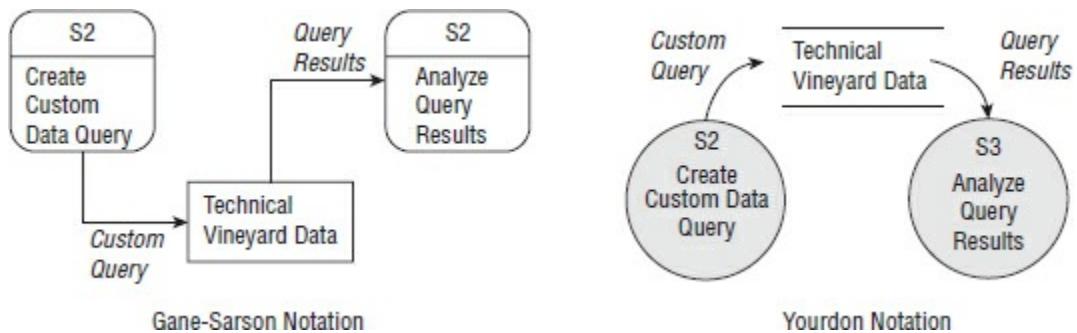


FIGURE 6.2 Gane-Sarson and Yourdon models for Palmer Divide

Because your project is software-development intensive, you and the team decide to use the Gane-Sarson notation for the data models. Everyone has seen models like this before, and they are most comfortable with that notation. You know that either notation would work to model the data flow for customizing research studies at Palmer Divide vineyards but think it best to go with the one that people find easiest to understand.

DFDs can be created using a number of notations, including Yourdon or Gane-Sarson. Stakeholders and users usually find either notation style easy to understand and to follow. [Table 6.4](#) compares the features found in these two common DFD notations based on the descriptions in the *BABOK® Guide*.

TABLE 6.4 The two common data flow diagram notations

Elements	Yourdon	Gane-Sarson
External entities	Labeled rectangle	Labeled rectangle
Data stores	Label for the data store name between two parallel lines	Labeled rectangle with the right side open or a labeled rectangle with a square containing the data store name
Data process	Labeled circle with a “verb-object” structure naming the process	Labeled rectangle with curved corners with a “verb-object” structure naming the process
Data flow	Single or forked line with an arrow along with a noun-phrase descriptor of the data being moved	Single or forked line with an arrow along with a noun-phrase descriptor of the data being moved

During requirements analysis, you will create additional diagrams, entity-relationship diagrams (ERDs), to represent the user's view of the solution and its capabilities in terms of entities, attributes, and relationships. Often you will refine these models during the design phase of the project, particularly if you are defining capabilities of a software application. During design, the ERDs are

refined, and the physical data model that becomes the basis for a relational database is ultimately created.

Recommended Technique: Data Modelling

Data models visually represent the people, places, things, and concepts that are important to the business. The two most common types of data models are the ERD and the class diagram. ERDs are often used for projects where a relational database is part of the solution, while class diagrams are a better fit for object-oriented software development efforts.

Logical data models look at the concepts, attributes, and relationships for the information relevant to the organization in detail or at a high level. *Physical data models* describe how data is stored and managed by a software application that is part of the solution scope. *Conceptual data models* represent how the business perceives its information—both the words used to describe the information and the relationships within the information.

In data models, concepts are something significant to the organization about which the organization needs data. Attributes are used to define specific pieces of information associated with a concept, such as its name, acceptable values, and a description. Relationships are significant business associations between concepts.



Real World Scenario

Palmer Divide Vineyards: Data Flow Diagrams or Data Models?

You are still in the early stages of modelling the new functionality associated with requesting and performing research studies at Palmer Divide Vineyards. You and the project team choose to use data flow diagrams with Gane-Sarson notation to model the basic capabilities that will be found in the solution. However, one of the technical team members has proposed an alternative to this modelling technique. She believes that using data models would be a better way to describe the people, places, and things involved with this new functionality.

The two of you sit down and look at the requirements you were using for selecting a modelling technique.

SH1: Users will perform research studies.

S1: The system will calculate elapsed study time.

SH2: Users will customize the contents of their research studies.

S2: The system will allow creation of custom data queries.

S3: The user will analyze the customer query results.

You consider the advantages and disadvantages of using either entity-

relationship diagrams (ERDs) or class diagrams as ways to effectively model the solution requirements. The two of you create two simple models using both approaches to help you evaluate the models and see if they fit your project, as shown in [Figure 6.3](#).

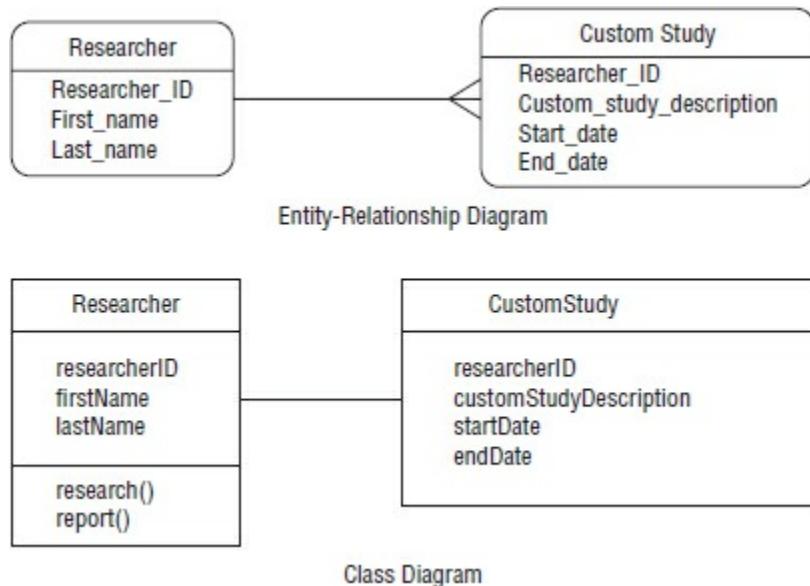


FIGURE 6.3 ERDs and class diagrams for Palmer Divide

Because your project is a traditional software development effort—workflow-intensive, as opposed to information-intensive—you both agree that neither one of these techniques fits your project as well as the simpler data models. Although the models created using ERDs could become the basis of a relational database for the vineyard’s technical data, you decide to pass on these models during requirements analysis. You both agree, though, that ERDs might be useful to the technical team once the project enters its design phase.

In addition to defining the information and its relationships, data models also describe the context, use, and validity of their business information using *metadata*, or data about data. Metadata tells a business analyst when and why information in a system is being changed in some way. [Table 6.5](#) summarizes and distinguishes (as defined by the *BABOK® Guide*) between the two types of data models commonly used by business analysts.

TABLE 6.5 Two types of data model

Elements	Entity-Relationship Diagram	Class Diagrams
Concept	Uniquely identified entity in a rectangle with the unique identifier shown under the entity name	Uniquely identified class in a rectangle or square with an optional stereotype above it in brackets defining additional properties
Attributes	Listed below the unique	Listed in a box below the name

	identifier for the entity in the rectangle	with operations listed below the attributes
Relationships	Indicated by a line which is annotated to show cardinality, such as any number from zero to many, zero to one, only one, or any number from one to many	Indicated by a line which is annotated to show multiplicity, such as zero to many, exactly any number from x to y , or any number from one to many

Data models are strong vehicles for transitioning through the planning, analysis, design, and implementation of projects. They are subject to rigorous rules for correctness and completeness that typically result in more accurate final products. In some cases, your stakeholders can find detailed data models difficult to understand, so you must be prepared to build them to the appropriate level of detail and be able to explain them thoroughly to your audience when required. According to the *BABOK® Guide*, performing data modelling is one of the required techniques in the fundamental knowledge base of an effective business analyst.

Recommended Technique: Nonfunctional Requirements Analysis

Nonfunctional requirements define the overall qualities or attributes of the resulting solution or solution components. Basically, they constrain how the solution requirements are to be met by the solution itself. Nonfunctional requirements state the qualities of behavior or quality attributes that your stakeholders want. Nonfunctional requirements augment the description of solution functionality by stating the solution's characteristics in various dimensions that are important to the users or the developers.

You should consider using a checklist for eliciting and developing your nonfunctional requirements. It is easiest to capture the functional and nonfunctional requirements at the same time. Checklists can help you organize your nonfunctional requirements by category and make sure you are not missing anything. The *BABOK® Guide* recommends using a set of 15 categories as buckets for your nonfunctional requirements. [Table 6.6](#) summarizes each category for you.

[TABLE 6.6](#) Categories of nonfunctional requirements

Category	Description
Availability	Evaluates solution operability and accessibility when it is required for use
Certification	Defines constraints on the solution that are needed to meet standards or industry conventions
Compatibility	Most solutions today need to operate effectively and either coexist or interact with other solutions in the same environment.
Compliance	Regulatory, financial, or legal constraints on the solution

Extensibility	Evaluates the ability of a solution to incorporate new functionality
Functionality	Measures the extent to which your stakeholders can recognize whether or not a solution meets their needs
Localization	Defines requirements for local laws, languages, currencies, cultures, and spelling
Maintainability	Focuses on how easy it will be to change one solution component without affecting other components. You also need to consider component reuse, ease of diagnosing problems, and the ability to implement changes without causing unexpected failures.
Performance efficiency	Looks at the time it takes to perform activities and the resource utilization levels for the solution
Portability	You need to determine whether your solution can be migrated to, installed in, and uninstalled from different environments when needed.
Reliability	Focuses on the solution's availability when the stakeholders need it. You should also look at the solution's ability to recover from errors or failures.
Scalability	Looks at the degree with which a solution can grow or evolve to handle more work
Security	Looks at the solution's ability to store information and protect it from unauthorized use. Authentication of solution users and audit reporting is also considered.
Service level agreements	Formal agreements for solution performance between the user organization and the provider of the solution
Usability	Evaluates the ease of learning to use the new solution, its capabilities, and how usable the solution actually is

Once you have captured your nonfunctional requirements, you will need to document them. Nonfunctional requirements are typically documented alongside the functional solution requirements that they constrain. That makes sense because the functional and nonfunctional requirements are both subsets of your solution requirements. It's a good idea to document the nonfunctional requirements that define your global constraints in their own section of your requirements document because they impact all of your solution requirements in some way.

Recommended Technique: Process Modelling

Process models organize your requirements using a hierarchy of processes and subprocesses, and they address those processes from start to finish. Use them to document the steps your stakeholders take to get their work done. Process models are easy to understand and to work with. Think of graphically depicting a series of steps to place an online order on a whiteboard with arrows between

them to show the sequence of events. That flowchart is a simple process map.

According to the *BABOK® Guide*, process models are visual representations of the sequential flow and control logic of a set of related activities. Process models may consist of manual steps performed by the stakeholders, automated steps taken by a software system, or some combination of the two. Process models may be developed at a high level to get a general understanding of what is going on, or they may be very detailed steps that your stakeholders take to perform their work.



Real World Scenario

Palmer Divide Vineyards: Are Process Models Even Better?

Your users were not pleased with the Gane-Sarson data model you presented to show the information flow associated with the research study project at the vineyard. They have asked you to model something more from the user's point of view. Several end users chimed in that they would like models that show who needs to do what and in what order it needs to be done. You agree to look at some other modelling techniques that may be more workflow focused.

Once again, you review the requirements you were using for selecting a modelling technique.

SH1: Users will perform research studies.

S1: The system will calculate elapsed study time.

SH2: Users will customize the contents of their research studies.

S2: The system will allow creation of custom data queries.

S3: The user will analyze the customer query results.

You think to yourself that perhaps a simple flow chart noting the user at each step might just do the trick. You create one for this small set of requirements ([Figure 6.4](#)) and ask the users what they think of this approach. The response is an overwhelming yes, and the final decision is that simple workflow models are the way to go on this project.

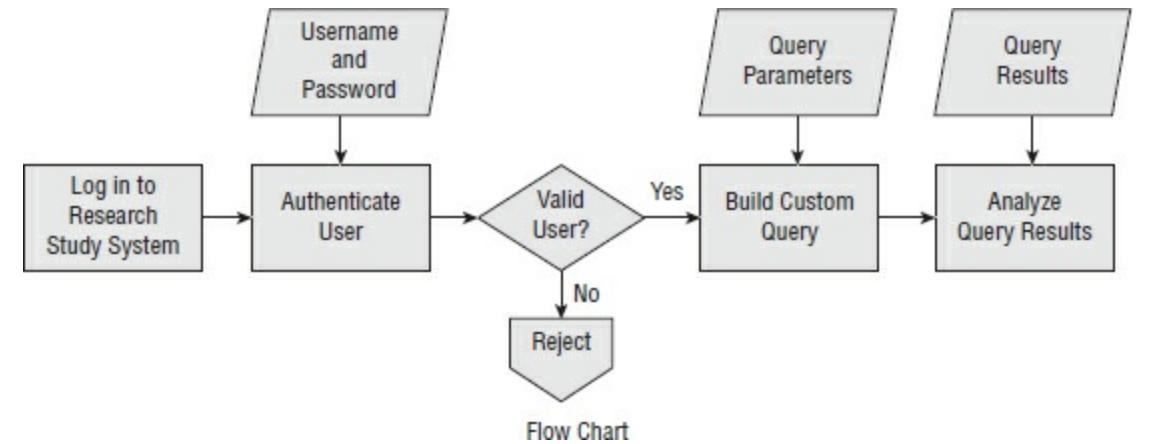


FIGURE 6.4 Workflow mode for Palmer Divide

Numerous notations can be used in your process models. The two most common notations are flowcharts and activity diagrams. [Table 6.7](#) summarizes the key elements found in your process models.

TABLE 6.7 Process model notation elements

Element	Description
Activity	Individual steps or pieces of work being performed to execute a business process
Decision point	Forks where workflow takes different directions or merges back together based on a decision being made
Directional flow	Indicates direction of the sequence of activities, typically drawn as top to bottom or left to right
Events	External factors such as actions taken or messages received that create, interrupt, or terminate a process
Link	A connection to other process maps
Role	Represents a type of person or a group found in the organization

Recommended Technique: Sequence Diagrams

Sequence diagrams can be thought of as if they were tracking the information flow between two people having a conversation. They show how the information gets passed back and forth between the two people. Sequence diagrams are commonly used during object-oriented analysis to show how classes and objects interact during a scenario. You can also use them to show how the user interface components or software components interact in your solution.

In a nutshell, sequence diagrams shows stimuli flowing between objects. The stimulus is a *message*, and the arrival of the stimulus at the object is called an *event*. Each object name is in a rectangle with a single vertical line drawn beneath it called a lifeline. Messages are depicted starting at the top of the lifeline and moving down that lifeline over time.

There are two ways to send messages between objects: asynchronous and

synchronous. Synchronous flow transfers a message to the receiving object and waits for a response or return message before it can do anything else. Asynchronous flow allows the sender to continue with its own processing after sending the message to the receiver.

Recommended Technique: Use Cases and Scenarios

Scenarios and use cases offer you a way to model how your stakeholders interact with the solution capabilities in order to get their jobs done. The stakeholder roles are called *actors*. Scenarios and use cases show how actors interact with the solution to accomplish one or more of their goals or in response to a particular event. They are excellent ways to model the solution scope and the behavior and goals of the actors interacting with that solution.



Real World Scenario

Palmer Divide Vineyards: Addressing Our Visual Learners

William, one of the vineyard's co-owners, prefers to review and approve high-level requirements by walking through graphical models containing as little text as possible. Because William is responsible for providing funding for the research study project, it is important that you meet his needs in your upcoming review meetings with senior management.

On past projects, you have successfully used high-level use-case diagrams to facilitate discussion of functionality and which stakeholders interact with that functionality. Even though many IT project teams only build use case diagrams when they are developing an object-oriented system, you know that a use case diagram can be employed effectively in your more traditional development project. The summary diagram will help you explain the high-level use cases or processes, the key stakeholder roles (actors), and the interactions between them (associations). If you discover an actor with no association to any of the use cases in your model, it might be that they are not a direct user of your system. If you have a use case with no actors associated with it, you will question the inclusion of those capabilities in your new system or discover who should interact with that particular capability.

For what you hope is the last time, you take a look at the requirements you were using for selecting a modelling technique.

SH1: Users will perform research studies.

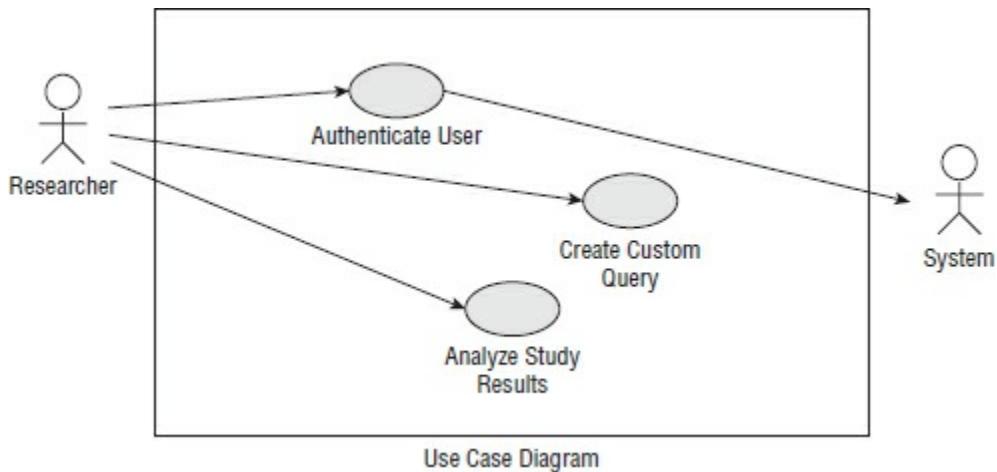
S1: The system will calculate elapsed study time.

SH2: Users will customize the contents of their research studies.

S2: The system will allow creation of custom data queries.

S3: The user will analyze the customer query results.

You build a summary-level use-case diagram as part of your modelling efforts to prepare for the upcoming meeting. The diagram models the new functionality associated with requesting and performing research studies at Palmer Divide Vineyards, as shown in [Figure 6.5](#).



[FIGURE 6.5](#) Summary-level use-case diagram for Palmer Divide

Scenarios and use cases are very much related. Scenarios are a series of steps performed by a stakeholder in order to document one way in which that person could use a solution capability to achieve a goal. Use cases consist of a set of scenarios describing all ways that stakeholder might achieve (or fail to achieve) a particular goal. [Table 6.8](#) summarizes the key elements found in scenarios and use cases.

[TABLE 6.8](#) Use case and scenario elements

Element	Description
Name	Unique name for each scenario or use case within the project, usually a “verb-noun” phrase such as Process Order
Goal	Brief description of a successful outcome of the use case from the perspective of the primary actor
Actor(s)	Unique name representing the role of each external person, system, or event that interacts with the solution through a use case
Preconditions	Any fact that the solution can assume to be true when the use case begins
Trigger	An event that initiates the flow of events for a use case
Flow of events	Description of what the actor and the solution do during the execution of the scenario, usually consisting of a primary flow and alternate flows
Post-conditions or guarantees	Any fact that must be true when the use case is complete

Recommended Technique: State Modelling

State modelling shows a sequence of states that an object, entity, or concept goes through during its lifetime. These models also define the events that cause a transition between these states. The functionality and behavior of a particular object will be different based on its current state. For example, a mainframe computer system in batch-processing mode may be unable to process real-time queries from a user during the time it is in that state.

State models are also called *state machine diagrams*. A state represents a unique condition that an object can be in or a status that the object may have. All states for an object are mutually exclusive, which means that an object can be in only one state at a time. All state machines have an initial state and any number of intermediate or end states. Transitions define the behaviors that move an object from one state to another state. They are often triggered by completed activities or events.

Here is a simple state machine for requirements development activities using the *BABOK® Guide*. The transitions for the requirements that are under development are the knowledge area tasks that change the state of those requirements as you work on them. For example during requirements analysis, the analyzed solution requirements (those that have been specified and modelled) go through a quality check using the verify requirements task. When the requirements emerge from this task, they have changed to a new state and become the verified solution requirements; are omitted or deferred to a later release; were determined to be out of scope, unnecessary, or unworkable; or marked as failed as a solution requirement for some other reason.

Recommended Technique: User Stories

User stories are commonly used for change-driven requirements development. They briefly describe the functionality your solution provides to its users. You should define acceptance and evaluation criteria for each user story so you can prove that its functionality has been met by the solution. Business analysts write user stories from the user's point of view. User stories contain the following:

- The actor or stakeholder benefiting from the user story
- A high-level description of the functionality in the story
- The business benefits that the story delivers

User stories create customer ownership of requirements by having actual users write stories about what the solution needs to accomplish for them. You can use these stories to support your iterative, incremental development environments. They allow you to define key features of the solution that can be implemented by the project team in one to three weeks. (Remember, user stories for Agile projects are for small bites of projects, typically time bound, and short in duration.)

Additional Techniques to Consider

The *BABOK® Guide* recommends using one or more of the following additional techniques when you are specifying and modelling the requirements for your project. They are summarized for you here:

Acceptance and Evaluation Criteria Acceptance criteria define the requirements that must be met for a solution to be acceptable to stakeholders. Evaluation criteria are the measures used to assess those requirements.

Business Capability Analysis This technique is used to describe what an enterprise or part of an enterprise is able to do. These business capabilities represent features or functions of the enterprise.

Business Model Canvas This diagnostic planning tool can be used to describe the rationale for requirements relative to the current state of the business.

Concept Modelling Concept models are used to define terms and relationships that are relevant to proposed change and the enterprise where the change is taking place.

Data Dictionary Data dictionaries are technical in nature and are used to define data elements, their meanings, and their allowable values. Building a data dictionary for your project might be a necessary step in your requirements specification and modelling activities.

Decision Modelling Decision models represent decisions and the elements of decision making that are required in a particular model.

Functional Decomposition Functional decomposition allows you to systematically break down the solution scope components into smaller pieces and more detailed requirements based on similar or related functionalities or features.

Glossary Glossaries allow you to document key business terms along with their definitions. Much of the information that goes into the glossary will be a result of your business, stakeholder, solution, and transition requirements development efforts.

Interface Analysis Interface analysis establishes a basis for interoperability by recognizing inputs, outputs, and key data elements that enable your solution and its components to interact with everything else that is already out there.

Organizational Modelling Most of us have seen an organization chart showing the hierarchy. This is an example of an organizational model. The model defines the purpose and structure of an organization or an organizational unit.

Prototyping Prototyping is a great way to add additional details to your solution interface requirements and integrate those requirements with the other requirements defining the new solution. Essentially a prototype is an initial or preliminary version of a solution or system.

Roles and Permissions Matrix This matrix separates and models the user duties and external interfaces associated with a specific solution.

Root Cause Analysis This technique is used to model the root causes of a

problem or need as part of the rationale for a change or a new solution.

Scope Modelling Scope models visually show stakeholders the boundary of the solution scope. During requirements analysis, the business analyst can place capabilities either inside or outside of this scope.

Stakeholder List, Map, or Personas Identifying stakeholders and their roles is a key part of analyzing and specifying requirements. Use the stakeholder list, map, or personas technique to help you do a thorough job with identifying your stakeholders and their characteristics.

Once you have selected and applied one or more techniques as part of your requirements specification and modelling efforts, you are ready to continue with other requirements analysis tasks. We will discuss those tasks right after we review the output of our current task, the specified and modelled requirements for the project.

Create the Specified and Modelled Requirements

Specified and modelled requirements are used as an input to several solution-related tasks. Remember the definition for analyzed requirements: the modelled and specified stakeholder and solution requirements for your project. [Table 6.9](#) summarizes the destination tasks utilizing your analyzed requirements.

TABLE 6.9 Output: Specify and model requirements.

Output	Output Destinations	Destination Knowledge Area
Requirements (specified and modelled)	Verify requirements.	Requirements Analysis and Design Definition
	Validate requirements.	Requirements Analysis and Design Definition

Exam Spotlight

Remember, the business requirements are analyzed and created by tasks in the Strategy Analysis knowledge area, and the transition requirements are analyzed and created by tasks in the Solution Evaluation knowledge area. Your stakeholder and solution requirements are created by specifying and modelling requirements in the Requirements Analysis and Design Definition knowledge area.

You are responsible for specifying and modelling the stakeholder and solution requirements on your project. You will have to decide whether this work is to be done alone or as a team effort. If you perform this task alone, you will specify and model the requirements, create the requirements package, and then communicate those requirements with the stakeholders for their review and/or

approval. You can also choose to involve the stakeholders in this task so that the requirements package contents and the requirements themselves are not a surprise to anyone.

Now let's take a look at the next task in the Requirements Analysis and Design Definition knowledge area—verifying requirements.

Verify Requirements

Requirements verification is a quality check of the analyzed requirements. This task involves making sure your requirements are correct and complete and that they meet the quality standards defined for them. Requirements verification can be thought of as an internal check by the business analysis team and the involved stakeholders to make sure the requirements are ready to be seen out in public. Out-in-public requirements are ready for formal review and approval so they can be used as the basis for subsequent project work, such as design and implementation.

[Figure 6.6](#) summarizes the inputs, guidelines, tools, outputs, techniques, and associated tasks used to verify requirements.

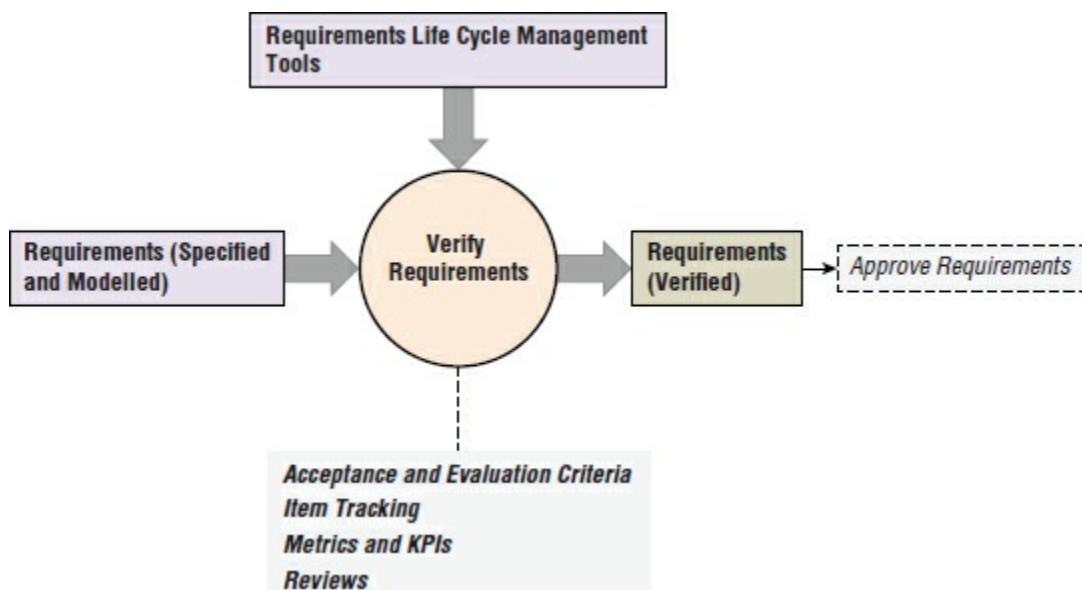


FIGURE 6.6 Task summary: Verify the requirements.

To verify the requirements, you need to have those requirements in hand. These requirements can be of many types and in many states, as long as they are not the stated requirements you elicited from your stakeholders.

The single, key input needed to verify the requirements for your project is the specified and modelled requirements. Let's take a look at this input in greater detail:

Specified and Modelled Requirements Specified and modelled requirements and/or designs are produced in the form of text, matrices, and/or diagrams. They take the business analysis information from the stakeholders and make sense of what was said.

There are additional inputs that may be used by business analysis tasks: guidelines and tools. Let's take a look at the tool that may also be used as an input when specifying and modelling requirements:

Requirements Life Cycle Management Tools These software-based products are frequently used to record, organize, store, and share requirements and designs.

[**Table 6.10**](#) summarizes the inputs, guidelines, and tools for this task and lists the task and knowledge area sources for each input used to verify requirements.

TABLE 6.10 Inputs, Guidelines, and Tools: Verify requirements.

Task Input	Input Type	Input Source	Source Knowledge Area
Requirements (specified and modelled)	Input	Specify and model requirements.	Requirements Analysis and Design Definition
Requirements life cycle management tools	Guidelines and tools		

Any type of requirement can be verified, including business, stakeholder, solution, or transition requirements. Because verification is a quality check of the analyzed requirements, the requirements cannot be the stated requirements or the business analysis information resulting from your elicitation efforts. They must have been analyzed, specified, and modelled.

Well-written requirements aren't a random event—they are planned and thoroughly reviewed and revised to meet most, if not all, of the characteristics listed in the *BABOK® Guide*. The elements you focus on during requirements verification include a set of characteristics for well-written requirements and the work activities to make sure these characteristics are properly applied. There are three elements that are part of this task. They include the following:

- Characteristics of requirements and designs quality
- Verification activities
- Checklists

Let's review these three elements used to verify requirements in more detail:

Characteristics of Requirements and Designs Quality The *BABOK® Guide* provides you with the nine characteristics of well-written, high-quality requirements. Think of this as your well-written requirements quality checklist and make frequent use of it during your requirements development efforts.

Atomic Atomic requirements are a set of requirements organized as cohesive sets of information rather than random chunks of information. They are self-contained and can be understood independently of other requirements or designs.

Complete Your goal is to produce a complete set of requirements defining what

is needed for a solution or a solution component. Your requirements should specify everything that is needed at the appropriate level of detail. While building your requirements document, ask yourself if you have missed anything. If you see unresolved issues or incomplete documentation, then fix it.

Concise Concise requirements do not contain any extra information or content. There is no “gold plating,” which is extra functionality that is not required to achieve the solution scope or meet the business need.

Consistent Consistent requirements do not contradict or conflict with one another. If they do, they should be revised or removed. Consistency should also be applied to the level of detail in your requirements document structure. All requirements at a specific numbering level in your document should be written at the same level of detail. Checking for consistency often requires a manual review and analysis of the complete set of requirements.

Feasible Feasibility of requirements relates to implementation. The existing infrastructure, budget, timeline, and resources of the organization should be adequate to implement your requirements as defined. If not, your requirements will need to be revised to include any additional capabilities that are needed to implement them.

Prioritized Verified requirements should be ranked, grouped, or negotiated relative to their importance and value versus all other requirements. Requirements prioritization involves the stakeholder as well as the business analysis team.

Testable Can you ensure that a requirement is met by your resulting solution? If not, that requirement should be removed or revised because all requirements must be measurable and provable in some way. Testing proves that what is needed is indeed present in the solution. That means that each requirement in your document must be provable as a single, standalone statement or within a specific functional scenario. Numerous techniques exist for ensuring that requirements are met ([Table 6.11](#)).

TABLE 6.11 Techniques for ensuring requirements are met

Technique	Description
Analysis	Performs analysis of the system characteristics to prove it works
Demonstration	Involves running the full system in the normal mode of operation
Execution	Uses another system or testing equipment to simulate your data
Inspection	Looks at (inspects) characteristics of the system or its output
Prior qualification	Recognizes that a component has already been tested and is being used unmodified

Unambiguous Can your requirements be interpreted in more than one way? If so, they are ambiguous. Well-written requirements have only one meaning.

People should not be able to read your requirements and come up with multiple meanings. When terms have multiple meanings, consider defining those terms in your glossary.



Real World Scenario

Choose the Right Word

Here is an example of why choosing the right word is not always as easy as you might think. Let's take a simple word: *bug*. Susan's mother says that a bug is an insect of some sort. Terri's nephew says that a bug is something he needs to fix in his software code. A military customer says a bug is a secret listening device that shouldn't be there. Funny thing is that they are all correct.

Here's why. In the dictionary, a bug is commonly defined in one of two ways: any small insect or a concealed microphone. However, in the software world, a bug is the name given to an error in software application code. Synonyms for the word *bug* include germ, virus, and wiretap.

Watch your word choices. Words can mean many different things when they are used in your requirements document. If you need to, document the word and your selected meaning in your glossary to make sure everyone uses that word the way you intended.

Understandable Requirements need to be understood by the key stakeholders as well as by the members of the project team. Requirements should be written using common terms that are understood by everyone.

Verification Activities You will find yourself verifying requirements many times during the project life cycle. When you are doing this task, remember to look at all of the specified requirements and designs, including text, tables, and graphical models. Verification activities include checking for the following:

- Compliance with organizational standards
- Correct use of modelling notations
- Completeness within each model
- Inconsistencies between models
- Understandable terminology and correct use of terms

Checklists Checklists are an excellent quality control technique to apply to your requirements documentation. Checklists ensure that important items are included in the final requirements deliverables for your project, such as the nine characteristics of well-written requirements previously discussed. Checklists may also contain process steps to guide you through the requirements verification activities that should be done on your project.

There are several techniques that you can choose to apply when verifying your requirements. Let's take a closer look at these techniques.

Techniques to Consider

The *BABOK® Guide* recommends using one or more of the following techniques when you are verifying project requirements:

Acceptance and Evaluation Criteria As part of requirements verification, you must determine the quality criteria against which you will evaluate your requirements. This gives the folks verifying your requirements the metrics to use in their evaluation of them.

Item Tracking Item tracking is one component of issue management. This technique allows a business analyst to maintain focus on business-analysis-related problems and issues across the project life cycle. Any problems identified during requirements verification may be tracked using this technique.

Metrics and Key Performance Indicators (KPIs) Metrics are quantifiable indicators used to measure progress. KPIs are specific numerical measurements that represent the degree of progress toward something. Both are used to identify and evaluate the quality of requirements and/or designs.

Reviews Reviews are frequently used to inspect requirements documentation and identify requirements that are not of acceptable quality. A review is a meeting with a tour guide. Your destination is the verified requirements, and your meeting agenda will walk you through the possibilities in order for the group to evaluate and revise the requirements.

Once you have selected and applied one or more techniques as part of your verification efforts, you are ready to continue with the other requirements analysis tasks in this knowledge area. We will discuss those tasks later in the chapter. First, let's take a look at the verified requirements produced by this task.

Produce the Verified Requirements

Verified requirements are well-written requirements that can be used in other project work, such as technical design. Verified requirements must be of reasonable quality so that the team can use them and not worry about having to redo things later. Verified requirements are used as input to several business analysis tasks, including validating requirements and communicating verified requirements with your stakeholders for their review or approval. [Table 6.12](#) summarizes these destination tasks and their knowledge areas.

TABLE 6.12 Output: Verify requirements.

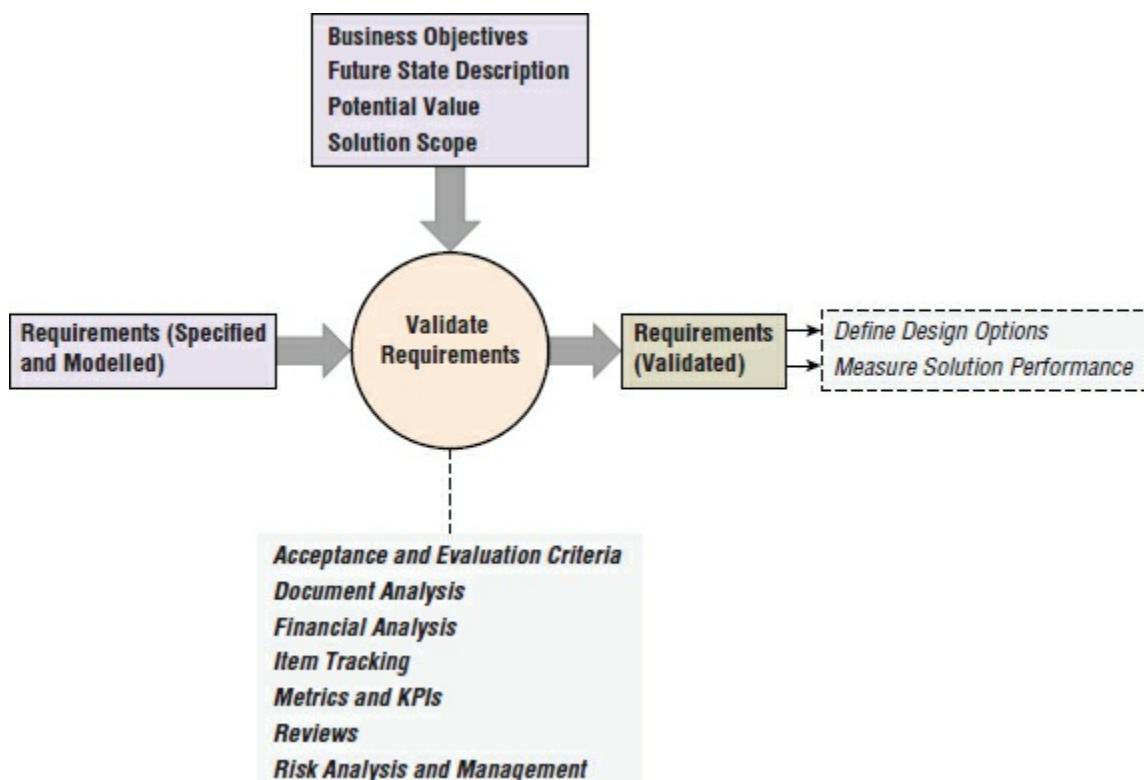
Output	Output Destinations	Destination Knowledge Area
Requirements (verified)	Approve requirements.	Requirements Life Cycle Management

You are responsible for making sure that the quality criteria for your requirements have been met. Any business analysis stakeholder may assist you with this task, including your domain and technical experts.

Now, let's look at the next task found in the Requirements Analysis and Design Definition knowledge area—validating the requirements.

Validate Requirements

Validating requirements ensures that your requirements align to the business requirements and the business objectives for your project. By definition, valid requirements contribute directly or indirectly to the project's business case. Requirements validation is ongoing across the project life cycle; it ensures that each level of detail you add to your requirements aligns with the big picture. [Figure 6.7](#) summarizes the inputs, guidelines, tools, outputs, techniques, and associated tasks used to validate requirements.



[FIGURE 6.7](#) Task summary: Validate the requirements.

The inputs to validating requirements include the specified and modelled requirements that you are validating. Let's look at this task input in greater detail:

Requirements (Specified and Modelled) Specified and modelled requirements and/or designs are produced in the form of text, matrices, and/or diagrams. They take the business analysis information from the stakeholders and make sense of what was said. Validation activities may be done on any type of requirements or designs. Sometimes, validation activities begin before verification activities are complete.

There are additional inputs that may be used by business analysis tasks: guidelines and tools. Let's take a look at the guidelines and tools that may also be used as inputs when validating requirements:

Business Objectives Business analysts use the defined business objectives to make sure that the requirements are validated and actually will deliver the business benefits.

Future State Description Validation is incomplete unless the business analyst can prove that the requirements will achieve the desired future state as part of the defined solution scope.

Potential Value The potential value is used as a benchmark for assessing the value that will be delivered to the business by the requirements after they are implemented.

Solution Scope Experienced business analysts make certain that the requirements providing benefits to the business are within the boundaries of the solution scope.

Refresher: Defining Business Requirements, Needs, Goals, and Objectives

Business Requirements The defined problem, opportunity, or need based upon the current state of the business

Business Need A problem or opportunity that an organization is facing within the framework of the organization's business goals and objectives

Business Goal A future state that an organization is seeking to establish and maintain

Business Objective An objective and measurable result that indicates a business goal has been achieved

[Table 6.13](#) summarizes the inputs, guidelines, and tools for this task; it also lists the task and knowledge area sources for each input used to validate requirements.

TABLE 6.13 Inputs, guidelines, and tools: Validate requirements.

Task Input	Input Type	Input Source	Source Knowledge Area
Requirements (specified and modelled)	Input	Specify and model requirements.	Requirements Analysis and Design Definition
Business objectives	Guidelines and tools	Define future state.	Strategy Analysis
Future state	Guidelines	Define future	Strategy Analysis

description	and tools	state.	
Potential value	Guidelines and tools	Define future state.	Strategy Analysis
Solution scope	Guidelines and tools	Define change strategy.	Strategy Analysis

You need to keep a number of elements in your line of sight as you validate your requirements. They include the following:

- Identifying any assumptions
- Defining measurable evaluation criteria
- Evaluating your alignment with the solution scope

Let's review each of these elements in more detail. Each of these elements deals with a detailed area of the project's desired future state, focusing on making sure that the defined business benefits of the project are achievable, and showing proof that those business benefits have been achieved.

Identify Assumptions Within a project's business case, you might have documented assumptions about realizing the business benefits. Any assumptions about a specific business benefit should be documented and linked to the requirements that deliver those benefits. This might introduce additional risk into the premises contained in the business case, since it is possible that the assumptions might not be true in the end.

Define Measurable Evaluation Criteria One item of interest found in your business case is the business benefit that the project will provide to the organization once the project is complete and the solution is up-and-running. Business benefits can be measured only if you define the measurement criteria and how you will evaluate whether you have achieved them. If you are lucky, they were defined in the business case. If not, you will need to define them now during requirements validation.

Evaluate Business Case Alignment Beware of requirements that are beloved by your stakeholders yet add little or no business value to the organization. The best rule to follow is that requirements that do not align with the solution scope result in either a revised business case or their removal from the solution scope. Watch out for the opportunity cost of implementing such requirements. Sometimes it is best to remove requirements that don't align with the solution scope versus investing the time and money to make them work. Your time and money might be better spent elsewhere. Every opportunity (or requirement) has an associated cost.

There are several techniques that you can choose to apply when validating your project requirements. Let's take a look at those techniques right now.

Techniques to Consider

The *BABOK® Guide* recommends using one or more of the following techniques when you are validating your project's stakeholder, solution, or transition

requirements relative to the project's business requirements and solution scope.

Acceptance and Evaluation Criteria Acceptance criteria are the quality metrics that must be met by a requirement, a solution component, or the solution itself in order to be accepted by the project stakeholders. Evaluation criteria are used to measure how successful a deployed or operational solution is in providing business benefits.

Document Analysis Document analysis is used during requirements validation activities to identify previously documented business needs.

Financial Analysis This technique allows the business analyst to define and confirm the expected financial benefits associated with the validated requirements.

Item Tracking Item tracking makes sure that any problems or issues related to validation are managed and resolved as part of the issue management process.

Metrics and Key Performance Indicators (KPIs) Metrics and KPIs are used to select and define performance measures for your requirements, solution components, or solutions.

Reviews This technique is used frequently by business analysts seeking agreement from their stakeholders that the requirements meet their needs and can be considered validated.

Risk Analysis and Management Risks are generated when you make assumptions about your requirements, such as achieving the potential business benefits or building a solution that adds value to the organization. Risk analysis might result from the need to evaluate those assumptions and the associated potential risks.

Let's move on and take a look at the validated stakeholder, solution, or transition requirements that are produced by this task.

Produce the Validated Requirements

Validated requirements are stakeholder, solution, or transition requirements that are aligned with the business goals and objectives found in your project's business requirements or business case. These requirements benefit the organization and will provide value when they are implemented by the resulting solution. Remember that validated requirements fall within the framework of your defined solution scope.

Validated requirements are used as an input to two business analysis tasks, including measuring solution performance as part of the Solution Evaluation knowledge area. [Table 6.14](#) summarizes these destination tasks and their knowledge areas.

TABLE 6.14 Output: Validate requirements.

Output	Output Destinations	Destination Knowledge Area

Requirements (validated)	Define design options.	Requirements Analysis and Design Definition
	Measure solution performance.	Solution Evaluation

All business analysis stakeholders are impacted by or involved in requirements validation activities during your project. As the business analyst, you are ultimately responsible for ensuring that the solution scope and requirements align with the business requirements and deliver value to the organization.

Now let's take a look at the next task in the Requirements Analysis and Design Definition knowledge area—defining the requirements architecture.

Define Requirements Architecture

Project requirements should not be a jumble of information. Your requirements need to be structured and organized into a cohesive set of information that is complete, comprehensive, consistent, and understandable to your stakeholders. You are responsible for deciding how to structure your individual requirements, group those requirements, and show the relationships between them.

A good requirements architecture targets consistency, repeatability, and a high level of requirements quality. The requirements should collectively support each other and produce a useful outcome for the stakeholders.

The Requirements Architecture Answers the Following Questions for the Business Analyst

- Which models are appropriate for the business analyst to use?
- How are the requirements structures relevant to different stakeholders?
- In what ways do the models and requirements interact with and relate to one another?
- How do the parts of the requirements document fit into a cohesive whole?
- How do the requirements work together to achieve the overall objectives?
- How can trade-off decisions about requirements within this framework be made?

Remember that requirements architecture and requirements traceability are *not* the same thing. While traceability may represent and manage the relationships between requirements, it does not prove the solution is a cohesive whole that will actually work.

[Figure 6.8](#) summarizes the inputs, guidelines, tools, outputs, techniques, and associated tasks used to define the requirements architecture.

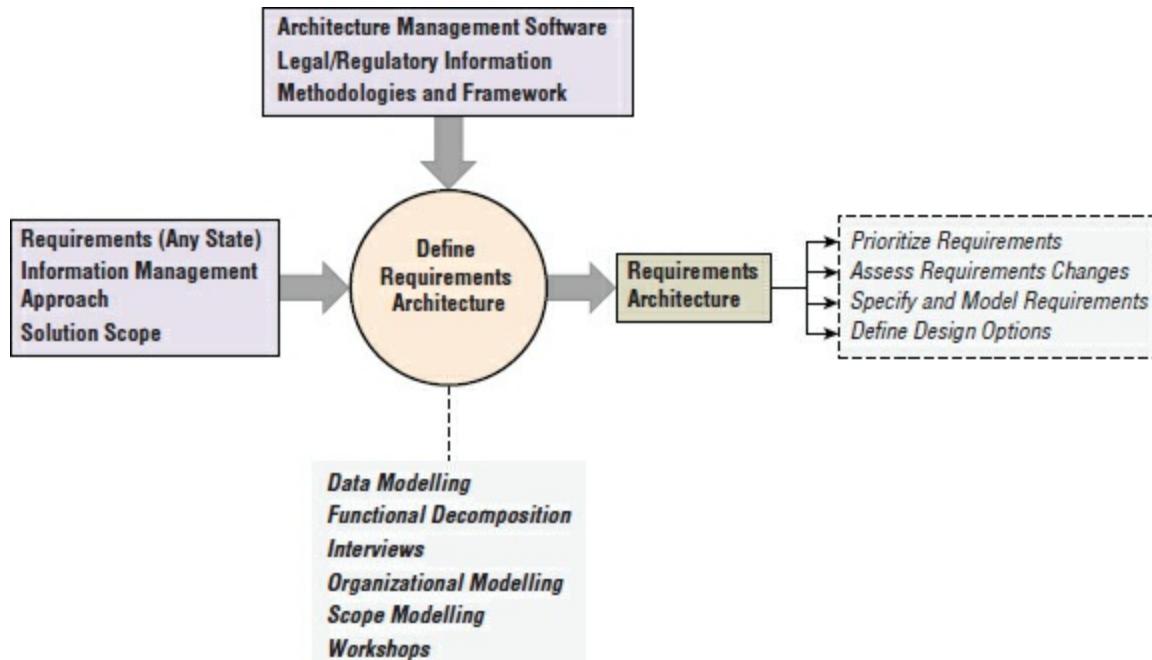


FIGURE 6.8 Task summary: Define requirements architecture.

Several key inputs, guidelines, and tools are needed to help you define your requirements architecture during requirements analysis and design. These key inputs are produced by a number of other business analysis tasks and include the requirements themselves, the information management approach, and the solution scope. Let's take a look at each of these task inputs in greater detail:

Requirements (Any State) The focus of requirements analysis and design takes the requirements provided during elicitation and derives the real requirements for your project. The requirements are analyzed, documented, and modelled based on the requirements architecture you create with this task.

Information Management Approach Created during Business Analysis Planning and Monitoring, the information management approach defines how business analysis information will be stored and accessed.

Solution Scope The selected requirements architecture must describe the solution scope fully and from all stakeholder perspectives. Think of the solution scope as the frame for the more detailed picture you are painting with your project requirements.

There are additional inputs that can be used by business analysis tasks: guidelines and tools. Guidelines are essentially instructions or descriptions on why and how a business analyst will undertake a task. Tools, on the other hand, are methods for conducting a business analysis task or shaping a task output. Let's take a look at the guidelines and tools that may also be used as inputs when defining the requirements architecture:

Architecture Management Software Many business analysts use modelling software to build and manage the requirements architecture. The focus is on the

volume, complexity, and version control for the information in the architecture and the relationships it contains.

Legal/Regulatory Information Oftentimes, there are rules, regulations, contracts, or standards-based constraints that must be incorporated into the requirements architecture and followed.

Methodologies and Framework Many organizations have a predetermined set of models and relationships between those models that are to be used in the requirements architecture.

[Table 6.15](#) summarizes the inputs, guidelines and tools to this task and lists the task and knowledge area sources for each input used to define the requirements architecture.

TABLE 6.15 Inputs, Guidelines, and Tools: Define requirements architecture.

Task Input	Input Type	Input Source	Source Knowledge Area
Requirements (any state)	Input		
Information management approach	Input	Plan business analysis information management.	Business Analysis Planning and Monitoring
Solution scope	Input	Define change strategy.	Strategy Analysis
Architecture management software	Guidelines and tools		
Legal/regulatory information	Guidelines and tools		
Methodologies and framework	Guidelines and tools		

There are several elements that business analysts should consider and address when deciding how to structure and organize requirements on their projects, such as the following:

- Requirements viewpoints and views
- Template architectures
- Completeness
- Relate and verify requirements relationships
- Business analysis information architecture

Let's look at each of these elements in greater detail:

Requirements Viewpoints and Views *Viewpoints* are templates for specific stakeholder groups, defining how requirements will be represented, organized, and related for each group. Viewpoints typically address the types of models and model notations to be used, attributes to be included, and

relationships to be identified and maintained. Requirements documents using a set of viewpoints from different perspectives make a stronger set of requirements for your project.

The actual set of requirements and designs for a solution from a particular viewpoint are referred to as a *view*. A collection of views makes up the requirements architecture for a solution. Viewpoints tell you what information to provide for each stakeholder group while views describe the actual requirements and designs that are produced.

Template Architectures Many business analysts use predefined, template architectures as the starting point for building a custom requirements architecture. These architectural frameworks are typically a collection of standard viewpoints across the organization.

Completeness A complete set of requirements should specify everything that is needed at the appropriate level of detail. The requirements architecture should help you assess if you have missed anything while building your requirements document. Structuring requirements using different viewpoints also helps with completeness and identifying potential gaps.

Relate and Verify Requirements Relationships Applying traceability techniques as part of the Trace Requirements task shows the relationships between requirements. When defining or using the requirements architecture, business analysts also need to examine the traced requirements to make sure the relationships meet certain quality criteria. [Table 6.16](#) defines each item.

TABLE 6.16 Requirements relationships quality criteria

Criterion	Description
Defined	A relationship exists between the requirements, and the type of relationship is described.
Necessary	The relationship is necessary for understanding the requirements.
Correct	The elements have the relationship described.
Unambiguous	There are no relationships linking elements in different or conflicting ways.
Consistent	Relationships are described in the same way with the same set of standard descriptions in the viewpoints.

Business Analysis Information Architecture The business analysis architecture is one type of information architecture. Interestingly enough, the information architecture that is defined by the Information Management Approach is a component of the requirements architecture. It defines relationships for different types of information, such as requirements and designs. The optimal approach is to define this architecture before setting up information technology and infrastructure, such as requirements life cycle management tools, architecture software, or document repositories.

There are several techniques that you may choose to apply when defining the

requirements architecture for your project. You should consider using functional decomposition and organizational modelling to assist you in determining what the best requirements architecture might be for your project. Let's take a look at these recommended techniques in greater detail right now.

Recommended Technique: Functional Decomposition

Functional decomposition breaks down or decomposes the solution scope into its component parts based on a group of related functionalities. You can then create a model of what needs to be done to deliver all or part of the solution. Functional decomposition is an excellent way to break things into manageable pieces and to understand the relationships between those pieces.

Functional decomposition is typically used during requirements analysis to break an organizational unit or the solution scope into its component parts. Each resulting part may have its own set of requirements. This is similar to building a work breakdown structure (WBS) for a project where you break down or decompose the project scope into phases, work packages, and deliverables. The *BABOK® Guide* recommends breaking things down until the parts found at the lowest level cannot be broken down further. You should then analyze each part independently.

Recommended Technique: Organizational Modelling

Organizational modelling is used during requirements analysis to describe the organizational units, the stakeholders, and the relationships between them. This allows you the opportunity to structure your project requirements based upon the needs of each stakeholder group.

Most of us have seen an organization chart showing the hierarchy of an organization. This is an example of an organizational model. The model defines the purpose and structure of an organization or an organizational unit. When this technique is used for business analysis, an organization chart that shows the organizational units, lines of reporting, the roles, and the people in those roles is basically built.

Additional Techniques to Consider

The *BABOK® Guide* recommends using one or more of the following additional techniques when you are defining the requirements architecture for your project. They are summarized for you here:

Data Modelling Data models organize requirements by describing the concepts and relationships between the concepts that are relevant to the defined solution scope. Business analysts use this technique to describe the data components of the requirements architecture.

Interviews Interviews are a way for the business analyst to speak directly to key stakeholders to define the requirements architecture and structure in a collaborative fashion.

Scope Modelling Scope models organize requirements based on the solution components to which they are related. Solution components are parts of a solution spanning the enterprise architecture of the organization, including business processes, software applications, or hardware.

Workshops Workshops are a way for the business analyst to work with groups of key stakeholders to define the requirements architecture and structure in a collaborative fashion.

Once you have selected and applied one or more techniques as part of your requirements architecture definition efforts, you are ready to continue with the other requirements analysis tasks in this knowledge area. We will discuss those tasks later in the chapter. First let's look closely at the requirements architecture output that helps you organize the requirements during your analysis work.

Produce the Requirements Architecture

The *requirements architecture* defines an organized structure for stakeholder and solution requirements and the documented relationships between them. The requirements structure defines the scope of each specific model or set of requirements, and provides a location where each specific requirement can be found. The requirements structure is not the same as traceability. Traceability links related requirements. The requirements structure tells you where the specific requirements for a project can be found.



Real World Scenario

One Size Does Not Fit All

Ginger was helping the IT department structure a set of requirements documents for their IT projects. She was also tasked with building templates for each of those documents so that project teams could use them consistently across the organization. On first glance, this requirements-focused consulting assignment seemed very straightforward. And it was—at least until she started asking questions about the projects and the current process for developing requirements.

The organization had projects in all sizes. They had extra-small maintenance and support efforts lasting a few weeks and medium-size software development projects lasting about six months or so. They were doing agile development of their customer-facing websites and inline capabilities in six-week sprints. They had small projects that were noncritical and focused on a few months of work from a small team and mission-critical complex projects lasting for a year or more and costing millions of dollars.

Ginger quickly decided that this was not a “one size fits all” project environment. The project teams would have to tailor her requirements document set for their project type and scale it for the size of their efforts.

That would be the resulting requirements structure that they would use during requirements development.

Using the project taxonomy that was provided, Ginger built a set of requirements documents that could be tailored and scaled to fit the projects. She also built a guidance document providing guidelines for scaling and tailoring the requirements documents based on project type, complexity, cost, and associated risks. This generic document set and guidance document became part of the requirements development process and part of the organizational process assets for the company.

Project teams used Ginger's generic document set as an input to organizing the requirements on their projects. They tailored and scaled the generic documents to fit their projects within the provided framework. The resulting requirements structure was used to document all of their project requirements.

The requirements architecture is used as an input to defining the change strategy and for analyzing the potential value of a particular solution. [Table 6.17](#) summarizes these destination tasks and their knowledge areas.

TABLE 6.17 Output: Define requirements architecture.

Output	Output Destinations	Destination Knowledge Area
Requirements architecture	Prioritize requirements.	Requirements Life Cycle Management
	Assess requirements changes.	Requirements Life Cycle Management
	Specify and model requirements.	Requirements Analysis and Design Definition
	Define design options.	Requirements Analysis and Design Definition

A number of stakeholders are involved with defining the requirements architecture. Remember that the primary responsibility for deciding how to organize requirements falls to the business analyst. The project manager uses the resulting organized set of requirements to verify solution scope and assess the work that needs to be done. Other business analysis stakeholders participating in requirements organization include the following:

- Domain SME
- Implementation SME
- Project manager
- Sponsor
- Tester

Any stakeholder can use the requirements architecture to assess the completeness of the requirements for a project.

Now let's move on and look at the next task in the Requirements Analysis and Design Definition knowledge area, Define Design Options.

Define Design Options

A design is a usable representation of a solution. For example, a text description, a screen mockup, or prototype that represents a solution. A design option is the possible form a solution might take. There are often multiple design options or alternatives that can satisfy a set of requirements, which a business analyst might represent as three different prototypes. Remember that design options are tactical in nature versus the more strategic change strategy (solution) they will be implementing. Over time, trade-off decision making is required in order to choose the best *design option* to get the job done and achieve the desired future state.

Is It a Design or a Solution?

As you become more deeply involved in a project, it's easy to become lost in the details. Remember, the *BABOK® Guide* defines terms to help you maintain clarity.

Design A usable representation of a solution

Solution A specific way of satisfying a need

When you assess one or more solutions, be sure to evaluate the solution or solutions relative to the approved stakeholder and solution requirements for your project. If the requirements are not yet approved, you will not be able to make a final decision on whether your solution meets the requirements, addresses the business need, and provides value to the business.

You may find yourself assessing multiple design options to determine which option is the best. The option you choose must meet the stakeholder and solution requirements and address the business need. You will evaluate and compare each option with the requirements, as well as with one another. You are in search of the design option that delivers the most value to the business, so you will compare the advantages and disadvantages of each proposed solution.

[Figure 6.9](#) summarizes the inputs, guidelines, tools, outputs, techniques, and associated tasks used to assess a proposed design option or a set of design options.

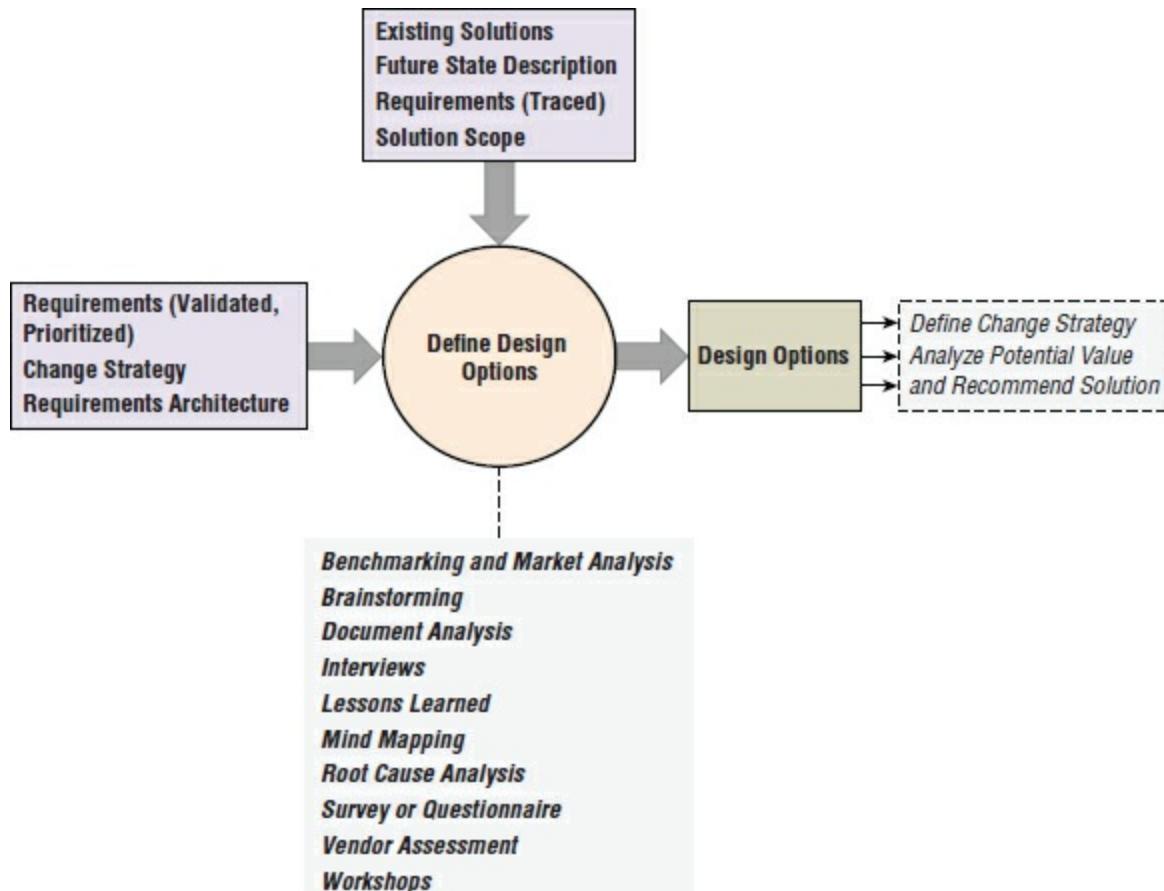


FIGURE 6.9 Task summary: Define design options.

Several key inputs are needed to adequately define design options. These key inputs are produced by a number of other business analysis tasks; they include the change strategy and the requirements architecture discussed in the previous section. Let's look at each of these task inputs in greater detail:

Change Strategy The change strategy, defined during Strategy Analysis, describes the approach that will be taken to achieve the desired future state. This impacts the design options for tactically getting from the current state to this future state.

Requirements (Validated, Prioritized) Prioritized and validated stakeholder and solution requirements allow you to define design options and solution components relative to the most important requirements on your project.

Requirements Architecture The requirements architecture defines the full set of requirements and their relationships. This information is required when defining design options to make sure you don't miss anything.

There are additional inputs that may be used by business analysis tasks: guidelines and tools. Let's take a look at the guidelines and tools that may also be used as inputs when defining design options:

Existing Solutions On many projects, existing products or services are components of one or more design options. This includes third-party products and services that were built external to the organization.

Future State Description The future state description, defined in Strategy Analysis, describes the desired future state of the enterprise. The design options being defined are part of this future state and should be evaluated relative to where the enterprise wants to be when the solution is implemented and operational.

Requirements (Traced) Traced requirements should be used when defining design options to make sure all known requirements are fulfilled by the solution.

Solution Scope Solution scope provides the boundaries for the design options by telling the business analyst what is in and out of scope for the solution.

[Table 6.18](#) summarizes the inputs, guidelines, and tools for this task; it also lists the task and knowledge area sources for each input used to assess the proposed solution.

TABLE 6.18 Inputs, Guidelines, and Tools: Define design options.

Task Input	Input Type	Input Source	Source Knowledge Area
Requirements (validated, prioritized)	Input	Prioritize requirements.	Requirements Life Cycle Management
	Input	Validate requirements.	Requirements Analysis and Design Definition
Change strategy	Input	Define change strategy.	Strategy Analysis
Requirements architecture	Input	Define requirements architecture.	Requirements Analysis and Design Definition
Existing solutions	Guidelines and tools		
Future state description	Guidelines and tools	Define future state.	Strategy Analysis
Requirements (traced)	Guidelines and tools	Trace requirements.	Requirements Life Cycle Management
Solution scope	Guidelines and tools	Define change strategy.	Strategy Analysis

When you perform the Define Design Options task, you are expected to address the several elements of that task. These elements guide you in getting the task done by doing the following:

- Defining solution approaches
- Identifying improvement opportunities
- Allocating requirements

- Describing design options

Let's take a look at each element in greater detail:

Define Solution Approaches The *solution approach* describes how you will go about building and implementing the solution itself. Solution components may be created or purchased, or perhaps some combination of “build and buy” will be used.

Identify Improvement Opportunities Improvement opportunities often occur when you are defining design options. There may be an opportunity to increase efficiency by automating or simplifying the work that people perform. The solution may be able to provide better access to information.

You might also find that your design options identify capabilities beyond the required capabilities found in your stakeholder or solution requirements. You will need to decide whether these additional solution capabilities provide value to the organization, either now or in the future.

Allocate Requirements *Requirements allocation* assigns requirements to *solution components* and *releases*. One goal of requirements allocation is to maximize benefits and reduce costs for implementing the solution.

Requirements are typically allocated between organizational units, job functions, solution components, or solution releases. This activity is ongoing, beginning when the solution approach is determined and ending after design and implementation of the solution.

Describe Design Options Design options are often developed in parallel with defining the desired future state as part of Strategy Analysis. It is essential that the design options for each design component be valid for the future state.

Design options can describe many things, such as the following:

- Business policies and rules
- Business processes
- People operating and maintaining the solution
- Operational business decisions
- Software applications and application components used in the solution
- Organizational structures and internal/external interactions

Several techniques are available for defining design options. For instance, you should consider adding vendor assessment to your list of possibilities. Let's take a look at this recommended technique in greater detail right now.

Recommended Technique: Vendor Assessment

Vendor assessments allow you to assess an external vendor’s ability to provide all or part of your solution. You look at their technical ability, financial stability, staff skills, and reputation in their workspace. External vendors are often involved in the design, construction, implementation, and maintenance activities on our projects.

Here is a quick list of things you may want to consider:

- Knowledge and expertise
- Experience, reputation, and stability
- Licensing and pricing models
- Product reputation and market position
- Contractual terms and conditions

Vendor assessments are used to ensure that your vendors are reliable and that they will be able to meet your expectations.

Additional Techniques to Consider

The *BABOK® Guide* recommends several techniques when you are defining design options for your project. These techniques are summarized for you here:

Benchmarking and Market Analysis Benchmarking studies are a source of business analysis information, comparing an aspect of the system with an external baseline. Market analysis is a mechanism for determining what external customers want and what your competition provides. Both can be used to identify and analyze existing solutions and market trends.

Brainstorming This technique is used during analysis to generate many ideas from a stakeholder group in a short period of time. The resulting ideas can then be organized and prioritized to identify improvement opportunities and design options.

Document Analysis Business analysts use document analysis to confirm analysis results against existing documents, source information, and other elicitation results. This technique provides information to describe existing solutions, design options, and design elements.

Interviews Interviews involve asking questions of stakeholders to uncover needs, identify problems, or discover opportunities during the requirements analysis process. This technique is used to identify improvement opportunities and design options.

Lessons Learned Lessons learned provide a great way to identify improvement opportunities during requirements analysis activities based upon what others have experienced with previous products and services.

Mind Mapping Mind mapping is a visual, nonlinear, collaborative way of generating, organizing, and prioritizing many ideas from a group of stakeholders. This technique can be used to identify and explore possible design options during requirements analysis.

Root-Cause Analysis This technique helps the business analysts and the key stakeholders understand the underlying cause of problems being addressed by a change and to propose design options to address those problems.

Survey or Questionnaire Surveys and questionnaires allow the business analyst to discover business analysis information about customers, products,

work practices, and attitudes in a structured way from a group of stakeholders. During analysis, they can be used to identify improvement opportunities and design options.

Workshops Workshops are a collaborative and facilitated way to identify improvement opportunities and design options with a group of stakeholders.

Once you have selected and applied one or more of these techniques as part of your design option definition efforts, you are ready to continue with the one remaining analysis and design task at hand. We will discuss that task shortly.

Defining the Design Options

Design options describe ways to satisfy one or more needs, such as the solution approach, potential improvement opportunities that are part of the design option, and the components defining the design option. Each of these ways requires the business analyst to assess the value that each design option delivers to the business. Your project's validated and prioritized requirements are used as an input for defining design options. [Table 6.19](#) summarizes the destinations for the results of your efforts.

TABLE 6.19 Output: Define design options.

Output	Output Destinations	Destination Knowledge Area
Design options	Define change strategy.	Strategy Analysis
	Analyze potential value and recommend solution.	Requirements Analysis and Design Definition

Remember that the design options should be based on the prioritized and validated requirements for your project. Several key business analysis stakeholders might be involved in the selection process when design options are being defined. The project manager will need to plan and manage this definition process as part of the project. Other stakeholders participating in defining design options include the following:

- Domain SME
- Implementation SME
- Operational support
- Suppliers

Now let's take a look at the next task found in the Requirements Analysis and Design Definition knowledge area—analyzing the potential value and recommending a solution.

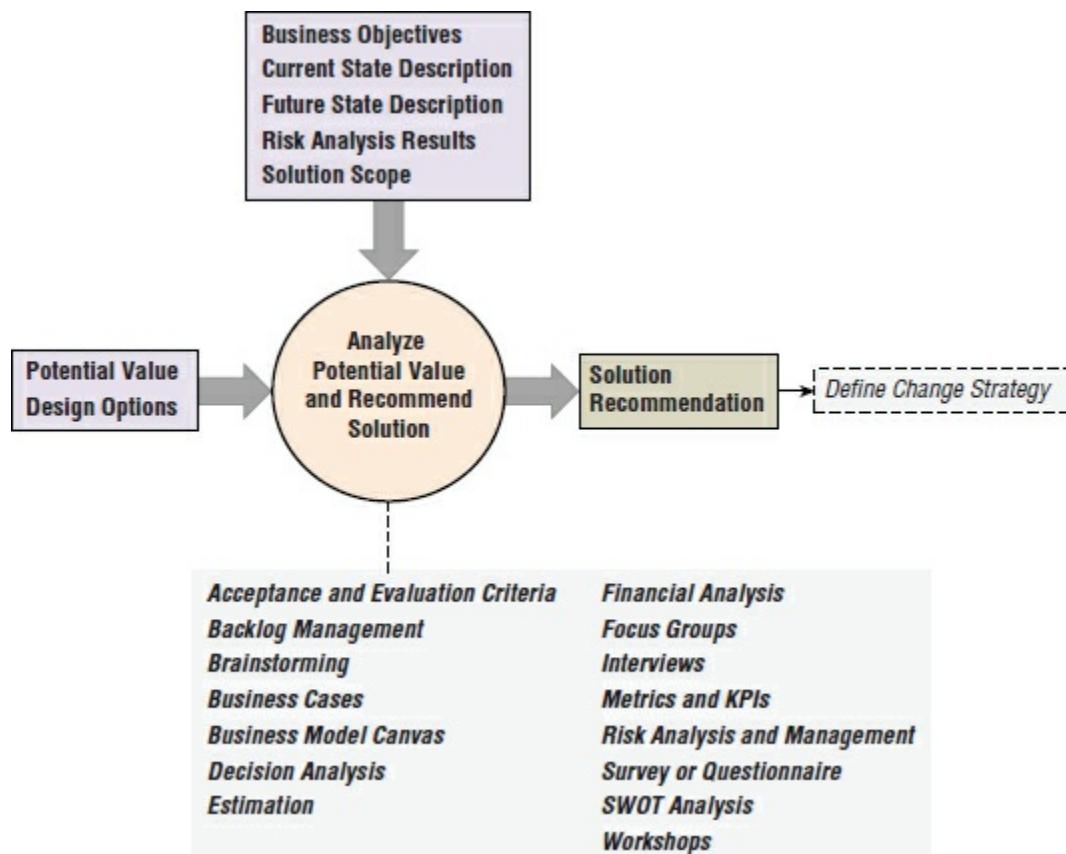
Analyze Potential Value and Recommend Solution

The final task in the Requirements Analysis and Design definition knowledge area is estimating and modelling the potential value of each design option and

figuring out which option is the most appropriate option for the enterprise. Potential value is typically analyzed many times over the course of a change. Remember the “do nothing” option may also be the best recommendation based upon what you know.

The business value of design options and solution approaches changes depending on how requirements are implemented. Some solution implementation approaches cost more money but take less time to perform, such as purchasing a proven commercial product versus developing your own software application. On the flip side, some solution implementation approaches are low cost but may eliminate capabilities in the initial deployment. These low-cost alternatives fail to provide end users with the complete functionality needed to do their jobs.

[Figure 6.10](#) summarizes the inputs, guidelines, tools, outputs, techniques, and associated tasks used for estimating and modelling the potential value of each design option that was defined and figuring out which option is the most appropriate option for the enterprise.



[FIGURE 6.10](#) Task summary: Analyze potential value and recommend solution.

Several key inputs are needed to analyze potential value and recommend a solution. These key inputs are produced by other business analysis tasks. They include potential value and the design options. Let’s look at each of these task inputs in greater detail:

Potential Value *Potential value* is often described in financial terms. It can be

used as a benchmark against the value a particular design option may deliver to the enterprise.

Design Options Design options describe ways to satisfy one or more needs, such as the solution approach, potential improvement opportunities that are part of the design option, and the components defining the design option. Design options are evaluated and compared to one another in order to select and recommend one option for the solution.

There are additional inputs that may be used by business analysis tasks: guidelines and tools. Let's take a look at the guidelines and tools that can also be used as inputs for this task:

Business Objectives Business objectives are measurable results used to indicate a business goal has been achieved. They can also be used to calculate the expected benefits of a design option or solution approach.

Current State Description Defined in Strategy Analysis, the current state describes the existing context within which the work will be completed. The current state provides a baseline to identify and quantify the value delivered by the solution.

Future State Description The future state description describes the desired future state of the enterprise. The design options being defined are part of this future state and should be evaluated relative to where the enterprise wants to be when the solution is implemented and operational.

Risk Analysis Results Assessing risks is a necessary step in analyzing the potential value of design options. There is a level of risk associated with each option that needs to be explored and assessed before decisions are made.

Solution Scope Solution scope provides the boundaries for the design options by telling the business analyst what is in and out of scope for the solution.

Table 6.20 summarizes the inputs to this task and lists the task and knowledge area sources for each input used to assess proposed solutions.

TABLE 6.20 Inputs, Guidelines, and Tools: Analyze potential value and recommend solution.

Task Input	Input Type	Input Source	Source Knowledge Area
Potential value	Input	Define future state.	Strategy Analysis
Design options	Input	Define design options.	Requirements Analysis and Design Definition
Business objectives	Guidelines and tools	Define future state.	Strategy Analysis
Current state description	Guidelines and tools	Analyze current state.	Strategy Analysis
Future state description	Guidelines and tools	Define future state.	Strategy Analysis

Risk analysis results	Guidelines and tools	Assess risks.	Strategy Analysis
Solution scope	Guidelines and tools	Define change strategy.	Strategy Analysis

The elements to be considered when analyzing the potential value of design options and recommending a solution are as follows:

- Describing expected benefits
- Defining expected costs
- Determining value
- Assessing design options and recommending a solution

Let's look at each of these elements in greater detail:

Expected Benefits *Expected benefits* are the positive values that a solution delivers to stakeholders and the enterprise. A solution's value can consist of benefits, reduced risk, compliance, improved usability, or any other positive outcome. Benefits can be calculated for individual requirements, for groups of requirements, or for the overall initiative. Benefits are typically realized over time, often after the solution is implemented and operational.

Expected Costs *Expected costs* are the “flip side” of expected benefits. They are the negative value associated with a solution, such as the cost to acquire, build, or maintain that solution. Expected, or negative, costs include many things, such as resources, operating costs, purchase costs, and maintenance costs.

Exam Spotlight

Business analysts should also remember to look at the *opportunity costs* when estimating the expected cost of a change. Opportunity costs are alternative results that might have been achieved if resources, time, and funds were allocated to a design option that was not selected. The opportunity cost of any design option equals the value of the best alternative design option that was not selected.

Determine Value The potential value of a solution equals the sum of the expected benefits and the associated costs of those benefits. A positive value means that the benefits exceed the costs, while a negative value means that the costs exceed the benefits. The value should be determined at the enterprise level versus for a single group of stakeholders. This potential value is uncertain because of the tangible and intangible costs that are part of the estimating process.

Assess Design Options and Recommending Solution Each design option is assessed based on its potential value. Understanding the cost and effort

required for each solution component is an essential step in evaluating and recommending what should be done. The *BABOK® Guide* recommends taking three factors into account during this process: available resources, solution constraints, and requirements dependencies. [Table 6.21](#) takes a closer look at each factor.

TABLE 6.21 Assessment factors to consider

Factor	Description
Available resources	Allocated resources can impact or limit getting work done to implement the requirements. Sometimes, a business case must be used to justify additional resources to get things done.
Solution constraints	Regulatory requirements may impact how requirements are implemented in the solution. They can also drive requirements prioritization.
Requirements dependencies	Some capabilities support other high-value requirements in the solution yet provide limited capabilities to the organization.

There are several techniques that you may choose to apply when analyzing potential value and recommending a solution. Let's take a quick look at those techniques now.

Techniques to Consider

The *BABOK® Guide* recommends using one or more techniques to analyze potential value and recommend a solution. These techniques are summarized for you here:

Acceptance and Evaluation Criteria One best practice is defining measurable acceptance criteria for each of your project releases. The criteria define the set of requirements that must be met in order for your release and its accompanying capabilities to be considered acceptable to its key stakeholders. Test cases will be written to verify the release using this defined acceptance criteria.

Backlog Management The backlog records, tracks, and prioritizes remaining work. Managed backlogs put work items at the top of the list with the highest business value, making these items the next things to be worked on.

Brainstorming Brainstorming allows a business analyst to identify potential business benefits of the requirements in a collaborative fashion with stakeholders.

Business Cases Be sure to compare the design options, their potential value to the enterprise, and the resulting recommendations against the business goals and initiatives contained in the business case.

Business Model Canvas This planning and monitoring tool is used to understand strategy and initiatives relative to the current state of the business.

Decision Analysis Decision analysis allows you to examine and model the

costs and benefits of different requirements allocation schemes before making or recommending a particular decision.

Estimation Estimating techniques are used to forecast the cost and effort of meeting requirements and to provide financial information with which to rank the design options and select the option to recommend.

Financial Analysis There are many financial techniques business analysts can use to evaluate the financial return of different design options and choose the best possible return on investment (ROI).

Focus Groups Focus groups allow you to get stakeholder input on which design options best meet the requirements and to understand the stakeholder's value expectations relative to the solution.

Interviews Interviews are a face-to-face way to get stakeholder input on which design options best meet the requirements and to understand the stakeholder's value expectations of the solution.

Metrics and Key Performance Indicators (KPIs) As part of analyzing the potential value of design options, business analysts create and evaluate the measurements used to determine value.

Risk Analysis and Management This technique identifies and manages risks that could affect the potential value of the requirements, the design options, and the resulting solution.

Survey or Questionnaire Surveys and questionnaires allow for stakeholder input on which design options best meet the requirements and understand the stakeholder's value expectations.

SWOT Analysis Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis is another technique that can be used to identify areas of strength and weakness that impact the solution value.

Workshops Workshops or structured reviews are an excellent way to get stakeholder input on which design options best meet requirements and understand the stakeholder's value expectations.

Once you have selected and applied one or more of these techniques as part of your efforts, you are ready to continue with the other requirements analysis and design tasks. First, let's look at the key output from this task, the solution recommendation.

Produce the Solution Recommendation

The solution recommendation identifies the most appropriate solution based upon evaluating all defined design options. The recommended solution targets maximizing the value provided to the enterprise. [Table 6.22](#) summarizes these destinations for the results of your task efforts.

TABLE 6.22 Output: Analyze potential value and recommend solution.

Output	Output Destinations	Destination Knowledge Area
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Solution recommendation	Define change strategy.	Strategy Analysis
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A number of stakeholders are involved with analyzing potential value and recommending a solution on your project. You should always involve project managers in the selection process; they need to be aware of what is happening in order to manage project scope and project work. End users should also be made aware of your selection results because they will be impacted by the capabilities that will be present in a given design option or solution component.

A number of additional business analysis stakeholders may be affected by your requirements allocation work, including the following:

- Customer
- Domain SME
- Implementation SME
- Regulator
- Sponsor

Now let's wrap up our review of the Requirements Analysis and Design Definition knowledge area.

How This Applies to Your Projects

In this chapter, you stepped through the tasks guiding you in analyzing the requirements for your project. One of the biggest challenges that you will encounter on your projects is making sure that the requirements you develop for your projects are testable. As you develop your stakeholder and solution requirements, keep asking yourself for each and every requirement: Can I prove that this requirement has been met in the resulting solution? If the answer is no, then you need to rewrite that requirement to make it measurable and testable. If the answer is yes, you need to figure out how you will acquire that proof. That means you should put on your tester's hat and start thinking about your fit criteria while you are specifying and modelling your requirements. Fit criteria define the measurable goals that determine whether solution testing satisfies the original requirements for that solution. This is true for every requirement that you write.

Fit criteria are quantified and testable statements of a requirement that show the requirement has indeed been met. They can be applied to both functional and nonfunctional requirements. Let's take a look at more details about defining the fit criteria for each type of solution requirement you may write, functional and nonfunctional.

Remember, functional requirements are capabilities that the solution or a solution component must have. Your fit criteria are the yardstick that is used to test whether those capabilities have been successfully implemented. They are a quantified goal, containing numbers or measurements that your solution has to meet. As you write your functional requirements, you should ask yourself the following:

- Has the function been successfully implemented?
- Do the results satisfy the originator of the requirement?
- What are the defined user acceptance criteria?

If you have a functional requirement to calculate a certain value, then the fit criteria for that requirement are that the calculation results conform to the intended result. Your fit criteria should satisfy the source of your requirement. Either the source is capable of saying that they are satisfied, or the result of the action taken will be measurable and consistent with a standard set for that kind of action.

Nonfunctional requirements are properties or characteristics that your solution or a solution component must have. The fit criteria quantify the necessary behavior or quality indicated by the nonfunctional requirement. Some nonfunctional requirements might at first seem a little hard to test. Writing fit criteria for nonfunctional requirements is a matter of finding the appropriate quantification. For nonfunctional requirements, you should ask yourself if you can quantify the defined behaviors or properties that the solution using these quality characteristics must have.

Summary

The six tasks in the Requirements Analysis and Design Definition knowledge area guide you as you analyze the stakeholder and solution requirements for your project. Requirements analysis is one of the most challenging activities for business analysts, even experienced ones. There are many ways to organize, document, and model your requirements in order to define what your solution will do for its users. It is up to you to be familiar with all of the options and to make the right decisions on documentation and models based on the nature of your project and the preferences of your organization and your stakeholders.

Effective technical writing and graphical modelling skills are an underlying competency enabling you to do this requirements analysis work. Successful projects start with defining and agreeing to what is needed. Without the ability to analyze your stakeholder's stated requirements and determine the real requirements for your project, you will find it difficult to deliver a successful solution to your stakeholders.

The *BABOK® Guide* recommends that you apply one or more techniques to specify and model the stakeholder and solution requirements for your projects. You don't need to be an expert in every modelling technique, but most experienced business analysts are comfortable using a representative subset of those techniques. Each requirements modelling technique should be evaluated to see whether it fits the nature of your project and your requirements. Using object-oriented modelling techniques for a traditional, relational database project would be cumbersome at best.

A number of deliverables are produced by the tasks in this knowledge area, including the ultimate deliverable of requirements analysis: your validated stakeholder or solution requirements for your project. These requirements form the basis for your design and development efforts later in the project life cycle.

Exam Essentials

Be able to list the tasks found in the Requirements Analysis and Design Definition knowledge area. You will see questions about the tasks, their associated techniques, their more detailed elements, and the key outputs that they produce on your exam. You should memorize the tasks of this knowledge area and the key outputs associated with them. The six tasks are as follows:

- Specify and model requirements.
- Verify requirements.
- Validate requirements.
- Define requirements architecture.
- Define design options.
- Analyze potential value and recommend a solution.

Be able to understand and apply the modelling techniques recommended for use during requirements analysis and design.

Understanding and applying the modelling techniques to model requirements is a key focus for your Requirements Analysis and Design Definition knowledge area exam questions. Be sure that you can name these techniques and that, at a high level, you know what they are all about. Here's the list:

- Business Capability Analysis
- Business Rules Analysis
- Concept Modelling
- Data Flow Diagrams
- Data Modelling
- Decision Modelling
- Functional Decomposition
- Interface Analysis
- Mind Mapping
- Organization Modelling
- Process Modelling
- Prototyping
- Roles and Permissions Matrix
- Root Cause Analysis
- Scope Modelling
- Sequence Diagrams

State Modelling
Use Cases and Scenarios
User Stories

Be able to distinguish between validated requirements and verified requirements. Validated requirements are stakeholder, solution, or transition requirements that are aligned with the business goals and objectives found in your project's business requirements or business case. Verified requirements are stakeholder, solution, or transition requirements that have been reviewed and are correctly defined at an acceptable level of detail. They are requirements of sufficient quality to allow further project work based on those requirements to be done.

Be able to list and explain the nine characteristics of well-written requirements. The nine characteristics of well-written, high-quality requirements are as follows:

- Atomic
- Complete
- Consistent
- Concise
- Feasible
- Unambiguous
- Testable
- Prioritized
- Understandable

Be able to distinguish between viewpoints, views, design options, solution components, and the solution approach. Be sure you know the differences between these five concepts for a particular initiative. These terms are closely related but very different.

Viewpoints: Stakeholder-focused templates, standards, and guidelines that define how requirements will be represented, organized, and related to one another

Views: Name given to the actual requirements and designs for a particular solution from a chosen stakeholder viewpoint. A collection of views makes up the requirements architecture for a specific solution.

Design Options: Possible ways to satisfy one or more needs in a solution

Solution Components: Subparts of a solution, such as people, infrastructure, hardware, or software

Solution Approach: How to go about building and implementing the solution, such as whether solution components will be created, purchased, or some combination of both

Be able to describe the five categories of models used in requirements analysis

and provide an example of each type. The five categories of models used in requirements modelling are as follows:

- People and Roles
- Rationale
- Activity Flow
- Capability
- Data and Information

Key Terms

You have just finished stepping through the contents of the fifth knowledge area from the *BABOK® Guide*: Requirements Analysis and Design Definition. There is one more knowledge area to go after this one, so stay tuned.

You should understand how to apply the techniques and tasks in this knowledge area in order to be an effective business analyst. Additionally, you will need to know the six tasks and their associated elements and techniques from this knowledge area in order to be successful on the CBAP® or CCBA™ exams. The tasks include the following:

- Specify and model requirements.
- Verify requirements.
- Validate requirements.
- Define requirements architecture.
- Define design options.
- Analyze potential value and recommend a solution.

Chapter 6 has a number of new key words related to analyzing stakeholder and solution requirements on your projects. Here is a list of some of the key terms you encountered in this chapter:

- behavioral business rules
- component
- conceptual data models
- data flow diagrams (DFDs)
- decompose
- definitional business rules
- design option
- expected benefits
- expected costs
- formal models
- functional decomposition
- informal models
- logical data models
- metadata
- opportunity costs
- organizational modelling

physical data models
potential value
process models
releases
requirements allocation
requirements architecture
sequence diagrams
solution approach
solution components
state modelling
user stories
validated requirements
view
viewpoints

Review Questions

1. The tasks and techniques in the Requirements Analysis and Design Definition knowledge area are used to define what types of requirements?
 - A. Business and stakeholder
 - B. Stakeholder and transition
 - C. Solution and stakeholder
 - D. Transition and solution
2. What requirements analysis task ensures that solution requirements align to the business requirements?
 - A. Validate requirements.
 - B. Verify requirements.
 - C. Prioritize requirements.
 - D. Specify requirements.
3. When reviewing a set of related requirements, you discover that two of the requirements describe the same feature but produce different results. Based on your well-written requirements checklist, you would note that these requirements are not _____.
 - A. Complete
 - B. Consistent
 - C. Testable
 - D. Concise
4. Data flow diagrams show how _____ flows through a system.
 - A. Processes
 - B. Requirements
 - C. Decisions
 - D. Information
5. What is the name for an abstraction representing some or all of a proposed solution?
 - A. Diagram
 - B. Concept
 - C. Matrix
 - D. Model
6. What is defined as a sequence of repeatable activities executed in an organization?

- A. Rule
 - B. Event
 - C. Process
 - D. Object
7. During requirements analysis, you are selecting a modelling technique to represent the rationale or “why” of a proposed change. Which modelling technique would be the best choice?
- A. Organizational modelling
 - B. Decision modelling
 - C. Functional decomposition
 - D. State modelling
8. What component of an entity-relationship diagram is contained in the labeled rectangle and represents a source or destination of data?
- A. Attribute
 - B. Relationship
 - C. Entity
 - D. Constraint
9. Which of the following is a task performed as part of requirements analysis?
- A. Specify and model requirements.
 - B. Manage solution scope and approach.
 - C. Prepare requirements package.
 - D. Manage requirements traceability.
10. Activity flow models show how the system behaves over the course of time through the:
- A. Structures describing what is important to the enterprise
 - B. Execution of business processes or a series of events
 - C. Set of related set classes and associations between them
 - D. Business’s policies, guidelines, standards, and regulations
11. During requirements analysis, the business analysis team created the structure for all of the requirements of the proposed change. What was created?
- A. Requirements viewpoints
 - B. Requirements packages
 - C. Requirements architecture
 - D. Requirements components

2. What imposes limitations on your solution?
 - A. Attributes
 - B. Constraints
 - C. Assumptions
 - D. Priorities
3. All of the following are examples of improvement opportunities that may be found when proposing design options *except*:
 - A. Increase efficiencies.
 - B. Improve information access.
 - C. Identify additional capabilities.
 - D. Include performance measures.
4. What is the purpose of nonfunctional requirements?
 - A. Addressing educational needs of users interacting with the solution
 - B. Defining quality attributes and design constraints of the solution
 - C. Protecting and preventing access to data that the solution uses or creates
 - D. Describing the likely growth of use of the deployed and maintained solution over time
5. You are currently reviewing a specific requirement to see if it is atomic. What is an atomic requirement?
 - A. Operationally feasible and fits within budget and schedule constraints
 - B. Logically structured in a related group and able to be changed
 - C. Technically feasible with a wide range of implementation options
 - D. Self-contained and capable of being understood independently
6. Which technique organizes your requirements based on the solution components to which they are related?
 - A. Data dictionary
 - B. Business rules
 - C. Scope modelling
 - D. Class diagram
7. The output from specifying and modelling requirements is:
 - A. Specified and modelled requirements
 - B. Specified and traceable requirements
 - C. Verified and modelled requirements
 - D. Prioritized and validated requirements
8. What is the name for the individual pieces of information that describe an

- entity in an entity relationship diagram?
- A. Identifier
 - B. Relationship
 - C. Attribute
 - D. Cardinality
9. What is another name for the quality check performed following analysis of a requirement?
- A. Verification
 - B. Validation
 - C. Approval
 - D. Clarification
10. Assumptions and constraints defined and clarified as requirements are understood and documented with their associated:
- A. Limitations
 - B. Attributes
 - C. Restrictions
 - D. Requirements

Chapter 7

Controlled End: Solution Evaluation

CBAP®/CCBA™ EXAM TOPICS COVERED IN THIS CHAPTER:

- ✓ Measure solution performance.**
- ✓ Analyze performance measures.**
- ✓ Assess solution limitations.**
- ✓ Assess enterprise limitations.**
- ✓ Recommend actions to increase solution value.**



Solution Evaluation provides care and feeding for your selected solution across the project life cycle. The tasks found in this knowledge area focus on assessing solution performance and the value delivered by the solution to the enterprise. The transition requirements are also developed as part of this knowledge area. *Transition requirements* define how the solution will be implemented after the project work is complete.

Care and feeding of a solution has many facets. One important aspect is the benefits realization aspect of a solution once that solution is being used. During a solution's operational life, you will want to measure its performance and quantify the business value it delivers. Keep in mind that there are many ways to implement a solution once it has been selected. Experienced business analysts always make sure that the solution is defined, designed, and implemented well.

Solution Evaluation

The Solution Evaluation knowledge area focuses on ensuring that the solution can be successfully implemented within the organization in order to meet the business need driving your project. You must have knowledge of your business environment and be able to assess how each of your project's proposed solutions would affect that environment. Communicating solution requirements and implementation-specific information to your stakeholders is also your responsibility.

According to the *BABOK® Guide*, this knowledge area is where you will develop your project's transition requirements. Transition requirements describe the solution capabilities required to transition from the current organizational state to the future state. Transition requirements are no longer needed once the transition to the new solution is complete.

Remember that the business requirements are developed by tasks in the Strategy Analysis knowledge area, and your stakeholder and solution requirements are built by tasks found in the Requirements Analysis and Design Definition knowledge area.

Exam Spotlight

An important distinction between Solution Evaluation and other knowledge areas is the existence of an actual solution. Solution Evaluation tasks can be performed on solution components in varying stages of development, including the following:

- *Prototypes or proofs of concept*
- *Pilot release or Beta release*
- *Operational releases*

The tasks in this knowledge area follow the solution from early in the project life cycle, where the solution begins to take form, to the end of the life cycle, where the project itself ends and the solution is deployed. This solution-focused knowledge area generates several key business analysis outputs. They include the following:

- Solution performance measures
- Solution performance analysis
- Solution limitation
- Enterprise limitation
- Recommended actions

We will cover each output in more detail later in this chapter.

To focus on what is important to business analysts across the life cycle of their business analysis efforts, let's consider the tasks of this knowledge area with the framework of the BACCM™. Business analysts need to keep an eye on their work relative to the six concepts contained in the framework: changes, needs, solutions, stakeholders, value, and context. [Table 7.1](#) lists these responsibilities.

TABLE 7.1 The BACCM™: Solution Evaluation

Core Concept	The Business Analyst's Responsibilities
Change	Recommend a change to the solution or the enterprise in order to realize a solution's potential value.
Need	Evaluate how a solution or solution component is fulfilling a business need.
Solution	Assess solution performance to see if it is delivering the potential value.
Stakeholders	Elicit information from stakeholders about solution performance and value delivery.
Value	Determine if a solution is delivering potential value and examine why a value may not be being realized.
Context	Determine solution performance measures and limitations within the context of the project and the enterprise.

Many commonly used Solution Evaluation techniques can be applied for each knowledge area task. Solution Evaluation work is multifaceted and applies a wide range of techniques for validating the solution and its components relative to the business case and allocating the stakeholder and solution requirements to the solution components and releases.

The Solution Evaluation knowledge area also addresses monitoring and reporting on the performance of the assessment and validation activities across the project life cycle. It includes a task specifically focused on assessing the solution performance after the solution is operational and in use. The business analysis team is responsible for assessing the effectiveness of the techniques being used to assess and validate their project's resulting solution. The Solution Evaluation knowledge area is found in Chapter 7 of the *BABOK® Guide*.

The Business Analyst's Task List

A business analyst has five tasks to perform in the Solution Evaluation knowledge area. We will look at each one of these tasks in detail later in this chapter. The task list from the *BABOK® Guide* includes the following:

- Measuring solution performance
- Analyzing performance measures
- Assessing solution limitations

- Assessing enterprise limitations
- Recommending actions to increase solution value

These tasks focus on making sure you select the best solution to meet your project's business need and that you define, design, and implement that solution well. Your ultimate goal is to deploy the right solution that meets the business need and adds value to the business. You know your business environment and can assess how each proposed solution would affect that environment. You must also ensure that your project stakeholders fully understand the prioritized and approved solution requirements. Any implementation decisions that are being made during Solution Evaluation should align with those requirements.

When Does Solution Evaluation Take Place?

When the territory and the map disagree, believe the territory.

—Swiss Army Manual

The tasks in the Solution Evaluation knowledge area begin early in the project life cycle as the solution to the business problem or need is proposed, evaluated, and agreed upon. The tasks in this knowledge area appear in both the controlled middle and controlled end of the generic life cycle described in Chapter 1, “Foundation Concepts.” The controlled middle of a project is where the actual work gets done, one stage or phase at a time. Business analysis tasks during this part of your project are typically from the Elicitation and Collaboration, Requirements Analysis and Design Definition, and Solution Evaluation knowledge areas with a little Requirements Life Cycle Management thrown in for good measure.

Specific tasks in the Solution Evaluation knowledge area focus on the controlled end to your project. In addition to wrapping things up, you also plan how you will transition the new solution into its *operational life* and get ready to measure the business benefits of the solution after it is in use. Typically, defining the transition requirements on your projects takes place in the controlled middle or early on in the controlled end of the project life cycle as part of the project's requirements development or definition phase.

Exam Spotlight

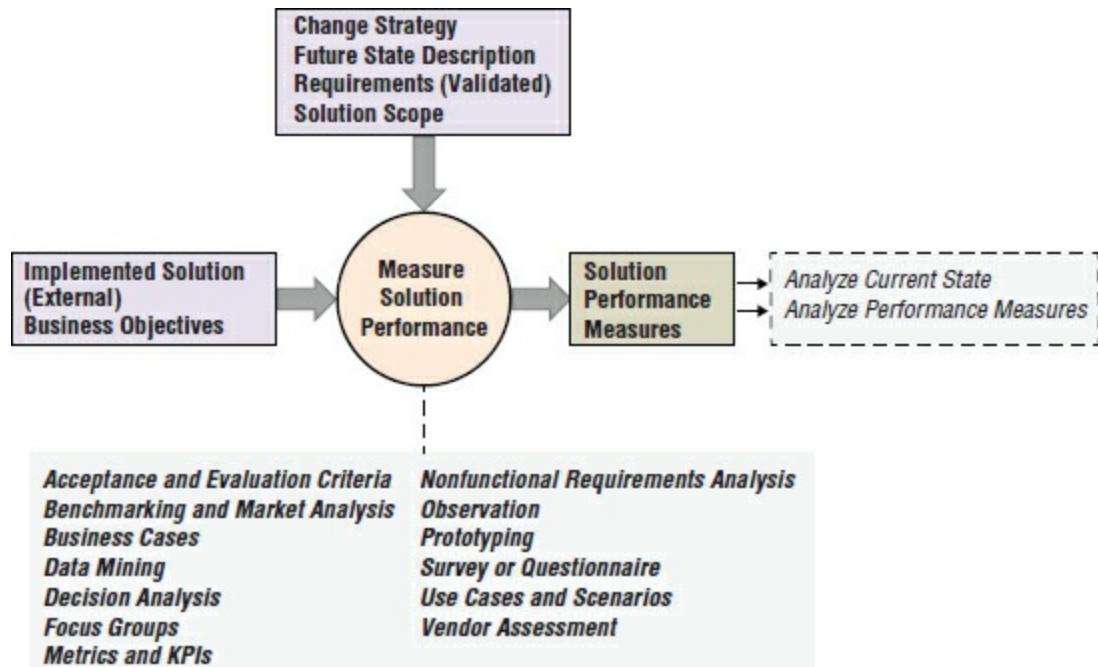
Approximately 16 percent of your exam questions focus on the Solution Evaluation knowledge area. These exam questions target specific and detailed aspects of the tasks, tools, and techniques that are found in the knowledge area.

Let's step through the first task in the Solution Evaluation knowledge area: defining performance measures so you can collect data and actually measure a solution's performance.

Measure Solution Performance

The first task in the Solution Evaluation knowledge area is defining performance measures for collecting solution performance data and measuring the performance of a newly deployed or an existing solution. Performance is typically measured using key performance indicators (KPIs), project goals and objectives, process performance targets, or software application testing.

[Figure 7.1](#) summarizes the inputs, guidelines/tools, outputs, techniques, and associated tasks used to measure solution performance.



[FIGURE 7.1](#) Task summary: Measure solution performance.

Several key inputs are needed to adequately measure solution performance. These key inputs are produced by a number of other business analysis tasks; they include business objectives and the solution to be measured. Let's look at each of these task inputs in greater detail.

Business Objectives Business analysts use the defined business objectives to make sure that the solution will deliver measurable results to the enterprise.

Implemented Solution (External) A solution or *solution component* is required in order to measure performance. The solution may be an *implemented solution*, a prototype, or a beta solution.

There are additional inputs that can be used by business analysis tasks: guidelines and tools. Guidelines are essentially instructions or descriptions on why and how a business analyst will undertake a task. Tools, on the other hand, are methods for conducting business analysis tasks or shaping a task output. Let's take a look at the guidelines and tools that can also be used as inputs when measuring solution performance:

Change Strategy The change strategy is a high-level plan of key activities and events relative to a proposed change. Be sure to reference this information when

creating performance measures for your solution.

Future State Description The future state description provides a definition of the boundaries for the solution scope and all of the solution components. It also links back to the potential value expected from this future state.

Requirements (validated) Validated requirements have been analyzed and appraised to determine their potential value.

Solution Scope Solution scope defines the solution boundaries for what is in scope and what is out of scope. These boundaries are used to measure and evaluate a solution.

[Table 7.2](#) summarizes the inputs, guidelines, and tools for this task and lists the task and knowledge area sources for each input used to assess proposed solution.

TABLE 7.2 Inputs, Guidelines, and Tools: Measure solution performance.

Task Input	Input Type	Input Source	Source Knowledge Area
Implemented solution (external)	Input		
Business objectives	Input	Define future state.	Strategy Analysis
Change strategy	Guidelines and tools	Define change strategy.	Strategy Analysis
Future state description	Guidelines and tools	Define future state.	Strategy Analysis
Requirements (validated)	Guidelines and tools	Validate requirements.	Requirements Analysis and Design Definition
Solution scope	Guidelines and tools	Define change strategy.	Strategy Analysis

When you perform the Measure Solution Performance task, you are expected to address the three detailed elements of that task. These elements guide you in measuring existing or new solution performance on your projects by doing the following:

- Defining solution performance measures
- Validating solution performance measures
- Collecting solution performance measures

Let's take a closer look at each of these task elements now:

Defining Solution Performance Measures The first step in defining *solution performance measures* is to take a look at any existing performance measures and methods. Make sure the existing measures are both accurate and relevant to the new solution. Common sources for performance measures include business goals, objectives, and processes as well as any legal or

regulatory constraints on the solution.

Exam Spotlight

Solution performance measures may be quantitative, qualitative or both, depending on the value being measured. *Quantitative measures* are numerical, countable, or finite, such as measuring amounts, quantities, or times. *Qualitative measures* are more subjective in nature, such as attitudes and perceptions of a solution and its operations. Be sure you can distinguish between these two types of measures for your exam.

Validating Solution Performance Measures Solution performance measures should be validated with key stakeholders to ensure the measures are useful and relevant. More detailed performance measures should align with the higher-level performance measures for the solution or for the enterprise.

Collecting Solution Performance Measures Statistical sampling techniques are often used to collect solution performance measures. Be sure to consider the *volume or sample size* for the initiative so you collect enough data and achieve accurate results. The *frequency and timing of measurements* are also critical. Watch the *currency* of your data as well. Measurements that are more current tend to be more representative of solution performance than older data. Additionally, effective business analysts often use qualitative measures to estimate the value delivered by a solution with stakeholders.

Several techniques are available for defining, measuring, and collecting solution performance measures. You should consider adding acceptance and evaluation criteria to your list of possibilities. Let's take a look at this recommended technique in greater detail right now.

Recommended Technique: Acceptance and Evaluation Criteria

We think that defining and applying acceptance and evaluation criteria is a required technique in the fundamental knowledge base of an effective business analyst. Both acceptance and evaluation criteria can be tied to contractual obligations, which can introduce associated legal and political issues and risks into the project.

Acceptance criteria define a minimal set of requirements that must be met in order for a solution or a solution component to be considered acceptable to its key stakeholders. These criteria should be defined early in the project life cycle and must be met in order to say that a solution is complete, correct, and worth implementing. Test cases can and should be written that verify the solution against these defined and agreed-upon acceptance criteria.

Evaluation criteria are a set of requirements used to choose between multiple solutions to a particular problem. They are typically built to allow scoring of the various solutions under consideration. To evaluate potential solutions, this set

of requirements is prioritized and ranked by order of importance. The solutions will then be scored against the ranked set of requirements using a preestablished evaluation scale. A must-have requirement that is not met by a proposed solution should remove that solution from consideration.

Additional Techniques to Consider

The *BABOK® Guide* recommends several additional techniques when you are assessing one or more proposed solutions for your project. These techniques are summarized for you here.

Benchmarking and Market Analysis Benchmarking can be used to define acceptable measures for a solution relative to the potential value defined in the future state description and the change strategy.

Business Cases Business objectives are defined in the business case for the project. Performance measures for the resulting solution can also be found here.

Data Mining This technique is used to collect and analyze the solution performance data. Data mining is particularly useful when there is a lot of data to analyze relative to a particular solution.

Decision Analysis Decision analysis allows you to examine and model the consequences of different decisions before actually making or recommending a particular decision. Effective decision analysis requires you to effectively structure the decision problem and process, keeping in mind any relevant values, goals, and objectives.

Focus Groups Focus groups are often used to give assessment, insight, and impressions of a solution's performance. The results of using this technique are subjective in nature.

Metrics and Key Performance Indicators (KPIs) Metrics and KPIs are defined and used to measure solution performance. These measures are aligned with enterprise measures, goals, and objectives.

Nonfunctional Requirements Analysis Nonfunctional requirements define the expected characteristics of a solution. Be sure to use this technique and its results when defining solution performance measures.

Observation Observation is used to provide feedback on stakeholder or user perception of a solution or to reconcile contradictory results. Sometimes it makes things clear when you watch them personally and see what is going on.

Prototyping Prototyping is commonly used to simulate a new solution prior to constructing that solution. Performance measures can be defined, collected, and analyzed using the prototype as a baseline.

Survey or Questionnaire Surveys and questionnaires are often used to collect information from stakeholders about solution performance. They are particularly useful when you are seeking input from a large number of stakeholders.

Use Cases and Scenarios Use cases and scenarios define the expected outcomes of a solution or a solution component. Performance measures can be

defined, collected, and analyzed using the use case or scenario as a baseline.

Vendor Assessment Vendor assessments allow you to assess an external vendor's ability to provide all or part of your solution. As part of the assessment, be sure to look at their performance measures for the solution.

Once you have selected and applied one or more of these techniques as part of your solution measurement efforts, you are ready to continue with the other Solution Evaluation tasks at hand. We will discuss those tasks shortly.

Measuring the Proposed Solution

Measuring a solution or solution components requires you define the performance measures that will be collected and analyzed. The solution performance measures look at the solution performance relative to the value that the solution brings to the enterprise. [Table 7.3](#) summarizes this destination for the results of your solution measurement efforts.

[TABLE 7.3](#) Output: Measure solution performance.

Output	Output Destinations	Destination Knowledge Area
Solution performance measures	Analyze current state.	Strategy Analysis
	Analyze performance measures.	Solution Evaluation

Several key business analysis stakeholders might be involved in the solution measurement. The project manager will need to plan and manage this solution assessment process as part of the project. Other stakeholders participating in solution assessment include the following:

- Customer
- Domain SME
- End user
- Sponsor
- Regulator

Now let's take a look at the next task found in the Solution Evaluation knowledge area—analyzing the solution performance measures that were defined and collected.

Analyze Performance Measures

Analyzing performance measures typically begins once your constructed solution is deployed and in operational use. Business analysts need to understand the potential value of the solution and the enterprise context where that solution is being implemented. You will find yourself looking at goals, objectives, KPIs, risks, and other factors as part of this analysis work.

You may find yourself investigating how the solution is being used and assessing the positive and negative impacts it has on the organization and its stakeholders. Some folks analyze performance measures in a post-implementation assessment performed shortly after their project is complete.



Real World Scenario

Do We Have the Right Acceptance Criteria?

In a recent consulting assignment, Ginger discovered firsthand that solution performance evaluations can yield some surprising results. She was performing a post-implementation review of a large software system's implementation at a major telecommunications company.

The new system automated the trouble-ticketing and problem-resolution capabilities between the telecommunications company and its business partners. Whenever a circuit problem was reported, the system would initiate and carry on an electronic conversation between the two companies. The conversation stepped through the problem-resolution process from start to finish with the computer systems on each end performing the lion's share of the work.

Rather than talk with one another and do a lot of manual data entry and status updates, the service representatives were able to simply check the status of the trouble tickets and make sure the repairs that needed to be done were actually scheduled and completed. The new system was viewed by senior management as a system that would greatly enhance workplace productivity by minimizing the manual transactions and telephone conversations that took up so much of the service representative's time.

As part of her solution performance evaluation work, Ginger visited a major service center to see how well the new system was being used. She expected to see a very quiet and efficient workspace with a lot of activity going on behind the computer screens. What Ginger expected and what she encountered on her visit were two very different things.

Ginger walked around the service center to see the end users in action. As predicted, once the trouble ticket was opened in the new system, the computer took over the conversation with the company responsible for addressing the problem. However, instead of allowing the electronic conversation to go on unaided, the service reps were on the phones with the counterparts at the other company. As the computer systems exchanged information and updated problem status, they were discussing what they saw on the screens and making sure that all was going as planned. This behavior on the part of the end users was most unexpected.

The project team and the business had failed to take into account how much enjoyment the service representatives took from their interactions and relationships with the folks at the other companies. They wanted to

continue those activities and found an easy workaround allowing them to do just that—all they had to do was pick up the phone and dial.

As Ginger briefed the senior management team on the results of the post-implementation assessment, she made the point that your solution's end users can be quite creative when it comes to figuring out new and unintended ways to use the capabilities that a solution provides. Ginger told the senior managers that the project had obviously missed defining the acceptance criteria focusing on job satisfaction and relationship building between the involved companies and personnel. These automated systems are working quite well to this day—and the people-to-people conversations are still going on right along with the electronic ones.

[Figure 7.2](#) summarizes the inputs, outputs, techniques, and associated tasks used to validate a solution against its business requirements.

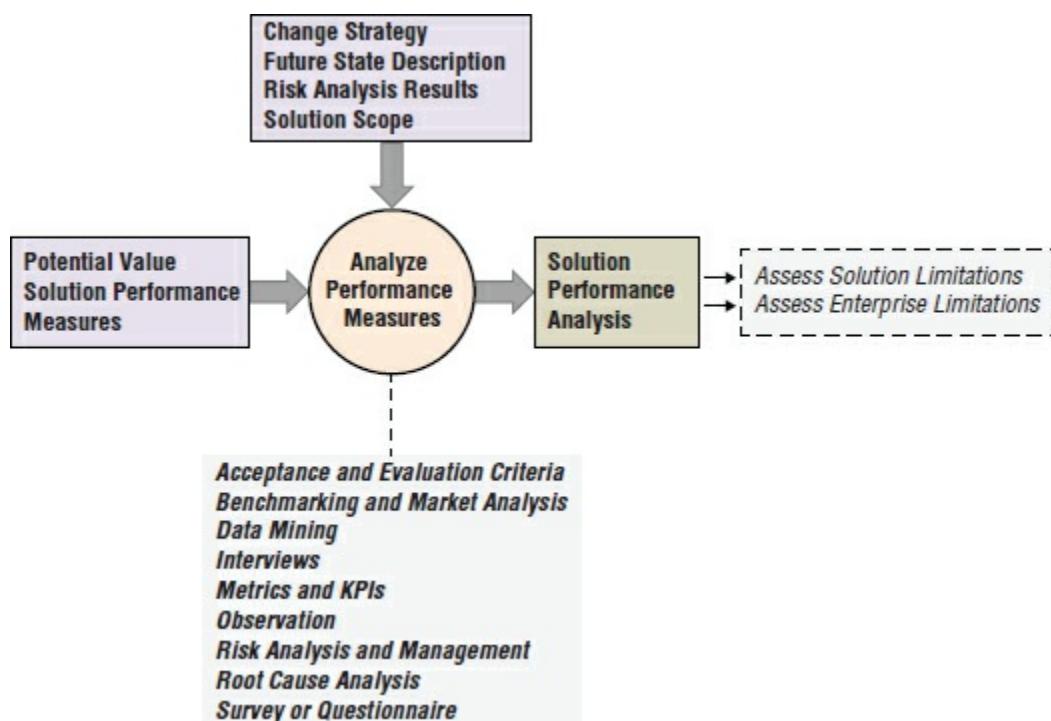


FIGURE 7.2 Task summary: Analyze performance measures.

Several key inputs, guidelines, and tools are needed to analyze how an operational solution is performing. These key inputs are produced by a number of other business analysis tasks. They include the solution scope, any solution performance measures, and the future state description. Let's look at each input in greater detail.

Potential Value Potential value describes the value that might be realized from the operational solution. This estimate is often used as a benchmark when analyzing the actual solution performance.

Solution Performance Measures Solution performance metrics define the criteria that are used to measure and assess solution performance. They may be quantitative or qualitative in nature. Examples of quantitative metrics include

numerical measures of time, revenue, or transaction volume. Qualitative metrics are softer measures, such as customer satisfaction or recommendations.

There are additional inputs that can be used by business analysis tasks: guidelines and tools. Let's take a look at the guidelines and tools that may also be used as inputs when analyzing solution performance:

Change Strategy The change strategy is a high-level plan of key activities and events relative to a proposed change. Be sure to reference this information when analyzing solution performance using the defined performance measures.

Future State Description The future state description provides a definition of the boundaries for the solution scope and all of the solution components. It also links back to the potential value expected from this future state.

Risk Analysis Results The risk analysis results from Strategy Analysis provide a look at both the overall level of solution risk and the more specific individual risks inherent to the solution and its components.

Solution Scope Solution scope defines the solution boundaries for what is in scope and what is out of scope. These boundaries are used to analyze solution performance.

Table 7.4 summarizes the inputs to this task and lists the task and knowledge area sources for each input used to analyze solution performance.

TABLE 7.4 Inputs: Analyze solution performance.

Task Input	Input Type	Input Source	Source Knowledge Area
Potential value	Input	Define future state.	Strategy Analysis
Solution performance measures	Input	Measure solution performance.	Solution Evaluation
Change strategy	Guidelines and tools	Define change strategy.	Strategy Analysis
Future state description	Guidelines and tools	Define future state.	Strategy Analysis
Risk analysis results	Guidelines and tools	Assess risks.	Strategy Analysis
Solution scope	Guidelines and tools	Define change strategy.	Strategy Analysis

Five elements are involved with analyzing solution performance. The solution being evaluated needs to be live and in operation. If it isn't being used, there won't be much for you to evaluate. The detailed elements of this task include looking at the following:

- Solution performance versus desired value
- Risks

- Trends
- Accuracy
- Performance variances

Let's look at each of these five elements in greater detail:

Solution Performance vs. Desired Value To analyze performance measures, you need to collect the metrics that describe solution performance. Some software applications might provide these metrics to you automatically. Other types of solutions will require manual collection of quantitative and qualitative solution metrics for evaluation.

If you have a solution that is over- or under-performing and not meeting one or more of the business goals and objectives, it may be that your solution metrics associated with those goals and objectives are flawed. The solution metrics should also be validated and defined more appropriately.

Risks A lack of performance measures for a solution is considered a solution performance risk. Performance measures may uncover new risks to the solution or the enterprise. The new risks are identified and managed just like any other risk.

Trends Be sure to consider the time period over which performance measurement data is being collected. A large time period and a good sample size of data yields a more accurate view of a solution's performance.

Accuracy Business analysts test and analyze solution performance data to make sure the data is accurate and reliable. The results of accurate and reliable performance measures can be reproduced and repeated.

Performance Variances *Variance* is the difference between the expected and the actual solution performance. Business analysts watch the variance and attempt to minimize or eliminate that variance to deliver solution value.

When analyzing performance measures, you can select from many recommended techniques. You can use one or several of these techniques to produce the solution performance analysis that is generated as an output by this task.

Techniques to Consider

The *BABOK® Guide* recommends using one or more of the following techniques when you are analyzing performance measures. They are summarized for you here:

Acceptance and Evaluation Criteria These criteria define the acceptable solution performance. The degree of variance in the collected data is used in analyzing the solution performance.

Benchmarking and Market Analysis Benchmarking can be used to observe the results of other organizations using similar solutions. This includes looking at risks, trends, and variances relative to the solution being analyzed.

Data Mining This technique is used to collect and analyze the solution

performance data. The collected data typically includes performance measures, trends, issues, and variances.

Interviews This technique is used with individuals or small groups. The business analyst is speaking with them to determine the expected value of a solution as well as how the solution's performance is perceived.

Metrics and Key Performance Indicators (KPIs) Metrics and KPIs are defined and used to measure and analyze solution performance. The measures are used to judge how well the solution contributes to achieving business goals.

Observation Observation allows you to observe the solution in action. This technique may reveal problems or issues that have not been noticed or reported. It may also reveal issues that are not obvious in the collected data.

Exam Spotlight

Make sure you know the difference between a *defect* and an *issue*. Defects are deficiencies in your solution, reducing the quality of that solution. Issues are points or matters in dispute or in question.

Risk Analysis and Management Risks are identified and managed on an ongoing basis during solution performance analysis. Activities include risk identification, analysis, response planning, and management.

Root-Cause Analysis Root-cause analysis is used to determine the underlying cause of a significant performance variance within a solution.

Survey or Questionnaire Surveys and questionnaires provide you with a vehicle to gather quantitative and qualitative information from large numbers of stakeholders about how they perceive a solution performs.

Once you have selected and applied one or more of these techniques as part of your analyze performance measures efforts, you are ready to produce the key business analysis output from this task—the solution performance analysis. Let's review this deliverable.

Build the Solution Performance Analysis

The solution performance analysis describes how the solution is performing relative to the business goals and objectives that led to its creation and implementation. It contains the results of analyzing the solution performance measurements that were collected. The deliverable also contains the business analyst's recommendations relative to the results of the measurements. The focus is on recommendations to solve any performance gaps as well as leveraging opportunities to create more value.

The contents of analysis may be used to assess both solution and enterprise limitations as part of the tasks found in the Solution Evaluation knowledge area. [Table 7.5](#) summarizes this output and the tasks that use it.

TABLE 7.5 Output: Analyze Performance Measures.

Output	Output Destinations	Destination Knowledge Area
Solution performance analysis	Assess solution limitations.	Solution Evaluation
	Assess enterprise limitations.	Solution Evaluation

The business analyst is responsible for ensuring that the solution analysis work on the project gets done. If they are unable to follow through because of reassignment to another project, you will need to plan for the work and hand off the plan to another responsible party. There are a number of other business analysis stakeholders who may be involved with this post-implementation analysis, including the following:

- Domain SME
- Project manager
- Sponsor

The project sponsor is ultimately responsible for solution operations from a business point of view and needs to review the results of your solution performance analysis to see whether any improvements or changes to the solution need to be made.

Now let's take a look at the next task found in the Solution Evaluation knowledge area—assessing solution limitations that restrict the full realization of value.

Assess Solution Limitations

Your next task in the Solution Evaluation knowledge area is assessing solution limitations. This task identifies the root causes of underperforming and ineffective solutions and solution components. This task is closely linked to another task in the Solution Evaluation knowledge area—assessing the enterprise limitations. We will discuss this task later in the chapter. The tasks are often done concurrently at any point during the solution life cycle.

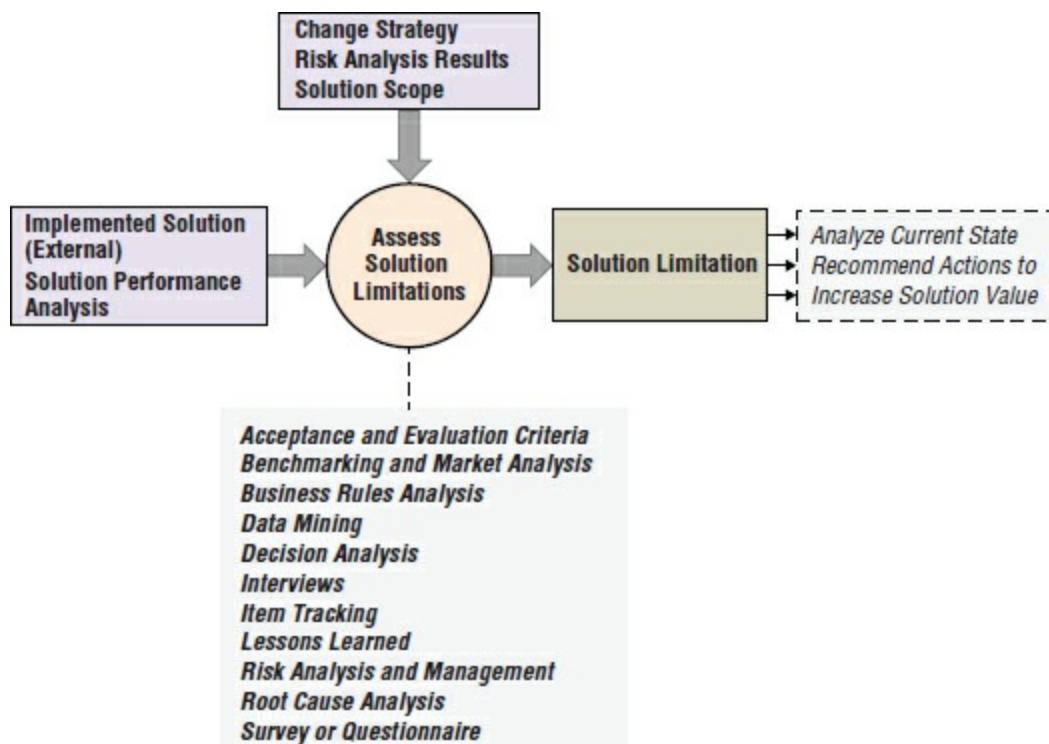
Solution Components

Let's make sure you remember the definition of *solution components*. They are the pieces and parts of a solution that span the enterprise architecture of the organization including things like the following:

- Business processes, policies, and rules
- People along with their job functions and responsibilities

- Software applications and application components
- Organizational structure and its internal/external interactions

This task is often done concurrently with assessing enterprise limitations at any point during the solution life cycle. [Figure 7.3](#) summarizes the inputs, guidelines, tools, outputs, techniques, and associated tasks used to assess solution limitations.



[FIGURE 7.3](#) Task summary: Assess solution limitations.

Two key inputs are needed to assess solution limitations. These inputs are produced by a number of other business analysis tasks. They include the *implemented solution* and the *solution performance analysis*. Let's look at each of these task inputs in greater detail.

Implemented Solution (External) Implemented solutions are those that exist and can be evaluated. They may or may not be in operational use, such as a prototype solution.

Solution Performance Analysis The solution performance analysis contains the results of collected and analyzed solution performance measurements. It also contains recommendations to solve any performance gaps or take advantage of any opportunities that could improve the solution's value.

There are additional inputs that may be used by business analysis tasks: guidelines and tools. Let's take a look at the guidelines and tools that may also be used as inputs when assessing solution limitations.

Change Strategy The change strategy is a high-level plan of key activities and events relative to a proposed change. Be sure to reference this information when creating the performance measures for your solution.

Risk Analysis Results The risk analysis results document the overall level of risk and individual risks for the solution and solution components.

Solution Scope Solution scope defines the solution boundaries for what is in scope and what is out of scope. These boundaries are used to measure and evaluate a solution.

[**Table 7.6**](#) summarizes the inputs, guidelines, and tools for this task and lists the task and knowledge area sources for each input used to assess proposed solutions.

TABLE 7.6 Inputs, Guidelines, and Tools: Assess solution limitations.

Task Input	Input Type	Input Source	Source Knowledge Area
Implemented solution (external) requirements (prioritized and approved)	Input		
Solution performance analysis	Input	Analyze performance measures.	Solution Evaluation
Change strategy	Guidelines and tools	Define change strategy.	Strategy Analysis
Risk analysis results	Guidelines and tools	Assess risks.	Strategy Analysis
Solution scope	Guidelines and tools	Define change strategy.	Strategy Analysis

The elements to be considered when assessing solution limitations are as follows:

- Identifying internal solution component dependencies
- Investigating solution problems
- Performing an impact assessment

Let's look at each of these elements in greater detail.

Identifying Internal Solution Component Dependencies Solution performance can be limited by internal dependencies. It is important to identify internal solution dependencies between components and see if there is anything about the components that limits performance or value realization. The performance of an entire solution can be impacted by and limited to the performance of the least effective solution component.

Investigating Solution Problems Business analysts often use problem analysis techniques to investigate solution performance problems. It is essential to identify the source of the problem so the problem can be addressed and corrected. Problems may be indicated by an inability to meet a goal or objective or by a failure to realize a benefit. Solution outputs may not be of sufficient

quality, or potential value may not be realized.

Performing an Impact Assessment Performing an impact assessment on one or more identified solution problems determines the severity of the problem, the probability of the problem occurring again, the impact on the business operations, and the capacity of the business to absorb that impact. Problems can be resolved, mitigated, or accepted. Risks are also assessed as part of an impact analysis.

Techniques to Consider

The *BABOK® Guide* recommends the use of one or more techniques when you are assessing solution limitations. These techniques are summarized for you here:

Acceptance and Evaluation Criteria These criteria define the acceptable solution performance. The degree of variance in the collected data is used in analyzing the solution performance and assessing solution limitations.

Benchmarking and Market Analysis Benchmarking can be used to observe the results of other organizations using similar solutions. This includes looking at risks, trends, and variances relative to the solution being analyzed.

Business Rules Analysis This technique shows the current business rules and the changes to those rules that are required to achieve the potential value of the change. Business rules may limit or constrain solution performance or impact value realization.

Data Mining This technique is used to identify factors that may constrain or limit solution performance. The collected data being analyzed and reviewed typically includes performance measures, trends, issues, and variances.

Decision Analysis Decision analysis allows you to examine and model the costs and benefits of different requirements allocation schemes before making or recommending a particular decision.

Interviews This technique is used with individuals or small groups. The business analyst is speaking with them to determine the problems or limitations of a solution as well as how the solution's performance is perceived.

Item Tracking This technique is used to record and manage stakeholder issues related to solution limitations that are impacting value realization.

Lessons Learned Lessons learned could be used to look back and discover what happened along the way to limit the solution and its ability to deliver value.

Risk Analysis and Management Risks are identified and managed on an ongoing basis during solution performance analysis. Activities include risk identification, analysis, response planning, and management.

Root Cause Analysis Root cause analysis is used to determine the underlying cause of a significant performance variance within a solution.

Survey or Questionnaire Surveys and questionnaires provide you with a

vehicle to gather quantitative and qualitative information from large numbers of stakeholders during your problem analysis efforts.

Once you have selected and applied one or more of these techniques as part of your solution limitation assessment efforts, you are ready to continue with the other Solution Evaluation tasks. First, let's look at the key output from this task, the solution limitation.

Assess Solution Limitations

The solution limitation describes the current limitation of a solution or solution component, such as constraints and defects. [Table 7.7](#) summarizes these destinations for the results of your solution limitation assessment efforts.

TABLE 7.7 Output: Assess solution limitations.

Output	Output Destinations	Destination Knowledge Area
Solution limitation	Analyze current state.	Strategy Analysis
	Recommend actions to increase solution value.	Solution Evaluation

A number of stakeholders are involved with assessing solution limitations on your project. You should always involve the end users with this work; they contribute to the actual value realized by the solution they are using and can provide feedback on the solution.

A number of additional business analysis stakeholders may be affected by your solution limitation work, including the following:

- Customer
- Domain SME
- Regulator
- Sponsor
- Tester

Let's move on and take a detailed look at the next task found in the Solution Evaluation knowledge area—assessing the enterprise limitations for a solution.

Assess Enterprise Limitations

Another interesting task in the Solution Evaluation knowledge area is assessing the enterprise limitations of a solution. As a business analyst, you are an agent of change; you shepherd new solutions from conception to completion. The trick is proving that the operational solution delivers its potential value to the enterprise. Assessing enterprise limitations identifies the root causes of specific factors and describes how those factors can limit a solution's value realization potential.

Exam Spotlight

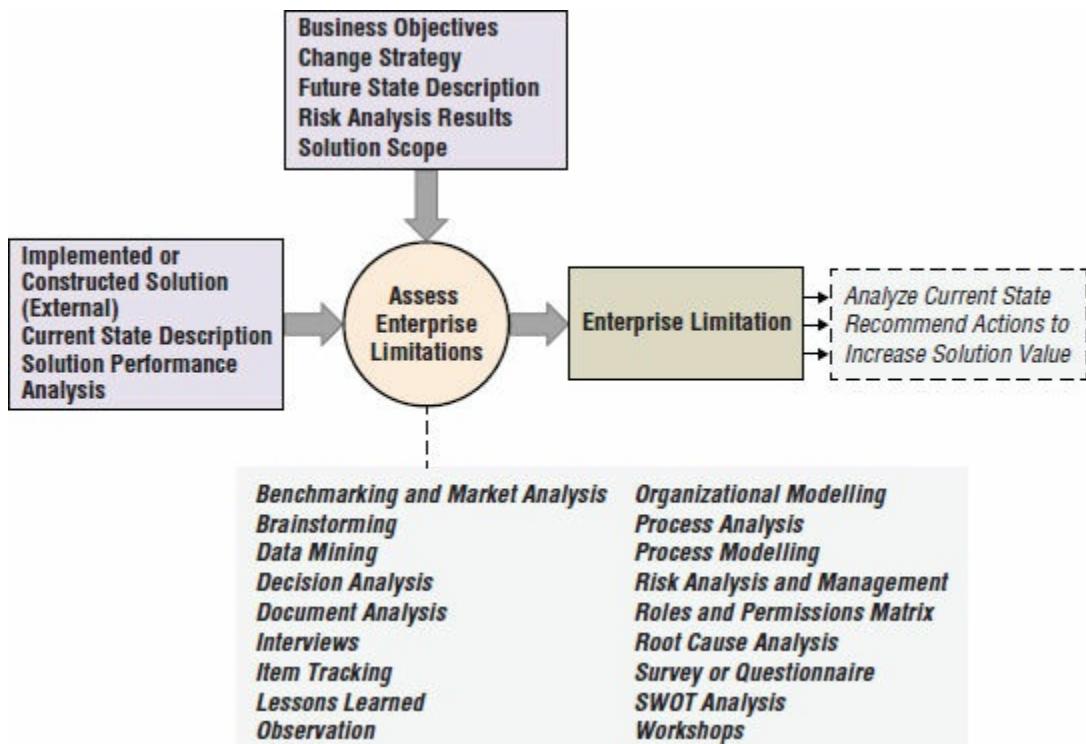
Be sure you recognize what an enterprise limitation for a solution or solution component might be on your exam. Enterprise limitations include the following factors:

- Culture
- Operations
- Technical components
- Stakeholder interests
- Reporting structures

Many factors external to a solution may impact its ability to deliver business value. Frequently, solutions operate across organizational boundaries within the enterprise with many interactions and interdependencies. Solutions may depend upon external factors, such as outsourcing your solution's servers to a third-party vendor.

Enterprise limitations can be assessed at any time during the solution life cycle, from component development to full solution implementation. Existing, operational solutions can also be assessed if the need arises.

[Figure 7.4](#) summarizes the inputs, guidelines, tools, outputs, techniques, and associated tasks used to assess enterprise limitations relative to a solution.



[FIGURE 7.4](#) Task summary: Assess enterprise limitations.

Several key inputs are needed to assess the enterprise limitations of a solution. These key inputs are produced by a number of other business analysis tasks, and they include the *implemented solution* (also known as the *constructed solution*), the current state description, and the solution performance analysis results. Let's look at each of these task inputs in greater detail.

Implemented or Constructed Solution (External) The implemented or constructed solution must actually exist. It may be in operational use or a prototype. In either case, the solution must be in use so its performance can be measured and analyzed.

Current State Description The current state description describes the environmental, cultural, and internal factors of the solution being measured and analyzed.

Solution Performance Analysis This deliverable describes how the solution performs relative to the business goals and objectives that led to its creation and implementation. It contains the results of analyzing the solution performance measurements that were collected and the business analyst's recommendations relative to the results of the measurements.

There are additional inputs that can be used by business analysis tasks: guidelines and tools. Let's take a look at the guidelines and tools that may also be used as inputs when assessing solution limitations:

Business Objectives Business objectives are measurable results indicating a business goal has been met. Be sure to consider these objectives when measuring solution performance.

Change Strategy The change strategy is a high-level plan of key activities and events relative to a proposed change. Be sure to reference this information when implementing a solution and when creating performance measures for that solution.

Future State Description The future state description provides a definition of the boundaries for the solution scope and all of the solution components. It also links back to the potential value expected from the future state.

Risk Analysis Results Risk analysis results contain the overall level of risk for the solution as well as the individual risks for the solution components.

Solution Scope Solution scope defines the solution boundaries for what is in scope and what is out of scope. These solution boundaries are used to define what needs to be measured and evaluated.

[Table 7.8](#) summarizes the inputs, guidelines, and tools for this task and lists the task and knowledge area sources for each input used to assess enterprise limitations.

TABLE 7.8 Inputs, Guidelines, and Tools: Assess enterprise limitations.

Task Input	Input Type	Input Source	Source Knowledge Area

Implemented or constructed solution (external)	Input		
Current state description	Input	Analyze current state.	Strategy Analysis
Solution performance analysis	Input	Analyze performance measures.	Solution Evaluation
Business objectives	Guidelines and tools	Define future state.	Strategy Analysis
Change strategy	Guidelines and tools	Define change strategy.	Strategy Analysis
Future state description	Guidelines and tools	Define future state.	Strategy Analysis
Risk analysis results	Guidelines and tools	Assess risks.	Strategy Analysis
Solution scope	Guidelines and tools	Define change strategy.	Strategy Analysis

Four key elements are found in a thorough enterprise limitations assessment. Together they make up the bulk of your assessment findings. They are as follows:

- Enterprise culture assessment
- Stakeholder impact analysis
- Organizational structure changes
- Operational assessment

Let's look at each of these four elements in greater detail:

Enterprise Culture Assessment The cultural part of your assessment focuses on the willingness of your key stakeholders to change and accept the solution. You need to put your marketing hat on and sell this solution as part of your business analysis activities. This involves understanding each key stakeholder's willingness to change and getting them on board with the changes that are coming with the new solution. Your stakeholders need to understand and buy into the rationale for the new solution and the benefits it provides.

Stakeholder Impact Analysis Your assessment must address how the changes from your new solution will affect your stakeholders. There are a number of things to consider.

Functions Your impact analysis should look at the solution capabilities that each stakeholder group uses and address the significant work changes. Consider new or modified processes, as well as specific applications that the stakeholders will now be using as part of their jobs.

Locations Stakeholder location also comes into play when assessing the

impacts of change. If your stakeholders are all located in one place, it will be easier to train and support their use of the new solution. If your stakeholders are found in multiple locations, you will have to address how they learn to use the new solution and get assistance when they have questions in a virtual environment.

Concerns Stakeholder concerns and issues should also be addressed in your analysis. There are several areas to consider, such as solution usability, work demands, potential job loss, or changes in work satisfaction.

Organizational Structure Changes Solutions can impact and change organizational structure. Business analysts need to assess the organizational structure supporting a solution to make sure that structure allows the solution to perform effectively. In addition to the formal working relationships, knowledge of the informal stakeholder relationships within the organization can be very helpful to the business analyst in understanding the practical, day-to-day working structure.

Operational Assessment This part of your assessment focuses on the capabilities that the new solution will provide and how the stakeholders will use those capabilities. You might need to create new policies and procedures governing use of the solution. Training might be needed so folks know how to use the solution correctly. Systems support and maintenance also need to be planned and put in place prior to solution implementation.

Exam Spotlight

When conducting an *operational assessment* for a solution, business analysts should consider the following six areas:

- Policies and procedures
- Capabilities and processes
- Skill and training needs
- Human resources practices
- Risk tolerance and management approaches
- Tools and technology required for supporting the solution

There are several techniques that you may use when assessing enterprise limitations. Let's step through those techniques now.

Techniques to Consider

The *BABOK® Guide* recommends using one or more of the following techniques when you are assessing enterprise limitations. These techniques are summarized for you here:

Benchmarking and Market Analysis Benchmarking can be used to identify existing solutions and enterprise interactions for a new solution. This identification is done relative to the potential value of that new solution defined in the future state description and the change strategy.

Brainstorming This technique is used to generate many ideas from a stakeholder group in a short period of time. The resulting ideas can then be organized and prioritized to identify solution improvement opportunities and stakeholder concerns.

Data Mining This technique is used to collect and analyze the solution performance data. Data mining is particularly useful when you are identifying factors that constrain the performance of the solution.

Decision Analysis Decision analysis allows you to examine and model the consequences of different decisions before actually making or recommending a particular decision. This technique helps you to make decisions about functional, technical, or procedural gaps in the solution.

Document Analysis Reviewing existing documentation is a way for the business analyst to understand the enterprise culture, operations, and structure.

Interviews Interviews provide a forum for identifying organizational gaps or stakeholder concerns with the new solution and discussing possible solutions or workarounds.

Item Tracking This technique is used to record and manage stakeholder issues related to solution limitations that impact value realization.

Lessons Learned Lessons learned could be used to look back at previous initiatives and discover what happened along the way to limit the solution and its ability to deliver value to the enterprise.

Observation Observation is used to provide feedback on stakeholder or user perception of a solution or to reconcile contradictory results. Sometimes it makes enterprise and solution interactions clear when you witness them and see what is going on.

Organizational Modelling Organization models offer a view of your stakeholder groups and stakeholders to use while assessing organizational readiness and the need for organizational changes.

Process Analysis Process analysis assesses a process for efficiency and effectiveness. This technique is used to identify opportunities to improve solution performance.

Process Modelling Process models identify activities that will change when the new solution is implemented and tell you which stakeholders perform these activities. This allows you to focus on who is impacted by the change.

Risk Analysis and Management This technique is used to consider the risks of a new solution relative to the enterprise across several areas: technology, finance, and business. It is essential that the required functionality and ability of the organization to change be considered and addressed.

Roles and Permissions Matrix The roles and permissions matrix helps the

business analyst determine roles and permissions for stakeholders and end users of a new solution.

Root-Cause Analysis Root-cause analysis is used to determine the underlying cause of a significant performance variance within a solution. Sometimes this underlying cause is related to enterprise limitations.

Survey or Questionnaire Surveys and questionnaires are techniques that give you a forum for identifying organizational gaps or stakeholder concerns with the new solution.

SWOT Analysis The strengths, weaknesses, opportunities, and threats (SWOT) analysis technique demonstrates how a change will help the organization by categorizing the strengths, weaknesses, opportunities, and threats associated with the new solution.

Workshops Workshops, or review meetings, are used to identify organizational gaps or stakeholder concerns about a new solution in a structured group setting.

Once you have selected and applied one or more of these techniques as part of your enterprise limitations assessment efforts, you are ready to continue with other assessment tasks. Before moving on, let's look at the key output from this task, the description of the enterprise limitations that were found.

Build the Enterprise Limitation Assessment

Your enterprise limitation assessment describes the current *enterprise limitations* of a solution. Be sure to look at how solution performance impacts the enterprise. You always need to keep in mind that a solution isn't a success if people are unable to use it effectively.

[Table 7.9](#) summarizes the enterprise limitation assessment and the task that uses this output.

TABLE 7.9 Output: Assess enterprise limitations.

Output	Output Destinations	Destination Knowledge Area
Enterprise limitation	Analyze current state.	Strategy Analysis
	Recommend actions to increase solution value.	Solution Evaluation

A number of stakeholders will be involved with assessing enterprise limitations for a new solution. Domain SMEs and end users should be part of this effort since they are close to the solution and can identify how the organization interacts with it. Several other business analysis stakeholders might be involved with the enterprise limitation assessment, such as the following:

- Customer
- Regulator

- Sponsor

Let's move on and step through the final task found in the Solution Evaluation knowledge area—recommending actions to create solution value.

Recommend Actions to Increase Solution Value

Estimating the potential value of a solution can be quite different from realizing the actual value once that solution is operational. One key task performed by business analysts is trying to align the potential value and the actual value of a solution as much as possible. The previous four tasks in the Solution Evaluation knowledge area collect solution performance data, measure the solution performance, and assess solution and enterprise limitations that may impact the actual value. This task uses the results from the other tasks to understand the big picture of a solution's value and recommend ways to improve solution performance and value realization.



Real World Scenario

The New Solution Strikes Back

Russ, a project manager, held a meeting at a biotechnology company to discuss kick-off plans for a new project targeting the upgrade of their existing Laboratory Information Management System (LIMS). This company is a leading human therapeutics company in the biotechnology industry, focused on providing drugs that support cancer treatments.

The current LIMS system was homegrown and had evolved over many years to reach its current state. Although the system supported the integration of the laboratory software, hardware, and instruments, the product quality team felt that a newer system and solution could do a much better job of tracking laboratory-related work, planning samples, and automating workflow.

As part of his introduction to the organization, the plant manager took Russ on a tour of the production facility. Russ was very impressed with the plant and its operations. At one point on his tour, Russ stopped in front of a very large processing vat placed beneath a very large skylight.

"What an interesting piece of equipment." Russ commented. "What is it used for?"

Dan, the plant manager, replied that this particular piece of equipment was used to distill the drug as part of its production.

Russ looked up at the skylight and asked, "Does the process require this much natural light?"

Dan smiled and shook his head. "Oh, no," he replied. "This is my daily reminder of what happens when you don't spend enough time planning for

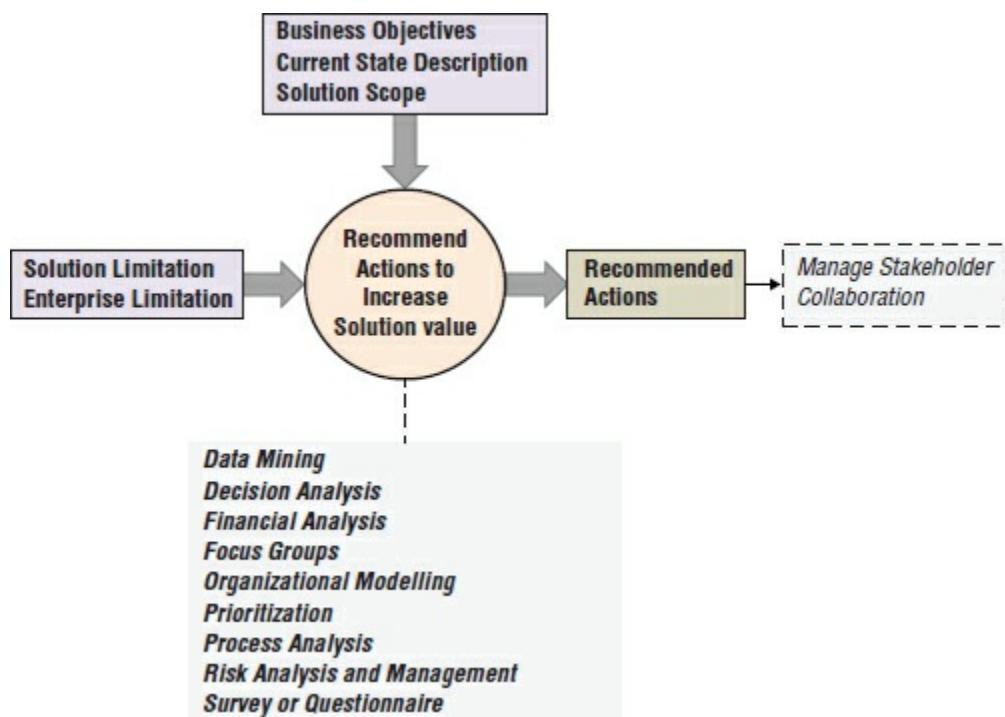
implementation.”

Dan went on to explain to Russ that this particular piece of equipment was ordered from Germany and shipped to the plant location in the United States. When it arrived at the new plant building, the installation team was stunned to discover that the vat did not fit in the doors.

To get this critical piece of equipment into the new building, Dan had to authorize cutting a skylight in the roof and using a crane to drop the vat into place. As Dan told Russ, the transition requirements that assist you in implementing your project are quite critical. They are even more critical when you discover after the fact that you missed something. Missing something during your solution development implementation can equal more costs, which equals less value realization from that solution.

Solution-focused recommendations look at how solutions should be replaced, retired, or enhanced. These recommendations have a long-term perspective over the life of the solution within the enterprise. The solution or the organization may require adjustment in order to use the solution more effectively and realize additional value from its use.

[Figure 7.5](#) summarizes the inputs, guidelines, tools, outputs, techniques, and associated tasks used to assess the readiness of your organization to adopt and use a new solution.



[FIGURE 7.5](#) Task summary: Recommend actions to increase solution value.

Several key inputs are needed to define transition requirements. These key inputs are produced by a number of other business analysis tasks. Let's take a look at each of these task inputs in greater detail:

Enterprise Limitation Enterprise limitations look at how solution

performance impacts the enterprise relative to any limitations that enterprise might have.

Solution Limitation Solution limitations focus on the limits, constraints, and defects of the solution itself and how those limitations might impact value realization.

There are additional inputs that can be used by business analysis tasks: guidelines and tools. Let's take a look at the guidelines and tools that may also be used as inputs when recommending actions to increase solution value:

Business Objectives Business objectives are measurable results indicating a business goal has been met. Be sure to consider these objectives when evaluating, measuring, and determining solution performance.

Current State Description The current state description provides the context of the existing enterprise where the work needs to be done. It can be used to assess alternatives and understand ways to increase solution value.

Solution Scope Solution scope defines the solution boundaries for what is in scope and what is out of scope. These solution boundaries are used to define what needs to be measured and evaluated.

[Table 7.10](#) summarizes the inputs to this task and lists the task and knowledge area sources for each input used when recommending actions to increase solution value.

TABLE 7.10 Inputs, Guidelines, and Tools: Recommend actions to increase solution value.

Task Input	Input Type	Input Source	Source Knowledge Area
Enterprise limitation	Input	Assess enterprise limitations.	Solution Evaluation
Solution limitation	Input	Assess solution limitations.	Solution Evaluation
Business objectives	Guidelines and tools	Define future state.	Strategy Analysis
Current state description	Guidelines and tools	Analyze current state.	Strategy Analysis
Solution scope	Guidelines and tools	Define change strategy.	Strategy Analysis

Two key elements must be considered when you are building these recommendations for your project. Let's look at each of these elements in greater detail:

Adjust solution performance measures. Sometimes a new solution does not quite fulfill the business goals and objectives that triggered the project in the first place. Issues, defects, problems, or discrepancies need to be recorded, prioritized, and resolved. Another option is to change the solution performance

measures based upon what is taking place. For a particular solution, more appropriate and achievable measures may be required.

Recommendations Recommendations describe ways to increase solution performance. There are several common recommendations that might be made based upon the situation. [Table 7.11](#) summarizes these recommendations.

TABLE 7.11 Common solution recommendations

Recommendation	Description
Do nothing.	Remain in the current state when the value of a change is low and the cost/risks of making the change are high.
Organizational change	Make changes to organizational structure or personnel, such as automating work, simplifying work, or improving access to information.
Reduce interface complexity.	Make it easier to share and understand work or data between systems or people.
Eliminate redundancy.	Meet the common needs of different stakeholder groups with a single solution to reduce implementation costs.
Avoid waste.	Remove activities that do not add value and minimize activities that do not directly contribute to the final product.
Identify additional capabilities.	Be aware of capabilities in the solution that exceed requirements and make sure they will provide future value.
Retire the solution.	Replace a solution or component because of old technology, insourcing, outsourcing, or a solution not fulfilling its goals.

Additional factors may impact a decision to replace, retire, or revamp a solution. Be sure to look at the ongoing costs of operating the solution versus the initial investment that was made to create the solution. Remember that *opportunity costs* also come into play. Opportunity cost is the potential value that could be realized from pursuing other solutions versus the solution you have on hand.

Necessity also plays a role here. Many solutions and their components have a limited life span and must be replaced at a certain point in time. Don't forget the *sunk costs*, which are the money and effort already committed to a solution. Many folks hold on to a bad solution versus replacing, eliminating, or redirecting the solution because of the sunk costs that cannot be recovered.

You can select from a number of business analysis techniques when recommending actions to increase solution value. Let's take a look at them now.

Techniques to Consider

The *BABOK® Guide* recommends using one or more of the following techniques when you are recommending actions to increase the value of a new solution.

They are summarized here:

Data Mining This technique is used to generate predictive estimates of solution performance. Data mining is particularly useful when there is a lot of data to analyze relative to a particular solution.

Decision Analysis Decision analysis allows you to examine and model the consequences of different decisions before actually making or recommending a particular decision. Effective decision analysis helps you determine the impact of acting upon solution issues.

Financial Analysis There are numerous financial analysis techniques available to assess the potential costs and benefits of a proposed change.

Focus Groups Focus groups are often used to give assessment, insight, and impressions of a solution's performance and the associated performance measures.

Organizational Modelling Organization models offer a view of your stakeholder groups and stakeholders to use while assessing organizational readiness and the need for organizational changes.

Prioritization Many business analysts use prioritization techniques to identify the relative value of different actions that might be taken to improve solution performance.

Process Analysis Process analysis assesses a process for efficiency and effectiveness. This technique is used to identify opportunities to improve solution performance.

Risk Analysis and Management This technique is used to evaluate different solution outcomes and their associated risks under specific conditions.

Survey or Questionnaire Surveys and questionnaires are often used to collect information from stakeholders about solution performance. They can help you get feedback on value realization based upon the performance measures and analysis that has been done.

Once you have selected and applied one or more of these techniques as part of your efforts, you are ready to continue with the work at hand. Before moving on, let's look at the key output from this task—your recommended actions.

Develop the Recommended Actions

The recommended actions provide a summary of what should be done to improve the value of a solution within the enterprise. This output is picked up by the Manage Stakeholder Collaboration task in the Elicitation and Collaboration knowledge area. Stakeholders participate in the recommendation review and the decision making regarding what is to be done, if anything. Remember that the more significant the impact of a change, the more attention is directed to managing stakeholder collaboration as part of the business analysis activities.

[Table 7.12](#) summarizes the task output and the task that uses it.

TABLE 7.12 Output: Recommend actions to increase solution value.

Output	Output Destinations	Destination Knowledge Area
Recommended actions	Manage stakeholder collaboration.	Elicitation and Collaboration

The business analyst is responsible for recommending ways to increase solution value and opportunities on your project. A number of stakeholders are ready and able to assist you in defining these value-focused recommendations for a new solution. Several other business analysis stakeholders may be involved with your efforts, including the following:

- Customer
- Domain SME
- End user
- Regulator
- Sponsor

How This Applies to Your Projects

In this chapter, you stepped through tasks focusing on the solution that is being built and deployed by your project. These tasks ensure that the solution can be successfully implemented within the organization and add value once it is operational. In many organizations, the business analyst is responsible for supporting the business stakeholders as the solution is implemented and facilitating their transition to the new ways of doing things. Part of your responsibility is planning for the actual set of implementation activities down to the right level of detail.

Your solution implementation plan and approved solution design enable you to create data conversion requirements and build any necessary business transition strategies. It is helpful to produce an implementation plan, a data conversion plan, and any high-level requirements for the next solution release as part of your preparations for transitioning from the old solution to the new solution. A conversion plan maps data from the old solution to the new solution. It details the business rules for data conversion and sets the timing of the work.

You might have a small set of transition requirements addressing your implementation plan as part of your transition requirements. For example, they may state the following:

TR 1.0 Develop an implementation plan for the constructed solution.

TR 2.0 Plan work activities to support the contents of the implementation plan.

However, the actual implementation plan may be far more detailed based on the solution that is being implemented. [Table 7.13](#) provides you with a sample implementation plan for a software solution implementation.

TABLE 7.13 Sample implementation plan

Date/Time <i>(All times MST)</i>	Task Description
Pre-Rollout Steps	
7/10/10 12:00 AM	Send release notes to sys admin to post. Send support documentation to sys admin.
7/10/10 12:00 AM	Update website with upcoming maintenance message via GUI interface.
7/10/10 12:00 AM	Confirm production environment is ready for release rollout.
7/12/10 12:00 AM	Set up all new policy templates.
7/12/10 12:00 AM	Set up Oracle templates (release data).

7/12/10 12:00 AM	Set up Oracle templates (asset data).
7/15/10 10:30 AM	Shut down Oracle database.
7/15/10 10:45 AM	Drop the replication for groups that have changed.
7/15/10 11:30 AM	Run the table, stored procedure, and data changes.
7/15/10 11:30 AM	Run the database update scripts.
7/15/10 12:00 Noon	Verify the scripts ran successfully.
7/15/10 12:00 Noon	Set the billing start time to 00:05.
7/15/10 12:30 PM	Rebuild the changed replication groups.
7/15/10 2:00 PM	Restart Oracle.
7/15/10 2:00 PM	Join conference bridge for checkpoint.
7/15/10 2:00 PM	Publish build kit to lab to test rollout procedure.
7/15/10 4:00 PM	Copy latest/final build out to all production servers in two data centers.

Rollout Steps

7/16/10 12:00 Midnight	Verify that all participants have joined the maintenance bridge and that there are no network jeopardies that would cause this maintenance to be rescheduled.
7/16/10 9:00 AM	Post maintenance message on websites.
7/16/10 12:01 AM	Verify that billing has completed.
7/16/10 12:02 AM	Reset billing to its original start time.
7/16/10 12:03 AM	Stop services and web servers.
7/16/10 12:05 AM	Export a copy of the application in case you have to roll back.
7/16/10 12:30 AM	Shut down Oracle database (15 minutes).
7/16/10	Drop the replication for groups that have changed (45 minutes).

12:45 AM	
7/16/10 1:30 AM	Run the table, stored procedure, and data changes (1 hour).
7/16/10 1:30 AM	Run the database update scripts.
7/16/10 2:00 AM	Verify the scripts ran successfully (5 minutes, overlapping).
7/16/10 2:00 AM	Rebuild the changed Replication Groups (90 minutes).
7/16/10 3:30 AM	Restart Oracle (5 minutes).
7/16/10 6:00 AM	Copy the configuration file in the SFTPFileFetcher directory to temp to preserve the data.
7/16/10 6:00 AM	Publish application code to data center production servers.
7/16/10 6:30 AM	Copy the config file from the temp directory and verify.
7/16/10 6:30 AM	Move SetDBDefaults.exe to c:\netfiles\bin to run it to avoid errors.
7/16/10 6:30 AM	Run the script for the web service: DeploymentUtil\UtilityScripts\ Rollout 6.0\Run.bat.
7/16/10 6:30 AM	Ensure all services are running in production.
7/16/10 6:30 AM	Join the conference bridge for checkpoint.
7/16/10 6:30 AM	Verify the correct application operation over a period of time. (unit testing).
7/16/10 7:00 AM	Join the conference bridge for checkpoint and quality control handoff.
7/16/10 8:00 AM	Quality assurance testing period begins.
7/16/10 8:00 AM	1 End-to-end Test of Policy Propagation (Client–Manual/Auto). <i>Note: Expect testing to take 10 to 12 hours.</i>
7/16/10 12:00 Noon	Join the conference bridge for checkpoint.
7/16/10 4:00 PM	Join the conference bridge for checkpoint.
7/17/10 9:00 AM	Verify the billing is back up-and-running.
7/17/10 9:00 AM	Copy updated software download files to each of the web servers in preparation for the Saturday deployment.

7/17/10 12:00 AM	Set up URL links in export server.
7/17/10 9:00 AM	Copy updated software download files to each of the web servers.
7/17/10 6:30 PM	Correct an issue with the policy feed.
7/18/10 11:00 PM	Request a final security scan of all servers.
7/19/10 12:00 AM	External system production testing.
7/19/10 6:00 AM	Release complete; publish management and customer notifications.

This particular solution implementation plan was built and performed for a software upgrade at a client site in Colorado. As you can see, the two statements—build the plan and schedule the work from that plan—exploded into a detailed set of steps to support implementation of this software release.

Summary

The five tasks in the Solution Evaluation knowledge area guide you in effectively assessing, selecting, and validating the solution that will be implemented in the organization to meet the business goals and objectives. Effective problem-solving skills are an underlying competency enabling you to do this solution-focused work. You will be asked to analyze problems with the designed and constructed solution and recommend ways to address any defects and issues that you and your stakeholders find. Applying your structured problem-solving skills results in implementing a solution that meets or exceeds its quality and acceptance criteria.

The *BABOK® Guide* recommends applying a number of techniques as part of your solution evaluation efforts. You don't need to be an expert in every technique, but most experienced business analysts are comfortable using a representative subset of those techniques.

A number of key business analysis deliverables are produced by the tasks found in this knowledge area. You will produce several assessments looking at the solution, the organization's readiness to adopt that solution, and the solution's performance once operational. These assessments are a key part of your role in making sure the right solution is implemented in the right way for your business.

Exam Essentials

Be able to list the tasks found in the Solution Evaluation knowledge area. You will see questions about the tasks, their associated techniques, their more detailed elements, and the key outputs that they produce on your exam. You should memorize the tasks of this knowledge area and the key outputs associated with them. The five tasks are:

- Measure solution performance.
- Analyze performance measures.
- Assess solution limitations.
- Assess enterprise limitations.
- Recommend actions to increase solution value.

Be able to understand and apply the techniques found in this knowledge area. Understanding and applying the techniques to assess and validate your solution and its performance is a key focus for your Solution Evaluation knowledge area exam questions. Be sure that you can name the techniques recommended here and associate them with the tasks that use them.

Be able to describe and distinguish between assessing solution and enterprise limitations. Make sure you can define and distinguish between the solution and enterprise limitation assessments that are created and used by the tasks in the Solution Evaluation knowledge area.

Be able to define the three recommended statistical sampling techniques. The *BABOK® Guide* uses three statistical sampling concepts for collecting solution performance measures. Make certain you understand what they are and how they differ.

- Volume or sample size
- Frequency and timing
- Currency

Be able to discuss the three aspects of stakeholder impact analysis relative to a new solution. When assessing enterprise limitations, there are three areas to be considered as part of the stakeholder assessment.

- Functions
- Locations
- Concerns

Be able to distinguish between a solution, solution components, and a release. A solution is a set of changes to an organization's current state enabling the organization to meet a business need, solve a problem, or take advantage of an opportunity.

Solutions are made up of solution components, the parts of a solution that span

the enterprise architecture of the organization, such as new business processes, new software applications, or new hardware. Each solution component implements a subset of the solution requirements.

Solutions are typically implemented in releases. A release is the distribution of all or part of a scheduled operational solution, such as a release consisting of software application code, related documents, and support materials.

Key Terms

You have just finished stepping through the contents of the sixth and final knowledge area from the *BABOK® Guide*: Solution Evaluation. The tasks in this knowledge area focus on making sure that the defined solution can be successfully implemented in the organization and used by its stakeholders.

To be an effective business analyst, you should understand how to apply the techniques and tasks in this knowledge area. Additionally, you will need to know the five tasks and their associated elements and techniques from this knowledge area in order to be successful on the CBAP® or CCBA™ exam. The tasks include the following:

- Measure solution performance.
- Analyze performance measures.
- Assess solution limitations.
- Assess enterprise limitations.
- Recommend actions to increase solution value.

A number of new key words in Chapter 7 relate to assessing and validating your new solution. Here is a list of some of the key terms that you encountered in this chapter:

- acceptance criteria
- Beta release
- constructed solution
- currency
- enterprise limitations
- evaluation criteria
- frequency and timing of measurements
- implemented solution
- necessity
- operational assessment
- operational life
- operational releases
- opportunity costs
- pilot release
- proofs of concept
- prototypes

qualitative measures
quantitative measures
solution component
solution performance analysis
solution performance measures
sunk costs
transition requirements
variance
volume or sample size

Review Questions

1. Solution Evaluation tasks can be performed on solutions in different stages of development. You want to evaluate a solution component that is part of a limited implementation that is not fully released. What type of solution are you working on?
 - A. Prototype
 - B. Operational
 - C. Pilot
 - D. Proof of concept
2. Which input best provides you with the measurable result that the enterprise wants to achieve?
 - A. Business goal
 - B. Business objective
 - C. Business requirement
 - D. Business need
3. What technique ensures that issues arising from assessing enterprise limitations are addressed and resolved?
 - A. Decision analysis
 - B. Item tracking
 - C. Metrics and KPIs
 - D. Root cause analysis
4. According to the BACCM™, a business analyst may recommend a change either to a solution or to the _____ to realize the potential value of a solution.
 - A. Limitations
 - B. Requirements
 - C. Solution
 - D. Enterprise
5. You are determining the most appropriate response to identified problems in a delivered solution. What task are you performing?
 - A. Measuring solution performance
 - B. Assessing solution limitations
 - C. Analyzing solution performance
 - D. Assessing the enterprise limitations
6. What is the best recommendation to make when the value of a change from a current state is low relative to the effort required to make that change?
 - A. Retire solution.

- B. Reduce complexity.
 - C. Do nothing.
 - D. Avoid waste.
7. To evaluate solution performance, the solution must exist in some form and be _____.
- A. Verified
 - B. Approved
 - C. External
 - D. In Use
8. Which stakeholder approves the potential value of a solution?
- A. Business analyst
 - B. Sponsor
 - C. Domain SME
 - D. Project manager
9. Requirements that are associated with the solution component that will implement them are called:
- A. Verified requirements
 - B. Solution requirements
 - C. Traced requirements
 - D. Allocated requirements
10. You are making decisions about replacing or retiring a solution. One factor you consider includes the money and effort that has already been committed to this current initiative. What factor are you considering?
- A. Sunk cost
 - B. Necessity
 - C. Opportunity cost
 - D. Ongoing cost
11. What is another name for a solution that exists in some way?
- A. Designed solution
 - B. Constructed solution
 - C. Implemented solution
 - D. Allocated solution
12. When should you begin to allocate requirements to the solution components that will implement those requirements during a project?
- A. When the real project requirements are derived

- B. When the proposed solution is being assessed
 - C. When the solution approach is determined
 - D. When solution design and construction starts
3. When should transition requirements be defined?
- A. While the solution is being designed
 - B. After the solution has been designed
 - C. Before the solution is actually designed
 - D. When required capabilities are defined
4. What technique would you select to discover whether a solution defect is a symptom of a deeper, underlying problem?
- A. Root-cause analysis
 - B. SWOT analysis
 - C. Force-field analysis
 - D. Decision analysis
5. You are investigating how a solution affects a particular stakeholder group after that solution has been deployed. What Solution Evaluation task are you performing?
- A. Assessing enterprise limitations
 - B. Analyzing performance measures
 - C. Assessing solution limitations
 - D. Measuring solution performance
6. When assessing enterprise limitations using the risk analysis and management technique, what three areas of risk should be considered?
- A. Strategic, tactical, operational
 - B. Technology, finance, business
 - C. High, medium, and low impact
 - D. Capability, condition, constraint
7. What type of requirements should address employee training, conversion of existing information, and user acceptance testing?
- A. Stakeholder
 - B. Transition
 - C. Implementation
 - D. Functional
8. What technique might assist you in measuring solution performance?
- A. Business cases

- B. Decision analysis
 - C. Metrics and KPIs
 - D. Vendor assessment
9. Which task has solution performance measures as an input?
- A. Measure solution performance.
 - B. Assess solution limitations.
 - C. Analyze performance measures.
 - D. Assess enterprise limitations.
10. What is the best reason for involving a business analyst in Solution Evaluation tasks?
- A. They bring technical skills to the solution assessment process.
 - B. They have built relationships with all key project stakeholders.
 - C. They are most knowledgeable about the business environment.
 - D. They work closest with the project manager and the project team.

Chapter 8

Underlying Competencies

CBAP®/CCBA™ EXAM TOPICS COVERED IN THIS CHAPTER:

- ✓ Business analysis underlying competencies**
- ✓ Analytical thinking and problem-solving skills**
- ✓ Key business-analysis behavioral characteristics**
- ✓ Business knowledge, tools, and technology**
- ✓ Communication and interaction skills**



Successful business analysts possess a wide spectrum of skills and knowledge. Being a technical expert in a particular area or possessing subject matter expertise in a particular industry does not guarantee success as a business analyst on a project. Effective business analysts possess a core framework consisting of business, technical, and domain knowledge. This core framework is further enhanced by your management, interpersonal, communication, business, and structured problem-solving skills.

The required knowledge and skills range from applying structured analysis techniques to managing issues to addressing solution usability. You must be able to provide relevant business and domain knowledge for the organization's products, processes, markets, and systems, and incorporate specific business and software application skills. The personal qualities, knowledge, behaviors, characteristics, and skills you bring to and acquire for your role as a business analyst are known as the *underlying competencies*.

Essential Skills of Effective Business Analysts

Underlying competencies describe and reflect the behaviors, characteristics, knowledge, and personal qualities that make you an effective business analyst on a project. The *BABOK® Guide* categorizes these essential skills and knowledge into six categories. You can think of these categories as building blocks that you bring to each of your projects when you put on your business analysis hat, roll up your sleeves, and start working. The underlying competencies include the following:

- Analytical thinking and problem-solving skills
- Behavioral characteristics
- Business knowledge
- Communication skills
- Interaction skills
- Tools and technology

This chapter of the book steps you through these core skills. A strong and balanced set of these underlying competencies provides you with tremendous value when performing your project's business analysis tasks. The "Underlying Competencies" section is found in Chapter 9 of the *BABOK® Guide*.

Exam Spotlight

You will not find a specific percentage of questions about underlying competencies on your certification exam. Instead, you will find questions within the six knowledge areas that check your skills in and your knowledge of these underlying competencies. Be sure to study this chapter thoroughly because it is all considered testable content.

Of course, the skills and knowledge discussed here are not confined just to performing business analysis work. They are fundamental skills required to perform almost any role in any organization. Project managers, subject matter experts, and senior managers are expected to possess a solid set of these underlying competencies.

When Are the Underlying Competencies Used?

Even if you are on the right track, you will get run over if you just sit there.

—Will Rogers

The knowledge and skills found in the underlying competencies are used by business analysts across the project life cycle as well as in their day-to-day work

that is not related to a specific project. You might find yourself selecting a project approach by facilitating a meeting of key stakeholders and reaching agreement on the best way to get the project underway and completed. You might be called on to resolve a conflict between two opposing stakeholder groups about the relative priorities of solution requirements. You might build and deliver training on new solution capabilities to your end users.

Remember the Six Knowledge Areas

Be sure you know the six knowledge areas and the work you perform when you are using them. These knowledge areas and their tasks are where you apply the underlying competencies.

Business Analysis Planning and Monitoring This knowledge area is where you plan how to approach your project's business analysis effort. The approach is a set of processes, templates, and activities used to perform business analysis in a specific context. The tasks govern and monitor the performance of all other business analysis tasks. These planning and monitoring activities take place throughout the project life cycle. The results of this knowledge area govern the tasks found in the remaining five knowledge areas and set the performance metrics to be used to evaluate all business analysis work.

Elicitation and Collaboration Elicitation and Collaboration defines how business analysts work with stakeholders to identify and gather requirements and understand their needs and concerns. A tremendous amount of interaction with people occurs in this knowledge area. You will find yourself working with the project team and the stakeholders to gather requirements information, record the elicitation results, and confirm those results with your stakeholders.

Requirements Life Cycle Management This knowledge area describes how you will manage and maintain requirements and design information from the beginning of the project to the end. You will find yourself managing changes, conflicts, and issues related to the project requirements across the project life cycle.

Strategy Analysis Strategy Analysis focuses on identifying the current business state that drives a project and defining a feasible solution scope that will provide the desired future state including the change strategy and risk assessment. This knowledge area includes developing the business requirements for a project that define the high-level goals, objectives, and needs of the organization and the high-level business functionality needed in the resulting solution.

Requirements Analysis and Design Definition Requirements Analysis and Design Definition steps you progressively through elaborating and prioritizing the stakeholder and solution requirements for a project. Stakeholder requirements define the needs of stakeholders and how they

interact with a solution. Stakeholder requirements act as a bridge between high-level business requirements and more-detailed solution requirements. In turn, the more-detailed solution requirements describe the solution characteristics and architecture that will be needed to meet the higher-level business and stakeholder requirements.

Solution Evaluation Solution Evaluation determines whether value is being delivered by proposed, in-progress, and implemented solutions before, during, and after the project life cycle. This is also where the project's change strategy is defined. The solution limitations would also be assessed and recommendations provided to increase the value of the advised solution.

These key skills and knowledge may be used to perform any task or technique found in any of the six knowledge areas. Let's take a look at the first set of core skills—*analytical thinking and problem solving*.

Analytical Thinking and Problem-Solving Skills

Facilitating solutions to business problems would be impossible without a structured approach for addressing the problem at hand. Analytical thinking and problem-solving skills enable you to assess and understand a situation. Once that situation is fully understood, you can assess and recommend one or more potential solutions to address the business need, problem, or opportunity at hand. The *BABOK® Guide* breaks the essential analytical thinking and problem-solving skills into seven more detailed areas:

- Creative thinking
- Decision making
- Learning
- Problem solving
- Systems thinking
- Conceptual thinking
- Visual thinking

Let's take a look at each of these areas that add up to an effective skill set in analytical thinking and problem solving. First up are your creative thinking skills.

Creative Thinking

Creative thinkers are able to generate new ideas, concepts, and alternative solutions when solving business problems. Many times, the ideas being generated are innovative and new ways to get the job done. It isn't just about your creative thinking skills. You also need to ask questions and challenge assumptions in order to foster creative thinking in your other team members and stakeholders.



Real World Scenario

Palmer Divide Vineyards: An Unexpected Freeze

Palmer Divide Vineyards recently reaped the benefits of creative thinking and problem solving. Even though the weather at the vineyard is fairly temperate, every now and then winter brings a freeze. There was an unexpected freeze recently, but the vineyard watering systems suffered no ill effects because the agriculture team quickly reacted to the cold temperatures. Several years ago, the vineyard installed a new watering system for the terraces of grapes it grows. The design of the new watering system was a bit backward—starting with the water supply at the top of the vineyard terraces and ending at ground level. Because of this creative organization, staff members were able to turn a few knobs to drain the watering system when the freeze hit instead of trying to find a company to come and blow pressurized air to clear water out of the system. Using gravity to drain the system from the terraces was both creative and practical.

Creative thinking is just one piece of the puzzle. It is one thing to generate innovative ideas and possible solutions to a problem and quite another thing to decide what actually should be done in a particular situation. With that in mind, let's move on and talk a bit about business analysts and approaches to effective decision making.

Decision Making

You should take a two-pronged approach to your decision making. You must understand what is involved in making a good decision and be able to help other project team members and stakeholders make good decisions. Decisions need to be made in situations where you are faced with multiple ways of doing things. You might be selecting between possible solutions to solve a business problem or deciding which supplier will provide your project with goods or services. Your decision analysis activities should include the following:

- Gathering and breaking down relevant information
- Making comparisons and evaluating trade-offs between options
- Identifying the option that is most desirable

Part of your decision-making process is assessing the impacts of uncertainty and of any new information. Remember, *risk* is defined as an uncertain event or condition on your project. There are always risks associated with making decisions. Your job is to minimize those risks by making the best decision possible given what you know at the time.

There are several potential traps you might encounter during decision-making

activities. The first trap is accepting the initial framing of a problem without questioning whether it is complete or correct. The second trap is the *sunk cost fallacy*, where you look at what the organization already has and how much time and money have been invested in those solutions. Based on that information, organizations often continue on in the same vein. Another phrase used to describe the sunk cost fallacy is “escalation of commitment to a failing course of action.” The third potential trap is a tendency to place greater weight on evidence confirming existing impressions instead of thinking out-of-the-box and looking for more information.

Effective decision making is a key element for the business analyst. However, there is more to doing your job well than just making decisions. You need to learn from your experiences and be able to apply them to the work at hand. Let’s take a closer look at how learning fits into our creative thinking and problem-solving skills.

Learning

Dynamic project environments encourage business analysts and all stakeholders to learn new things. As you develop requirements for different parts of the business, you should absorb new business information so you can translate that information into your requirements and their resulting solution.

It isn’t enough just to learn and remember data and raw facts. Learning can occur from visual input, auditory experiences, and the kinesthetics of doing something new. Experienced business analysts apply their understanding of the information to determine what is required for a given situation. This application is also known as *analysis*. You should also be able to synthesize what you have learned in order to identify opportunities to create new solutions. After new solutions are in place, you are also responsible for evaluating them to make sure that the resulting new solutions are effective and then making stakeholders aware of the new elements, which will allow for a full cycle of learning processes.

One key application of learning new business domain information is being able to apply it properly to the business analysis tasks in your project. Let’s take a look now at the problem-solving skills of effective business analysts.

Problem Solving

Business analysts are frequently asked to evaluate and select solutions that meet defined business objectives. Your project’s selected solution targets solving an underlying problem, meeting a business need in the organization, or both. Your primary goal when addressing a business problem is solving that problem. You get this done through a combination of *problem definition*, *alternatives identification*, and decision making. Let’s take a look at each item.

Problem Definition You need to make sure that the problem or business need being addressed is clearly defined and understood by your stakeholders. Any issues related to the problem or need should be identified and shared with the group. All conflicts between stakeholders relative to the problem or need should also be addressed.

Alternatives Identification Often there are many ways to solve a problem or address a business need. Solution options are developed, analyzed, and evaluated by the group. Remember that the solution options under consideration should meet the defined objectives and actually solve the problem and/or meet the business need.

Decision Making Once your problem or need is clearly defined and the solution alternatives are identified, it is time to make or recommend a decision. Trade-off decision making may be required to select the best solution to the problem or need. You want to avoid selecting a suboptimal solution because of *politics* or preconceived notions.

Making good decisions during your project's business analysis work requires having the right information and involving the right people. Your ability to put together all the pieces—what your organization does, what is known about the problem at hand, and who needs to be involved—supports your skills in structured problem solving and decision making. This takes us right into the next area of competency, *systems thinking*.

Systems Thinking

Systems thinking looks at your ability to put all the pieces together and understand the properties, behaviors, and characteristics of the system as a whole—across people, processes, and technology. This information is a moving target and can be quite unpredictable. You need to recognize that systems are not just information technology systems. You are looking at systems in the broader sense, consisting of not just the technology components but the people, the processes, and almost any other factors that come into play. This holistic approach will produce the most optimal results.

Projects and their resulting solutions are like puzzles; they possess many pieces and parts. Changes to one part of the puzzle can impact other parts, as well as the whole puzzle. You need to be aware of the complex systems that make up your business operations and keep an eye out for impacts within your new solution, as well as to the business itself, as work is being performed and decisions are being made.

Let's move on to the next category, one that also requires a holistic perspective.

Conceptual Thinking

Business analysts receive and process vast amounts of information and details in the course of their work. Applying conceptual thinking to the entire data set means that business analysts are able to identify patterns or connections between seemingly unrelated information. This big-picture view allows you to connect seemingly abstract, disconnected parts into something that makes sense. Past experience, innate skills, and your creativity help bring everything from multiple stakeholders and perspectives together in a cohesive, workable solution.

Your ability to confirm and convey with confidence the relationship between

seemingly disparate information will help stakeholders grasp the connections and put them into action. Sometimes, the picture becomes clearer to those we are trying to help understand with the use of our next skill.

Visual Thinking

Effective communication is often aided by connecting the content receiver with as many different touch points as possible. You have no doubt heard the saying “A picture is worth a thousand words.” Visual thinking allows a business analyst to communicate complex ideas through visual representation, such as models, graphics, diagrams, and illustrations. Some stakeholders may prefer nonvisual and descriptions; others may really grasp the ideas you are trying to convey once they see the visual. Both together will give the greatest opportunity to convey your concepts in a way that both right-brain and left-brain thinkers will be able to understand.

Finding the patterns, visually mapping the ideas and connections, and making comparisons may also be easier to understand when an illustration is provided. Some diagrams or images can be universally useful for conveying a specific thought or concept each time it is presented.

The next category in the underlying competencies is the *behavioral characteristics* of the business analyst. Your effectiveness on projects is not based totally on how well you illustrate your point, solve problems, or make decisions. It is also impacted by the behaviors and personal values you bring to the work you do.

Behavioral Characteristics

Effective business analysts should apply personal integrity and strength of character when dealing with people. This includes dealing with your business analysis team, your project team, and your internal and external project stakeholders. Your ability to build strong, lasting working relationships serves you and your project well. The *BABOK® Guide* breaks the key behavioral characteristics into these five areas:

- Ethics
- Personal accountability
- Trustworthiness
- Organization and time management
- Adaptability

Let's take a look at each of these essential behaviors you should exhibit in the workplace. Our first stop is a quick look at ethics and ethical behavior.

Ethics

To be respected and trusted by your team and your stakeholders, you must behave ethically. That's easy enough to say, but what exactly does it mean?

Ethical people know the difference between moral and immoral behavior and understand the standards that govern their own behavior. They act in a moral way to meet those behavioral standards.



Real World Scenario

Surprise Status

During lunch, Ginger overhears information that concerns her regarding the current status of an important business continuity study program she is working on for a large financial services firm. One of the new technical team members sitting at the next table is talking loudly to a group of his friends. He brings up a piece of information regarding the project's status that is inconsistent with the current status that he just reported to Ginger and Kim, the program manager, on an area that he is responsible for in the project plan.

"Guys, I've only been here six months, and I'm working on something that is leading edge and important. I just found out from my buddy in IT that the set of records that tracks which staff members were trained and cross-trained on critical plant operations is gone. The data got erased in a failed server transfer. Poof! No backup files. How weird is that? Hope they have hard copies somewhere. But it's cool. They'll find what we need eventually."

Ginger leans across the table and asks, "Wait a minute; have you told the rest of our team about this?"

He replies, "No way, Ginger. Tomorrow someone will find the hard copies in somebody's cube, and I'll look like an idiot. I just sent in my status report anyway. I'm not revising that thing unless I absolutely have to."

Ginger gets to her feet and collects her things.

"Come on, let's find Kim and give him this update. That missing data affects our results tremendously, and this can't wait. Grab your sandwich and come with me."

Withholding critical project information and issues is neither good nor ethical project team behavior. You should always be straightforward in sharing important information so problems can be identified and addressed as early as possible.

Your ethical behavior often comes into play during business analysis work. You may find yourself recognizing that a proposed solution or a particular requirement presents ethical difficulties. Ethical business analysts consider the interests of all stakeholders when making decisions and are sure to clearly articulate the basis of their decisions so everyone understands. Any conflicts of interest should be promptly and fully disclosed.

Ethical behavior generates trust and respect in the workplace. Personal

accountability is another behavioral characteristic that you need to review. Let's do that right now.

Personal Accountability

When business analysts are responsible and answerable for their own decisions, work, and results, the effectiveness of the team can greatly increase. Colleagues and stakeholders will have confidence that tasks will be completed to expectation and on time. The team is counting on the business analyst to deliver value, achieve stated milestones and goals, and assure that the business needs are satisfied with the right solutions. Personal accountability also means escalating risks to appropriate parties and managing concerns while meeting the ultimate goal.

Personal accountability and our next key behavioral characteristic go hand-in-hand, so on to exploring trustworthiness.

Trustworthiness

Behaving ethically while performing your business analysis work effectively generates trust between you and your stakeholders. They trust you to do the right thing at the right time on the project and to keep their interests front and center in your decision-making process. This allows you to engage with your stakeholder's needs and act in their best interests at all times.

Earning the trust of key stakeholders is a linchpin of successful business analysis. It is difficult to develop requirements when folks won't tell you what you need to know to define the best solution to meet their needs. Respect and trust can also be earned by exhibiting effective time management skills. Let's take a quick look at organization and time management and see how it enhances your behavior and how you are perceived as a business analyst.

Organization and Time Management

Experienced business analysts can quickly locate needed information and use work time efficiently. Your ability to effectively manage your time, tasks, and information has an impact on how your team members and other stakeholders perceive you. A disorganized business analyst is not viewed as an effective business analyst. You should set your work priorities, be clear about what needs to be done, and get that work done quickly and well.

Let's move on to the next category in the underlying competencies, adaptability.

Adaptability

A business analyst encounters a number of stakeholders, departments, groups, or concerns daily. It is critical to your success that you are able to adjust readily to different conditions, situations, and changes. This may mean switching your approach, technique, style, or tool currently in use to meet the needs of one or more of your stakeholders.

By nature, we often think others like things or process ideas exactly the same way we do. It is a sign of leadership to understand that sometimes it is best to bend our ways and get out of our comfort zone to make things easier for another to understand or process. Observing what worked, what did not, and what could be done differently next time is a good adaptability trait to own.

Let's move on to the next category in the underlying competencies, *business knowledge*. Your effectiveness as a business analyst is defined not just by what you do but also by what you know.

Business Knowledge

It is impossible to be a liaison between the business and the technology stakeholders on your projects if you have no understanding of the business. Skilled business analysts understand the internal and external business environment surrounding their projects. They use that knowledge to make good decisions and recommendations about what should be done to define and deliver a solution that addresses business needs. The *BABOK® Guide* breaks your business knowledge into these five areas:

- Business acumen
- Industry knowledge
- Organization knowledge
- Solution knowledge
- Methodology knowledge

Let's take a look at each of these areas, starting with assessing your business acumen.

Business Acumen

Effective business analysts are aware of the *business principles* and *business best practices* in their organizations. This is important because you need to incorporate and support these principles and practices in your solutions. Business principles are defined as the characteristics common to organizations of similar purpose and structure, such as human resources, finance, and information technology functions. In contrast, *business practices* or processes vary based on what an organization does and the size of that organization.

Business principles for a large pharmaceutical organization are very different from the principles found at a large retail organization. However, there may be many similarities in how their business practices work for hiring their people and getting those folks paid every two weeks. Business acumen goes beyond just the principles and practices of a specific organization or setting and shows that you comprehend the business needs. Your solution will be based on all your experience, skill, knowledge, and expertise applied to the current situation. This also includes knowledge of your organization's industry. Let's take a quick look at your expected level of industry knowledge.

Industry Knowledge

Do you have good knowledge and understanding of the industry of which your organization is a part? If not, you should. Understanding what is taking place in your industry can have positive impacts on your projects and their solutions. You should be aware of your major competitors, partners, and customer segments. Your knowledge should also encompass your organization's common products and product types.



Real World Scenario

Case Study: Palmer Divide Vineyards

The project team was meeting about the Research Study project effort that was underway at Palmer Divide Vineyards. The effort had been scoped out, and more detailed solution requirements were being developed. The key stakeholders and team members disagreed about whether the project should build a new software application using existing technology or purchase a customizable software package containing the capabilities the organization needed. Everyone was concerned about making sure that the new system accommodated the alcoholic beverage licensing requirements.

Taylor, the IT director, was facilitating a meeting where people could not agree on a course of action. Prior to developing the detailed solution requirements, she felt that a decision needed to be made about the project approach. The requirements that the group would build for a vendor selection effort were significantly different from the more technical requirements they would write if the development work was to be done by the internal IT team.

Luckily, Taylor was prepared for this meeting and brought some additional research data for the group to review. A recent issue of *American Vineyard Magazine* contained a study that evaluated a number of software applications targeting operations for smaller, regional vineyards. Among the evaluation criterion for these packages was the requirement for meeting alcoholic beverage licensing requirements. As the group reviewed this information relative to the new capabilities already agreed upon for the new system, they quickly discovered that purchasing a package would provide them with more capabilities than they were looking for at a higher cost than they had been planning to pay.

Using their own research and the software study, the group was able to put together a business case and impact analysis for the two options for review and selection by the senior management team and the vineyard owners. The industry knowledge was invaluable in preparing their business case without taking the time to reinvent the wheel and research each vendor product in detail.

There are many existing assets to use during your business analysis work, such as industry-focused resource and process documents, standard processes, methodologies, current industry trends, market forces or market drivers, and information pertaining to any regulatory environment where work is done. Possessing some basic knowledge of the industry where you do business adds great context to your project efforts. Industry and business knowledge should be supplemented by organization knowledge. Let's take a look at that subject right now.

Organization Knowledge

Understanding your organization and how things get done enables you to get your own work done and make good decisions within that organization. This includes understanding how your organization generates their profits and how goals are communicated and accomplished. Your organization provides the primary context for your work efforts. This definition of organization includes the entire business architecture: business models, management structure and how that relates to the organizational structure, business unit relationships, and your key project stakeholders.

Organization knowledge includes recognizing the informal lines of communication, authority, who the subject matter experts are, and what internal *politics* are in play relative to your project. It is important that you speak the organizational language, using the right terminology or jargon during your work efforts. Organization, industry, and business knowledge should be supplemented by more technical solution knowledge as well. Let's get just a little bit technical for the next area.

Solution Knowledge

Experienced business analysts are familiar with existing solutions and their capabilities within the organization. This allows them to effectively identify, assess, and implement changes to those solutions. These changes can range from simple alterations to complex replacement projects. When change is requested, your role is to make certain the request is accompanied by a cost-benefit analysis so the change request can be justified by the business benefit that will be gained through its implementation. Your *solution knowledge* often reduces the time you spend developing project requirements or assisting with solution design activities on your project. This can lead to reduced implementation time and/or cost on a project when the change can be proven to offer business value. When the benefit cannot be validated, wasted time and unnecessary cost can be avoided.

Now let's look at one last business knowledge category, *methodology knowledge*.

Methodology Knowledge

While developing your business analysis approach, understanding an organization's standard methodologies sheds light on opportunities, constraints,

dependencies, and context.

Organizations may adopt industry-standard methodologies or create their own to fit their industry, culture, adaptability, and maturity. Methodologies can also shift based on emerging best practices or changes in the organizational leadership. A business analyst who remains flexible and able to integrate new methodologies quickly will be well served by this skill.

That sums up the key knowledge required of effective business analysts. This is a lot of information about your business principles, business practices, industry, methodology, organization, and existing solutions. As previously mentioned, you don't have to be an expert in everything, but a little knowledge in each of these areas can be of great assistance on your projects. Let's move on and look at your knowledge and skills when using tools and technology in your role as a business analyst.

Tools and Technology

Software applications are typically used by business analysts to support communication and collaboration and develop and manage requirements. They store information about model concepts, issues, risks, and requirements, as well as track productivity. Specific applications may include a word processor to document project scope, a requirements management tool for developing detailed user and system requirements, or a cloud service to store all the information. Although using a requirements management tool is not a required skill, the ability to master and apply requirements management, word processing, spreadsheet, and communications tools is considered a desirable trait in experienced business analysts.

You need proficiency in three types of software applications. Office productivity tools are the first. Second, you will need awareness and skills with business analysis tools and technology. Third, you must be familiar with communication tools and technology. [Table 8.1](#) summarizes each of these types.

TABLE 8.1 Tools and technology

Type	Definition	Examples
Office productivity tools and technology	Tools used to capture, organize, dissect, study, manipulate, store, and distribute information	Word processing Spreadsheet Presentation Document repositories Cloud or web-based services (such as document storage) Printers Digital projectors Scanners Copiers
Business analysis tools and technology	Requirements development tools used to develop, validate, and implement formal models, and to build/manage requirements documentation and	Diagramming tools Modelling tools Requirements management and workflow tools Change control Traceability Configuration management Risk management

	artifacts	
Communication tools and technology	Tools used to collaborate in the planning and execution of tasks. Allows collaboration whether co-located or working with virtual team members	Voice communications Instant messaging Online chat Email Blogging Video conferencing Electronic white boarding Wikis Electronic calendars Online brainstorming tools Electronic voting and decision-making tools Document share tools

Diagramming tools are viewed as low-cost options that support the rapid drawing and documentation of graphical models by providing a set of templates for a given notation method. In contrast, modelling tools tend to be more of a medium- to high-cost tool. They convert graphical models into an executable form either by using a proprietary engine or by generating actual application code.

While proficiency with tools and technology is appreciated on your projects, proficiency in many forms of communication is even more crucial to your project's success. Let's look at the communication skills that effective business analysts bring to their projects.

Communication Skills

A major reason for project failures is poor communication. Business analysts must have excellent *communication skills* in order to develop project requirements that correctly and completely state what the new solution will do for its users and the business. Communication has several dimensions that are addressed by the *BABOK® Guide*.

- Verbal communication
- Nonverbal communication
- Written communication
- Listening

Let's dig a little deeper into each of these areas, starting with your proficiency in communicating verbally.

Verbal Communication

Experienced business analysts are experts at conveying facts, concepts, opinions, and ideas in understandable ways. One way to do this is by verbal communications. This means that you transfer ideas or information verbally to your target audience. This exchange of information between a sender and receiver involves more than just speaking the words. Your words are accompanied by emotional and other nonverbal cues that can add positive reinforcement to what is being said.

Lines of Communication

Communication becomes more complex as the number of people involved increases. Network models are used to explain the complexity of communications. They consist of nodes with lines between the nodes indicating communication. You need to be able to calculate the lines of communication in a network as part of your preparations for taking your certification exam.

The calculation for the number of lines of communication in a network is as follows:

$$(n \times (n - 1))/2$$

where n = the number of people or nodes in the network. So, for a project network containing five stakeholders, the number of lines of communication is as follows:

$$(5 \times 4)/2 = 20/2 = 10$$

[Figure 8.1](#) graphically depicts these ten lines of communication between the five nodes in the network.

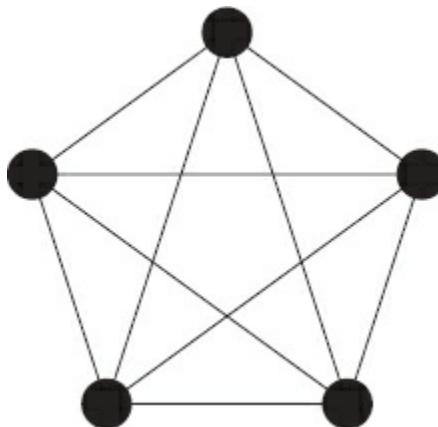


FIGURE 8.1 Lines of communication

Good communicators are able to facilitate meetings and deliver presentations and briefings. Nonverbal communication is also used when you are sharing your knowledge and communicating with others about your project. Let's move on and talk a little bit about the nonverbal communication skills found in effective business analysts.

Written Communication

As a business analyst, you will find yourself spending much time documenting and recording your elicitation results, project requirements, and other relevant information. This work takes place across the project life cycle. If you are not a good technical and business writer, you will need to master those skills quickly. You must be able to write effectively for different contexts and audiences on

your projects. The *BABOK® Guide* recommends that effective business analysts possess the following written communications attributes:

- Broad vocabulary
- Strong grasp of grammar and style
- Understanding of idioms and terms

Exam Spotlight

Be sure you are comfortable explaining the basics of information exchange using the sender-receiver model. This model governs both written and oral communications on your projects. Senders package or encode messages that are sent to the receivers. The receivers then unpack or decode the messages. Transmitting gets information from the sender to the receiver for both spoken and written forms of communication. Decoding of the received message is performed by the receiver. This is where the receiver converts the message to a form that they understand.

Listening

Effective listeners, sometimes referred to as *active listeners*, stay focused on the speaker and are not distracted from what is being said. Your ability to maintain your focus on the speaker allows you to understand, interpret, and evaluate what is being said in a calm, systematic fashion. Often, active listeners maintain eye contact with the speaker and then paraphrase statements back to the speaker to ensure that the listener understands what is being said. This assures that both parties have the same understanding of the communicated message.

Your communication skills are closely linked to your interaction skills. Effective business analysts play well with others. Let's move on and explore those interaction skills in greater detail.

Interaction Skills

Strong business analysts tend to be team players. In large part, this is because of their ability to interact and work well with other members of the team. The team is often composed of many different types of people from different organizational areas and personalities. Organizational areas may include executive level, client side, sponsors, colleagues, developers, vendors, users, and subject matter experts. Personality differences may include learning and communication styles and corporate knowledge. Leadership and facilitation skills play a key part in defining and agreeing to a solution to a business problem or need. The *BABOK® Guide* breaks the necessary *interaction skills* into these components:

- Facilitation

- Leadership and influencing
- Teamwork
- Negotiation and conflict resolution
- Teaching

Let's look closer at each of these components, starting with your facilitation skills.

Facilitation

Strong facilitation skills serve multiple purposes for business analysts. You may find yourself facilitating many different types of interactions between stakeholders, such as resolving disagreements regarding the priority and nature of requirements during requirements development. You will moderate any number of group discussions and meetings, making sure that all participants get to share their views and opinions on the topics being discussed. Good facilitators must ensure that there is recognition and appreciation of differing viewpoints across the project life cycle.

Effective facilitation on your projects must be accompanied by leadership and influencing skills. Let's look at this next component of interaction skills required for a good business analyst.

Leadership and Influencing

Managing is primarily concerned with consistently producing the key results expected by your stakeholders. Good leaders and good managers are not necessarily the same thing. Leadership is not quite so tangible. It establishes the vision and direction to a desired future state and enables people to work together to get to that future state. Good leaders motivate and align people to work toward a vision. They communicate that vision through their own words and deeds.

You will fill many formal and informal leadership roles as a business analyst. You are responsible for developing requirements and getting your project stakeholders on board with the vision for a desired future state—the new solution and its capabilities. You are an agent of change, since your new solution will change the way people do their jobs.

Your leadership skills are directly related to your ability to influence people in order to get things done. You must have a solid understanding of the formal and informal organizational structure where you are working. You must be able to apply the mechanics of *power* and *politics* to get things done, even when you have no formal power in a given situation.

Power is the potential ability to influence behavior and change the course of events. Power allows you to overcome resistance and get people to do what they would not do otherwise. In comparison, politics is all about getting collective action from people who may have different interests. Sometimes, you will find yourself using conflict and disorder creatively in order to get things

accomplished in your organization.

There are five levels of power. Of these levels, punishment power is the least desirable technique for obvious reasons. Although the *BABOK® Guide* does not discuss the levels of power directly, they have been known to show up in certification exam questions. Here they are for your review as part of your study preparations:

Reward Power Reward power allows you to provide people with incentives or bonuses in order to get things done. Rewards don't have to be money. They can be comp time for working over a weekend or movie tickets for a team member and their family.

Punishment Power Punishment power is not a recommended type of power for collaborative team environments. Punishment power involves threatening people with negative consequences (penalties) if they do not do as you say.

Expert Power Expert power allows you to influence others based on your knowledge or abilities. In addition to your role as a business analyst, you might also be a specialist or subject matter expert (SME) in a particular industry area.

Legitimate Power Legitimate power is associated with the formal job position that you occupy and should be exercised carefully. You can always demand that things be done based on your power of position. However, it is better to collaborate with your team members and reach consensus about how everyone will perform their work.

Referent Power Referent power is a positive source of power for you. It is given to you by your subordinates based on their respect and regard for you. This earned power can be used to influence and motivate your team members to perform at a high level.

In addition to your leadership and influencing skills, you must be able to work well in a team environment. Let's talk a bit more about your essential teamwork skills.

Teamwork

Business analysts must work closely with other project team members to effectively define and implement new solutions. You have a role in creating the team environment, as well as contributing to that environment where everyone shares the ownership of the team goals for the project. Experienced business analysts are quite good at building effective working relationships with others in order to enhance the quality of team communications and reduce conflicts.

Modelling Team Development

The *Tuckman model of team development* breaks team development into four or five stages. Each stage has distinct characteristics. Be sure you are familiar with this model and its stages for your certification exam.

Forming Forming is the earliest stage of team development where the team members meet and are introduced to one another and to the project. Team members working together in this phase tend to exhibit reserved and more formal behavior to one another.

Storming This stage is characterized by confrontations as team members vie for position and control within the group. Everyone is jockeying for status within the group, and things can be a bit chaotic.

Norming This is the stage where team members have adjusted to one another. They can now focus on project issues and objectives. There is cooperation and collaboration between folks on the team, and work is getting done.

Performing In this stage of team development, the planets are in alignment, and the team members work effectively and productively together. The group shares a high level of trust and achievement.

Adjourning or Mourning Some sources added a fifth stage of this model where the team is broken apart as work is completed and folks move on to their next project effort.

Another key aspect of teamwork is the ability to motivate yourself and other members of the team. You will often find yourself using your motivation skills to energize your fellow team members and project stakeholders in order to achieve a high level of performance and to overcome any barriers to change.

There are several common motivational theories that you, as a business analyst, might bring into play. The *BABOK® Guide* does not address them in detail, but they are known to occur occasionally in a question or two on your certification exam. They are listed here for your review:

Achievement Theory People are motivated by a need for achievement, power, and affiliation. Teams populated by achievement-motivated team members are a dream come true. Many folks work hard and motivate themselves because it is important to them that they do a good job. Other folks may be motivated by more tangible things, such as compensation, bonuses, and possibilities of advancement.

Frederic Herzberg's Motivational-Hygiene Theory Herzberg's theory of motivation is fascinating. There are two sides to the theory. The first side contains the hygiene factors. Hygiene factors are things that prevent people from becoming dissatisfied (such as pay, benefits, work conditions, and working relationships). The funny thing about these factors is that in and of themselves they don't motivate people. The second side contains the motivation factors. These factors lead to work satisfaction and motivation and are quite different from the hygiene factors. They include opportunities for advancement, learning, challenges, and the work itself.

Expectancy Theory Expectancy theory is a little bit like the carrot and the stick—well, at least the carrot portion of the situation. The basis of this theory is that expecting a positive outcome creates motivation in people. This is because

the expectancy and the likelihood of a reward are linked to people's behavior. The rewards don't have to be tangible things, such as money. They can be less tangible things, such as recognition for a job well done.

Theory X and Theory Y This motivation theory has been around for quite some time. Theory X tells us that people are inherently lazy and need to be threatened in order to be motivated. In contrast, Theory Y states that people seek out responsibility and respond to proper expectations in the workplace. Theory Y is more commonly found in today's workplace, especially among knowledge workers.

Contingency Theory Contingency theory puts forth that the effectiveness of a leader is dependent on the characteristics of that leader, the situation they find themselves in, and the group in which they are a part. There is no one ideal leader, so your management style and your methods to motivate your team should be appropriate to the situation that is at hand. This is a more situational approach to motivating people.

Negotiation and Conflict Resolution

Negotiation is often a facet of business analysis work. People don't always agree on things, and that needs to be sorted out. Effective negotiators are able to identify the underlying interests of involved parties, distinguish those interests from their stated positions, and ultimately identify solutions that satisfy the underlying interests while still keeping the business need and objectives in mind.

Working in teams also requires you to manage and address conflict. The basic types of conflict are emotional and cognitive. Emotional conflict stems from personal interactions, while cognitive conflicts are based on disagreements on matters of substantive value or impact on the project or organization. Resolution of cognitive conflict requires the team to focus on examining the premises, assumptions, observations, and expectations of the team members. Working through such problems can have the beneficial effect of strengthening the foundation of the analysis and the solution. Many conflict situations encompass both emotional and cognitive elements.



Real World Scenario

Increasing Your Space

Russ, a project manager, was walking down the office hallway one day when he noticed something odd. One of the cube walls situated between the cubes of his project's top two systems architects had come loose from the floor. The wall had moved over into one person's cube and looked as though it would require a bit of repair. It was the end of a very busy day, so Russ made a mental note to follow up about the mysterious moving cube wall the next morning.

The next morning, Russ was walking by with his coffee, and he noticed that the traveling cube wall had moved yet again. Today, the wall was occupying space in the other team member's cube. Shaking his head, Russ decided to do a little investigating right after the morning project status meeting.

Russ didn't have to wait very long after the meeting to discover what was happening with the moving cube wall. As he exited the meeting and turned down the hallway, he was treated to a full exhibition of how the cube wall was moving back and forth. The systems architect in the space-limited cube was sitting on the floor, pushing the cube wall back into the other team member's cube with his feet.

"How interesting," Russ thought. "I wonder what happens next."

What happened over the next few days was a conflict in motion. Each team member took turns shoving the cube wall into his teammate's space. After observing the phenomenon, Russ decided to intervene. Calling both team members into his office, he asked them what was up with the cube wall.

"He unbolted it and started this," complained one team member. "It was right after the project approach meeting where my approach to solution technology and infrastructure was selected as the solution approach for the project."

"My approach was the better one," replied the other team member. "Yours was chosen because you have worked here longer, not because it had any technical merit."

They continued to bicker for a short time, until Russ interrupted them.

"Since you two are obviously in need of some togetherness," Russ said, "Let me tell you what we are going to do. The moving cube wall will be removed, and the two of you can share the office space for a time to see if you can work out your differences."

And that's exactly what happened. Russ, knowing the men's fast friendship, confronted the problem and offered up a compromise solution where each team member gave up their private space for a time. The good news is that after a few days, the team members' differences were resolved, and they asked Russ to put their cubes back the way they were. The missing cube wall was reinstalled (and bolted down with a few extra bolts) the following week.

Although it was risky to exercise a mild form of punishment power by combining the cubes, Russ used the situation as an opportunity to stress that the team members needed to work together. The underlying problem was a battle of technical egos, and moving the wall was a convenient way for each team member to be (at least temporarily) the king of the hill with the larger cube. The two team members involved were actually good friends. Moving the cube wall had started out as a joke and somehow escalated into a larger conflict that was beginning to polarize the remaining team members by implying that they should take sides.

Luckily, there was more than enough technical work to go around on this project. The friendship was stronger than the conflict between the two

architects. Everyone discovered that the project results and the general work environment were much better when these two systems architects were pulling in tandem instead of pulling against one another. Russ took a calculated risk with this approach, and he solved his problem.

There are a number of conflict resolution techniques you may choose to apply in a given situation. Be sure you are familiar with them as you may see them mentioned on your certification exam even though they are not specifically outlined in the *BABOK® Guide*. [Table 8.2](#) summarizes these techniques and their outcomes for you to use in your studies.

TABLE 8.2 Summary of conflict resolution techniques

Technique	Outcome	Description
Forcing	Win–Lose	People often force others in order to resolve conflicts. They can do this if they have power and demand a particular outcome.
Smoothing	Lose–Lose	This technique results in a temporary reduction in the perceived severity of a conflict but provides no permanent solution.
Compromise	Lose–Lose	Each party reluctantly complies and gives up something to reach a solution. This can lead to a permanent solution if commitments are kept even, although all parties lose something in this situation.
Confrontation	Win–Win	This addresses the conflict using problem-solving methods where an analysis of facts leads to the best solution that becomes a permanent solution.
Withdrawal	Lose–Lose	This occurs when one party refuses to even discuss the conflict. This approach never addresses or resolves the conflict.

You will often find yourself resolving interpersonal conflicts by using your effective interpersonal negotiation skills. Learning to manage conflict is integral to a high-performance team. It is important to recognize that not all conflicts can be resolved. Effective business analysts assess and establish their own conflict management approach and acquire skills in conflict resolution techniques and conflict modes.

Confronting a problem is considered to be the best method for conflict resolution with the highest likelihood of permanent solution. This involves laying the problem and any related information out on the table, getting the involved parties to discuss what is going on, and reaching a resolution.

Teaching

Teaching is closely related to communicating with your project stakeholders. You may find yourself operating in a teaching mode as you communicate project issues and requirements to your stakeholders, making sure they are understood

and agreed upon. Many times, business analysts find themselves facilitating the learning experiences of their project stakeholders, teaching them about the new capabilities, describing a new solution, or leading a meeting to determine what a set of requirements might be.

Effective teachers are aware of the different learning styles found in their students and alter their teaching approach to accommodate those preferences. There is also a practice and feedback loop in teaching, very much like the sender-receiver model of effective communications. It isn't enough to deliver your information to the stakeholders. For example, you might find yourself teaching stakeholders about a new graphical modelling technique. Whenever you are teaching, you must provide your audience the opportunity to practice and then confirm that your audience has learned what was needed and can apply what they have learned.

Learners receive and process information differently depending upon the learner, the content, and the situation. As discussed earlier in this chapter, there are three learning styles: visual (seeing or viewing), auditory (hearing and verbalizing), and kinesthetic (doing). Best practice for training material design is to encode your content in a way that reflects at least two learning styles.

That wraps up your review of the underlying competencies required for an effective business analyst. This is certainly a significant list of knowledge and skills for any business analyst to master. Remember not to try to excel in all areas at once. Work to your strengths and slowly improve your weak areas over time. This is one situation where practice certainly strives to create perfection.

How This Applies to Your Projects

Professional detachment is another essential skill for business analysts. Your ability to remain in control of yourself will be tested regularly when people become angry or frustrated when the way things are done changes, when people don't get their way, or when your fellow team members and stakeholders have straightforward personality clashes. Being self-aware and regulating your own emotional responses in such situations will serve you well.

Mastering your professional detachment skills provides you with a new attitude toward what happens on your projects regardless of the emotional intensity. Professional detachment is about looking at the events from a distance without being too emotionally involved or taking what happens on your projects personally. Professional detachment must be nurtured to prevent embarrassment and steer you away from making uncalculated actions and reactions. People usually regret being provoked into instant emotional reactions because those reactions must be followed by damage control. Analysts prefer to handle conflict professionally and avoid the need for the damage control.

Tolerance for others and their verbal or physical actions is the key to your own professionalism. Observe yourself and learn what your triggers are. Discover your preferred approaches to managing conflicts. Learn to be a stronger, more capable facilitator. Practice your presentation skills and remember how your mother always said to count to ten before you say anything when you are angry or irritated.



Real World Scenario

Phil's Checklist: Dealing with the People on Your Projects

Phil, a fellow business analyst, offers up the following list of techniques that he practices faithfully and successfully. He recently presented it at a team meeting kicking off the requirements development effort for a major IT project, and everyone found his practical advice to be quite useful. You will probably like Phil's list, too.

Compartmentalize. Focus on one task at a time. Don't let everything pile on you all at once. You don't want your mind to be thinking about what you just did or what you're going to do, only on what's in front of you.

Be proactive. Focus on what needs to be done and then do it. Action creates positive energy; inactivity leads to frustration. If you don't know what to do, figure it out. And don't forget that you have a business analysis team to help you figure things out.

Have real conversations. When you talk to your clients or your team, focus on what needs to be done, not on emotions. Don't buy into your

stakeholder's emotions. Rather, lead them to focus on what can be done to solve the problem or resolve an issue.

Focus on what to do next. There's nothing you can do about the past except learn from it. Lessons learned are great when applied to future situations. You never stop learning lessons when dealing with people on your projects. And remember, hindsight is always 20/20.

Build a Plan B. To become detached from the outcome, have a contingency plan or a Plan B for certain situations on your projects. Then, you don't have to worry so much about what is happening now, because you aren't as dependent on the outcome. You have a contingency plan to implement if things go astray.

It is about the business, not about you. Do not internalize the behavior and emotions of your stakeholders or business analysis team. Acknowledge their feelings, let them know that you understand, and then use your professional detachment to help them become more detached themselves so they can get beyond their emotions and make rational decisions.

Objectively assess your performance. Resist the impulse to get down on yourself. At least half of your job is looking for desired future states and new solutions. No one's crystal ball ever operates at 100 percent.

Summary

The skills and knowledge found in the “Underlying Competencies” section form the basis for your work activities and people interactions on your projects. It is difficult to work on a project without possessing a core set of skills, knowledge, and capabilities that enhance how you perform your tasks and interact with the people around you on a daily basis.

The underlying competencies enable you to do your work effectively in a collaborative business environment. The skills, knowledge, and behaviors that you bring to your projects are a significant factor in your ultimate success at defining the right requirements and deploying a new solution that meets everyone’s needs and expectations.

The *BABOK® Guide* recommends that you apply a subset of the underlying competencies to every business analysis task and technique that gets done on your projects. You don’t need to be an expert in every skill or possess knowledge in every aspect of the business, but most experienced business analysts have a core set of skills and behaviors that serve them well as they get the job done.

Exam Essentials

Be able to list and describe the high-level skills, knowledge, and behaviors found in the “Underlying Competencies” section. You will see questions about high-level skills, knowledge, and behaviors found in the “Underlying Competencies” section throughout your certification exam. These questions may appear in each of the six knowledge areas.

You should memorize the key competencies and make sure you understand what they are all about. The six areas are:

- Analytical thinking and problem-solving skills
- Behavioral characteristics
- Business knowledge
- Tools and technology
- Interaction skills
- Communication skills

Be able to apply the additional skills and knowledge found in this chapter that are not specifically contained in the *BABOK® Guide*. Several topics contained in this chapter provide additional details to the contents of the *BABOK® Guide*. These topics are known to show up in certification exam questions, and they are worth learning as part of your exam preparation activities.

- Lines of communication
- Tuckman model of team development
- Conflict-resolution techniques
- Motivational theories
- The five levels of power

Be able to discuss the three types of learning styles. As a teacher, you will typically encounter three types of learning styles. They include visual (learning best by seeing something done), auditory (learning best by hearing), and kinesthetic or tactile (learning best by doing themselves).

Be able to compare business principles and business practices. Business principles are defined as the characteristics common to organizations of similar purpose and structure, such as human resources, finance, and information technology functions. Business practices or processes vary based on what an organization does and the size of that organization.

Be able to identify office productivity, business analysis, and communication tools and technology. Office productivity tools are used to store, capture, dissect, manipulate, organize, and distribute information. Business analysis applications consist of more sophisticated requirements development tools that are used to develop, validate, and implement formal

models, as well as build/manage requirements documentation. Communication tools and technology help connect team members near and far with shared applications or easily accessible communication options.

Be able to break down each of the high-level areas of underlying competencies into their pieces and parts. Your exam questions on the underlying competencies may drill down into the more detailed pieces and parts of each competency. Make sure you are familiar with each of them.

Analytical thinking and problem-solving skills consist of creative thinking, decision making, learning, problem solving, and systems thinking.

Behavioral characteristics include ethics, personal accountability, trustworthiness, organization and time management, and adaptability.

Business knowledge consists of business acumen, industry knowledge, organization knowledge, solution knowledge, and methodology knowledge.

Tools and technology is composed of office productivity, business analysis, and communication tools and technology.

Interaction skills consist of facilitation, leadership and influencing, teamwork, negotiation and conflict resolution, and teaching.

Communication skills are composed of verbal communication, nonverbal communication, written communication, and listening.

Key Terms

You have just finished stepping through the contents of the “Underlying Competencies” section from the *BABOK® Guide*. The skills and information in this chapter are used by the tasks in the six knowledge areas. They are the foundation that allows you to do your job wisely and well.

Use the skills and information found in this chapter as the basis for evaluating and improving your underlying competencies in the business analysis realm. You will need to know this section in order to be successful on the CBAP® or CCBA™ exams. Although there are no specific questions on this specific section, questions about the underlying competencies can be found throughout your exam as part of the six task- and technique-focused knowledge areas. The underlying competencies include:

- Analytical thinking and problem solving
- Behavioral characteristics
- Business knowledge
- Interaction skills
- Communication skills

A number of new key words in Chapter 8 are related to the underlying competencies of effective business analysts. Here is a list of some of the key terms that you encountered in this chapter:

- alternatives identification
- auditory learning style
- business best practices
- business practices
- business principles
- decision making
- kinesthetic (tactile) learning style
- methodology knowledge
- organization knowledge
- politics
- power
- problem definition
- solution knowledge
- sunk cost fallacy
- systems thinking

Tuckman model
underlying competencies
visual learning style

Review Questions

1. Business _____ are those characteristics that are common to all organizations with a similar purpose and structure, whether or not they are in the same industry.
 - A. Processes
 - B. Principles
 - C. Practices
 - D. Rules
2. You have strong political ties with your stakeholders from previous work in the organization, enabling you to get things done. Which underlying competency will these previous relationships enhance most for your current assignment?
 - A. Facilitation
 - B. Negotiation
 - C. Leadership
 - D. Influencing
3. You understand the existing business models, structure, business unit relationships, and people. This is an example of what type of knowledge?
 - A. Organization
 - B. Industry
 - C. Business
 - D. Strategic
4. You are deciding between three solution options early in the project life cycle. Your stakeholders have trouble visualizing what these solutions contain without graphical models to support the discussions. What type of teaching method would enhance their learning?
 - A. Kinesthetic
 - B. Auditory
 - C. Tactile
 - D. Visual
5. What four stages of team development (in the order they are experienced) would you expect your new business analysis team to go through?
 - A. Collecting, understanding, realization, working
 - B. Norming, storming, forming, performing
 - C. Forming, storming, norming, performing

- D. Forming, norming, storming, performing
6. Confrontation as a method of conflict resolution is best for achieving a solution.
- A. Win-Win
- B. Win-Lose
- C. Lose-lose
- D. Lose-Win
7. The process of gaining knowledge or skills is also known as:
- A. Learning
- B. Synthesis
- C. Experience
- D. Feedback
8. You are able to effectively manage your time by clearly defining goals and expectations and prioritizing your work efforts. These abilities illustrate your skills in:
- A. Information retrieval
- B. Politics and power
- C. Time management
- D. Analytical thinking
9. You are a business analyst measuring alternatives against objectives and identifying trade-offs to determine which possible solution is best. You are most likely engaged in what activity?
- A. Problem solving
- B. Systems thinking
- C. Creative thinking
- D. Decision making
10. Your team needs a low-cost tool that supports rapid drawing and documentation of models. What type of tool should they choose?
- A. Requirements tool
- B. Modelling tool
- C. Diagramming tool
- D. Presentation tool
11. Knowledge management and collaboration tools that may be used to capture and distribute knowledge throughout an organization include:
- A. Discussion forums, word processors, and spreadsheets
- B. Document repositories, wikis, and discussion forums

- C. Presentation software, wikis, and other web-based tools
 - D. Email, instant messaging, and document repositories
2. You are focusing the business analysis team on examining the premises, assumptions, observations, and expectations of its team members. What type of conflicts are you most likely addressing?
- A. Interaction
 - B. Emotional
 - C. Cognitive
 - D. External
3. You are developing a vision of a desired future state toward which people can be motivated to work. After it is developed, you will encourage people to work toward that future state. What business analysis competency are you exhibiting?
- A. Influencing
 - B. Leadership
 - C. Interaction
 - D. Trustworthiness
4. The business analysis team has been working hard to meet tight deadlines on their project. The project manager offers them a bonus and some time off if they can meet their deadlines. Which motivational theory best describes what the project manager just did?
- A. Expectancy theory
 - B. Herzberg's hygiene theory
 - C. Achievement theory
 - D. Maslow's hierarchy of needs
5. Which of the following capabilities is not part of your analytical thinking and problem-solving skills?
- A. Decision making
 - B. Teaching
 - C. Systems thinking
 - D. Learning
6. Effective problem solving consists of what three elements?
- A. Alternative identification, facilitated discussion, and decision making
 - B. Problem definition, creative thinking, and decision making
 - C. Creative thinking, systems thinking, and problem definition
 - D. Problem definition, alternatives identification, and decision making

17. During an elicitation interview, you find yourself paraphrasing statements to the speaker to reinforce that you understand what is being said. What skill are you applying?
- Facilitation
 - Influencing
 - Active listening
 - Learning
8. Your boss tells you that you should motivate your people by threatening them with additional weekend work if project deadlines are not met. What motivation theory is being suggested to you?
- Achievement
 - Theory X
 - Theory Y
 - Expectancy
9. What method of conflict resolution offers the highest likelihood of reaching a permanent solution?
- Confrontation
 - Smoothing
 - Compromise
 - Withdrawal
10. The business analysis team members are jockeying for status within the group. This is a symptom found in which stage of team development according to the Tuckman model?
- Performing
 - Forming
 - Storming
 - Norming

Chapter 9

Five Perspectives on Business Analysis

CBAP®/CCBA™ EXAM TOPICS COVERED IN THIS CHAPTER:

- ✓ **Describe the five perspectives on business analysis.**
- ✓ **Elaborate the approaches used with each perspective.**
- ✓ **Define the techniques recommended for each perspective.**
- ✓ **Explore the knowledge area impacts of each perspective.**
- ✓ **Recognize the underlying business analysis competencies for each perspective**



This chapter steps through the five high-level perspectives on business analysis from the *BABOK® Guide*. It takes a look at what it means to be a business analyst and how to successfully perform business analysis work on different types of projects and from differing points of view. This content aligns with the content in Chapter 11 of the *BABOK® Guide*.

Remember, the set of generally accepted best practices defined by the *BABOK® Guide* provides a business analysis framework defining areas of knowledge, associated activities and tasks, and the skills required to perform them. The scope of this standard covers pre-project activities, the full project life cycle, and the final product's operational life.

Business analysts find themselves working on many types of projects. The *BABOK® Guide* defines five common points of view or perspectives for business analysis work. Your initiatives may have one or more of these perspectives in play. For example, you may be performing business analysis work on a project that has an information technology component being developed using an agile approach.

Exam Spotlight

At the time of publication, it was not decided if or how this content would appear on the exam.

The five perspectives on business analysis equate to the common types of projects business analysts find themselves working on in their organizations. Recognizing the perspective or perspectives you are working in will help you focus on the right business analysis tasks and techniques. The five common perspectives are:

- Agile
- Business Intelligence
- Information Technology (IT)
- Business Architecture
- Business Process Management

Each perspective impacts how you use the knowledge area tasks and techniques. Remember, different types of initiatives facilitate different types of changes to the business. Make sure you have the right people, the right methods, and the right approach to define what has to be done. Let's take a look at each perspective in greater detail.

The Agile Perspective

Agile initiatives are characterized by constant change. “Flexible and adaptable” is the battle cry for business analysts involved in agile initiatives. They find themselves constantly reassessing, adapting, and adjusting their business analysis efforts in order to respond to a rapid rate of change.



According to the *BABOK® Guide*, “agile business analysis ensures that information is available to the agile team at the right level of detail at the right time.” Basically, you are performing “just-in-time” business analysis work.

Being a business analyst on an agile team requires constant communication, facilitation, and negotiation. Business analysts help the agile team define the business need they are trying to satisfy and decide the right thing to do to satisfy that business need.

Change Scope

When working on a proposed change using agile methods, business analysts work closely with the business sponsor of the initiative to define how the proposed product or outcome aligns with the organization’s objectives. Requirements are developed through ongoing exploration and analysis of business needs over time.

Once the high-level product is defined, the business analyst works with key stakeholders to decompose that “big picture” into a list of prioritized work items. Agile teams deliver small, incremental changes and commit to prioritize work items for a single *iteration* at a time. Iteration in an agile environment is an agreed-upon period of work time.



Most agile approaches are iterative in nature. However, not all iterative approaches are agile. There are agile approaches that are not iterative, such as the kanban method. Kanban is a “just-in-time” approach to getting work completed by matching the amount of work in progress to the team’s work capacity. A kanban team is focused only on the work that is actively in progress. Once the team completes a work item, they move to the next work item off the top of the backlog list. As long as the most important work items are at the top of the backlog list, the kanban team is delivering maximum value to the business.

There are five elements to consider as part of the agile perspective and the scope of a proposed change. Let's step through each of those elements now in greater detail:

Breadth of Change The most common use of agile methods is in software development projects, although agile is being applied to process engineering and business improvement projects as well. Agile initiatives may focus on a single area of the business or span multiple areas across the organization. Adopting agile principles requires an agile mind-set, a focus on continuous improvement, ongoing changes in behavior, and continual progress.

Depth of Change Agile initiatives are often part of a larger program or project. As mentioned previously, the agile work stream frequently focuses on software development. Agile methods can be successfully applied in initiatives where there is a clear commitment from the customer and engagement by the SMEs. They also work well when the business needs are complex, complicated, changing, unknown, and still emerging over time.

Value and Solutions Delivered Agile approaches focus on delivering value early in a project. Ongoing feedback and review of the work performed involves and engages stakeholders from the beginning of the effort. The business analyst must build rapport and trust between the agile team and the stakeholders to facilitate this collaboration and communication.

Delivery Approach Agile approaches focus on interacting with people, transparent communications, and ongoing delivery of value. There are many agile approaches that a business analyst can use. I recommend using *The Agile Extension of the BABOK® Guide* to learn about the many agile approaches to business analysis in more detail.

Major Assumptions There are a number of assumptions that work well in agile projects. Here is a quick list for you:

- Changing requirements are welcome at any time.
- A business problem can be reduced to a set of needs that can be met.
- Customers and SMEs are engaged and empowered.
- Team members do not change and can perform multiple roles within the team if required.
- Multidisciplinary and co-located teams are preferred.
- Team members have the continuous improvement mind-set, are empowered, and can organize themselves.

Business Analysis Scope

Now let's take a look at the specific elements of business analysis work as part of the agile perspective. There are four elements to consider. We will step through each of the four elements now in greater detail.

Change Sponsor The *BABOK® Guide* stresses the importance of a project sponsor who is actively involved with the project. The sponsor should be

familiar with the agile mind-set and approach to getting work done. The sponsor also should be able to deal with constant stakeholder feedback and trade-off decision making. Make sure your agile sponsor accepts the use of adaptive planning versus predictive planning and supports using a fixed period of time for a work cycle.

Change Targets and Agents Agile projects or initiatives require intensive collaboration, frequent communication, and incremental delivery of value to be successful. The typical agile project team is small in size. There are a number of roles that need to be addressed as part of an agile project. [Table 9.1](#) describes the agile-specific roles and responsibilities.

TABLE 9.1 Agile roles and responsibilities

Role	Responsibilities
Agile team leader	Facilitator of the team's work who delegates planning, scheduling, and prioritization activities to the team
Customer representative or product owner	Ensures the change addresses the requirements for which it has been mandated
Team members	Specialists or domain experts performing the work or providing support to the team as needed
External stakeholders	Parties interested in the outcome of the project who play a supporting role

Business Analyst Position Business analysts on agile teams may perform additional roles on the team in addition to business analysis work. Business analysts may work on an agile team full- or part-time, be a customer representative or product owner, or be several team members performing the business analysis work.

Business Analysis Outcomes Business analysts on agile projects facilitate communication and collaboration between the team and the stakeholders. They make sure the project's vision and direction align with the business need and the organization's goals. Business analysts help define strategic project completion criteria as well as acceptance criteria. They also make sure that the “just-in-time” and “just-enough” documentation for the project is complete.

Approaches and Techniques

There are many agile approaches to projects and initiatives. Business analysis is a component in all of the approaches, although few of the approaches formally define the business analyst role. [Table 9.2](#) summarizes the agile approaches.

TABLE 9.2 Summaries of agile approaches

Approach	Description
Crystal Clear	Methodology defined by hardness and color. Hardness is business criticality or potential for causing harm. Color is

	heaviness of the project such as number of people and risk elements.
Disciplined Agile Delivery (DAD)	Decision process framework using ideas from many agile approaches. Customized by the team to support a project from initiation through delivery
Dynamic Systems Development Method (DSDM)	Framework fixing cost, time, and quality at the beginning with contingency managed by varying the features to be delivered
Evolutionary Project Management (Evo)	Develops and delivers a system incrementally by quantifying value for multiple stakeholders and planning increments based on delivery of that measured value
Extreme Programming (XP)	Takes software engineering to the extreme by focusing on technical development processes. Uses pair programming, test-driven development, and other craftsmanship approaches
Feature Driven Development (FDD)	Focuses on client-driven functionality or features to develop working software
Kanban	Performs work as a continuous flow of activities by working on one item at a time. Work begins on a new item when it is required to maintain flow downstream and after the previous item is complete
Scaled Agile Framework® (SAFe®)	Implements agile practices at the enterprise level by highlighting individual roles, teams, activities, and artifacts
Scrum	Uses empirical process control to perform work in a series of fixed length iterations, or sprints. Each sprint produced working software that could be delivered to the customer.

There are a number of techniques used in agile projects. Some of the techniques are found in the *BABOK® Guide*, while others are agile-specific and can be found in the *Agile Extension to the BABOK® Guide*. [Table 9.3](#) summarizes how each technique can be used in an agile project environment.

TABLE 9.3 Agile business analysis techniques

Approach	Description
Behavior Driven Development (BDD)	Enhancing communication between stakeholders and team members by expressing product needs as concrete examples
Kano Analysis	Understanding which product features will help drive

	customer satisfaction
Lightweight Documentation	Producing documentation that fulfills an impending need and does not create unnecessary overhead
MoSCoW Prioritization	Used to prioritize stories in incremental and iterative approaches. MoSCoW stands for must have, should have, could have, and won't have.
Personas	Fictional characters or archetypes showing how typical users interact with a product
Planning Workshop	Collaborative workshop allowing an agile team to determine what value can be delivered over a time period
Purpose Alignment Model	Used to assess ideas in the context of the customer and value
Real Options	Helps people know <i>when</i> to make decisions rather than how to make those decisions
Relative Estimation	Team estimation using story points (representing relative complexity of a user story) or ideal days (representing the amount of total effort a story would take to develop)
Retrospectives	Held after each agile iteration to focus on continuous improvement of the teamwork process. Similar to the Lesson Learned technique
Story Decomposition	Represents product requirements by deriving them from business objectives and defining those requirements at an appropriate level of detail
Story Mapping	Visual and physical view of the sequence of activities supported by a solution
Storyboarding	Visual and textual representation of the sequence of activities showing user interaction with a system or business
Value Stream Mapping	Complete, fact-based, time-series representation of the activity stream required to deliver a product/service to the customer

Underlying Competencies

Agile business analysts are experts at communication and collaboration with the project team and the stakeholders. According to the *BABOK® Guide*, the required competencies for an agile business analyst include the following:

- Communication and collaboration
- Patience and tolerance
- Flexibility and adaptability
- Ability to handle change
- Ability to recognize business value

- Continuous improvement

Knowledge Area Impacts

Knowledge area tasks and techniques in the *BABOK® Guide* can be modified for agile projects before being applied as part of your business analysis work.

Additional agile-specific techniques may also be applied to the tasks and their elements within a knowledge area in addition to or in place of the techniques used on more traditional projects. As a reminder, these are the knowledge areas:

- Strategy Analysis
- Business Analysis Planning and Monitoring
- Elicitation and Collaboration
- Requirements Analysis and Design Definition
- Requirements Life Cycle Management
- Solution Evaluation

There are numerous *BABOK® Guide* techniques and *Agile Extension to the BABOK® Guide* techniques that are used during business analysis activities on agile projects. [Table 9.4](#) contains a mapping of techniques by knowledge area for agile projects.

TABLE 9.4 Mapping *BABOK® Guide* techniques to knowledge areas for agile projects

Technique	BAPM	EC	RLCM	SA	RADD	SE
Acceptance and evaluation criteria		X	X		X	X
Backlog management	X	X	X	X		
Brainstorming		X			X	
Business capability analysis				X	X	X
Business rules analysis					X	
Collaborative games	X	X	X	X	X	
Concept modelling		X		X	X	
Estimation	X					
Interface analysis		X			X	
Metrics and key performance indicators (KPIs)	X			X		X
Mind mapping	X	X				
Nonfunctional requirements analysis		X			X	X
Prioritization	X		X		X	
Process analysis					X	X
Process modelling		X			X	

Prototyping		X					X
Reviews		X	X				X
Scope modelling	X	X		X	X		
Stakeholder list, map, or personas	X	X					X
Use cases and scenarios		X			X		X
User Stories	X	X			X		X
Workshops	X	X	X	X	X		X

Table 9.5 contains a second mapping of techniques from the *Agile Extension to the BABOK® Guide* by knowledge area for agile projects.

TABLE 9.5 Mapping *Agile Extension to the BABOK® Guide* techniques to knowledge areas

Agile Extension Technique	BAPM	EC	RLCM	SA	RADD	SE
Behavior Driven Development		X			X	
Kano Analysis			X	X	X	
Lightweight Documentation	X	X			X	
MoSCoW Prioritization	X		X		X	
Personas	X	X		X		X
Purpose Alignment Model				X	X	
Real Options				X	X	
Relative Estimation	X					
Retrospective (Lesson Learned)	X					
Story Decomposition			X		X	
Story Elaboration					X	
Story Mapping		X	X		X	
Storyboarding		X			X	
Value Stream Analysis				X	X	X

Use these two tables as you navigate and learn about the agile variations for each knowledge area. Make sure you know which techniques might apply to specific knowledge areas and activities on your agile projects.

Let's step through each knowledge area and look at what might need to be done differently for agile projects:

Business Analysis Planning and Monitoring On agile projects, detailed business analysis planning tends to be adaptive, deferring the planning until work on an activity is ready to begin. An initial business analysis activity plan is developed at the beginning of the project. This high-level plan is updated at the start of each development cycle. Expect to see informal communication on agile projects. Business analysis deliverables are often verbal interactions versus

written documents.

Elicitation and Collaboration Elicitation and Collaboration occurs across the life cycle of agile projects. Typically, business analysts elicit the high-level solution scope early in the project and build a milestone plan for product delivery. Moving forward, each agile cycle involves eliciting details and building a list of backlog items to be developed in that specific cycle.



The intent of elicitation activities on agile projects is to generate just enough detail to complete the work and meet the goals for the project.

Requirements Life Cycle Management During agile projects, the scope of the effort is defined in more detail as the project progresses and work is being done. Often, business analysts discover that the project scope changes over time as the needs and designs evolve. Be sure to prioritize the features being developed as this drives the work that is done in a particular agile cycle. Solution validation takes place at the end of each cycle and replaces a formal requirements approval process.

Strategy Analysis Similar to Elicitation and Collaboration, Strategy Analysis activities are ongoing across an agile project. Activities in this knowledge area are used to define the product's vision and build the development roadmap. Risk analysis helps the business analyst address uncertainty about the needs and the solution scope over time. Adapting the project to changes in the organization's goals is an expected component of an agile project.

Requirements Analysis and Design Definition Progressive elaboration combined with “just-in-time” analysis and design is the key to a successful agile project. Analysis is done prior to an iteration to estimate the planned work. Additional analysis is done during the iteration to give the team what they need to get the work done.

Solution Evaluation Agile projects build a solution in an incremental fashion, iteration by iteration. Stakeholders evaluate the solution as it progresses through its iterations to ensure the end result will meet stakeholder needs and expectations. The business analyst facilitates these reviews.

Remember that all these knowledge area tasks and techniques can be modified for agile projects before being used. Let's move on and take a look at the next perspective that business analysts need to be familiar with: looking at business analysis work on a project from the business intelligence point of view.

The Business Intelligence Perspective

Business intelligence initiatives focus on transforming, integrating, and enhancing data. Value-added information is the goal for business analysts involved in business intelligence initiatives. To transform data into value-added information, you must source, integrate, and enhance the data before you can use it to support business decision making. I think of business intelligence as a three-pronged approach relative to the data on hand: reporting, integration, and analysis.

Business analysts often find themselves using data-centric systems and tools to support the acquisition, storage, and analysis of information. Business intelligence project teams frequently use technologies and tools to deliver information that helps their stakeholders manage strategic, tactical, and operational performance.

Change Scope

When working on a proposed change as part of a business intelligence solution, business analysts work closely with the business sponsor of the initiative to define how the proposed product or outcome aligns with the organization's objectives. Requirements are defined to address information and decision-making needs at the strategic, tactical, and process levels within the organization.

The enterprise-wide view of a business intelligence solution is often a data warehouse with operational data stores, data marts, unstructured data, and analytical sandboxes. Infrastructure services are often developed to support a business intelligence solution, such as data governance and metadata management.

There are five elements to consider as part of the business intelligence perspective and the scope of a proposed change. Let's step through each of those elements now in greater detail:

Breadth of Change Business intelligence systems must consistently define and use information across the organization. Consistency is achieved by establishing a “single point of truth” for diverse business data. This diverse business data can come from multiple data sources internal and external to the organization.

Depth of Change Business intelligence focuses on providing information that supports making decisions at strategic, tactical, and operational process levels within the organization. In addition to the information required for effective decision making, requirements are also developed for communication/reporting, information analytics, and data integration.



Strategic, Tactical, and Operational Decisions Strategic decisions are made at the executive level within the organization. Tactical decisions are made at the management level. Process decisions are made at the operational level.

Value and Solutions Delivered If your business intelligence initiative is not targeting providing folks with timely and accurate data, then the initiative is off target. People need access to high-value, actionable information to make the right business decisions at the right time. This decision making takes place at all levels in the organization: strategic, tactical, and operational. Oftentimes, performance improvements resulting from these decisions are realized as increased revenues and decreased costs.

Delivery Approach There are a number of ways to deliver a business intelligence solution in an organization. The solution architecture should support the multiple levels of decision making and the information that is required at each level. This allows the development team to progressively introduce the solution by organizational level or by functional area. Additional data sources may also be phased in to the solution over time. Organizations can “build or buy” a business intelligence solution that works for them.

Major Assumptions There are a number of assumptions that work well in business intelligence projects. Here is a quick list for you:

- Existing business processes and systems can provide definable and predictable source data.
- The cross-functional data infrastructure has not been precluded by the organization.
- The organization recognizes that process reengineering and change management is needed to realize value from a business intelligence solution.

Business Analysis Scope

Now let's take a look at the specific elements of business analysis work as part of the business intelligence perspective. There are four elements to consider. We will step through each of the four elements now in greater detail:

Change Sponsor Every business intelligence initiative needs a change sponsor to champion the effort and clear the path for getting work done. Choose a sponsor with the highest-level organizational role you can when selecting your change sponsor. The more power and authority your sponsor has, the more consistent and cohesive your usage of data assets in the business intelligence solution will be.

Change Targets Business intelligence solutions support making good business decisions in a timely fashion. These decisions are made at different levels in the organization and focus on different aspects of the business. Better reporting, monitoring, and predictive modelling of performance-based data can help

people and processes make even better decisions over time.

Business Analyst Position On business intelligence projects, the business analyst liaises between the business intelligence stakeholders and the development team. Their focus is on eliciting, analyzing, and specifying the business needs for the solution. Many business analysts participate in the more technical business intelligence work, such as enterprise data modelling, decision modelling, dashboard design, and ad hoc query design.



Business analysts on business intelligence projects often take one or more of the following roles:

- Defining business requirements and assessing potential solutions
- Understanding and analyzing data mining, predictive analysis, and developing visualizations
- Defining source systems data to be used for analytical purposes
- Defining source and target data structures in a logical data model

Business Analysis Outcomes Business analysts working on business intelligence projects focus on the major components of the solution architecture. Components include the specification of business systems to be changed as well as the collection of data from source systems. The integration of divergent data sources must also be addressed. Once the solution and its data are in place, the business analyst makes sure the stakeholders have access to the information that they need. [Table 9.6](#) summarizes the major business analysis outcomes on this project type.

TABLE 9.6 Business analysis outcomes on business intelligence projects

Outcome	Description
Business process coverage	Defines the high-level scope of the change, how information will be used, and the value it provides
Decision models	Identifies information requirements of each business decision and specifies the business rules logic
Source logical data model and data dictionary	Providing standard definitions of required data in each source system and the business rules applied to that data
Source data quality assessment	Evaluating completeness, validity, and reliability of source data
Target logical data model and data dictionary	Providing standard definitions of data elements and integrity rules in the target, or new, system

Transformation rules	Mapping source and target data elements to specify requirements for decoding/encoding of values in the transformation process
Business analytics requirements	Defining information and communication requirements for decision support outputs (such as reports, queries, and analytics) including data selection and presentation rules
Solution architecture	Giving a high-level design view of how decision support requirements for each functional area map to the business intelligence framework, such as where data is stored and how/when it will be extracted

Approaches and Techniques

Business intelligence projects do not have any formal methodologies that impact business analysis work. However, there are many informal and overlapping approaches you can take for business intelligence projects and initiatives. Business analysis is a component in all business intelligence projects, although many of the approaches take an informal and flexible view of the business analyst role. [Table 9.7](#) lists the approaches, brief descriptions of each approach, and the business analyst's focus in each area.

[TABLE 9.7](#) Summary of business intelligence approaches

Approach	Description	BA Focus Is On...
Descriptive analytics	Using historical data to understand and analyze past business performance	Information and communication requirements for standard/ad hoc reporting, queries, and dashboards
Predictive analytics	Applying statistical analysis methods to historical data to identify patterns, understand relationships/trends, and predict future events	Information requirements for pattern recognition through data mining, predictive modelling, forecasting, and condition-driven alerts
Prescriptive analytics	Identifying decisions and initiating actions to improve business performance using statistical optimization and simulation techniques	The business objectives, constraints criteria, and business rules underpinning the decision-making process
Supply-driven	Improving existing information systems by defining what data is available. <i>For a given cost, what value can we deliver?</i>	The technical goals of improving the existing information delivery systems and databases and exploring insights to be gained from consolidated data

Demand-driven	Providing information to improve decision making by identifying the needed information outputs and tracing it back to the data source. <i>For a given value, what cost do we incur?</i>	The business goals of providing the appropriate information to improve decision making that is not based on existing database structures or reporting
Structured data	Traditional data warehouse solutions consolidating structured data from operational systems. Using rules-driven templates to ensure data integrity	Data models, data dictionaries, and business rules defining information requirements and capabilities
Unstructured data	Using semi-structured or unstructured data with no predefined structure, rules, or relationships	Metadata definitions and data matching algorithms to define information requirements and capabilities

Let's change direction and take a look at the skills and competencies a business analyst should bring to the table when working on a business intelligence project.

Underlying Competencies

Business analysts on business intelligence projects should possess good communication skills and analytical competencies. These skills are essential when you find yourself coordinating business information requirements with business intelligence systems outcomes. Business analysts will find themselves collaborating with and liaising between the technical project team and the business stakeholders. According to the *BABOK® Guide*, the required competencies for a business intelligence business analyst include knowledge and experience in the following areas:

- Business data and functional usage
- Complex data structure analysis
- Business processes, including KPIs and metrics
- Decision modelling
- Data analysis techniques such as basic statistics, data profiling, and pivoting
- Data warehouse and business intelligence concepts and architecture
- Logical and physical data models
- Extract, Transform, Load (ETL) best practices
- Business intelligence reporting tools

Knowledge Area Impacts

Knowledge area tasks and techniques in the *BABOK® Guide* may be modified for business intelligence projects before being applied as part of your business analysis work. Additional business intelligence-specific techniques may also be applied to the tasks and their elements within a knowledge area in addition to or in place of the techniques used on more traditional projects.

There are numerous *BABOK® Guide* techniques that are used during business analysis activities on business intelligence projects. [Table 9.8](#) contains a mapping of these techniques by knowledge area for business intelligence projects.

TABLE 9.8 Mapping *BABOK® Guide* techniques to knowledge areas for business intelligence projects

Technique	BAPM	EC	RLCM	SA	RADD	SE
Acceptance and evaluation criteria	X			X	X	
Backlog management				X		
Balanced scorecard	X			X	X	
Benchmarking and market analysis				X		
Brainstorming	X	X		X		
Business rules analysis				X	X	X
Data dictionary					X	
Data flow diagrams				X	X	X
Data modelling				X	X	X
Decision analysis	X			X		X
Decision modelling				X	X	X
Document analysis		X		X	X	
Estimation	X			X		X
Focus groups		X		X		X
Functional decomposition	X	X		X	X	X
Glossary		X		X	X	X
Interface analysis		X			X	
Interviews	X	X			X	X
Item tracking	X	X	X			X
Metrics and KPIs	X				X	X
Nonfunctional requirements analysis	X				X	
Observation		X			X	X
Organizational modelling	X		X	X	X	X
Prioritization	X		X		X	X
Process modelling	X				X	X

Prototyping		X		X	
Reviews	X		X	X	
Risk analysis and management	X			X	X
Roles and permissions matrix	X		X		
Root-cause analysis	X			X	
Scope modelling	X				X
Sequence diagrams					X
Stakeholder list, map, or personas	X	X	X	X	X
State modelling					X
Survey or questionnaire	X	X			X
SWOT analysis				X	X
Use cases and scenarios	X			X	X
User stories	X				X
Vendor assessment					X
Workshops	X	X	X		

Use this table as you navigate and learn about the variations on each knowledge area. Make sure you know which techniques might apply to specific knowledge areas and activities on your projects. Let's step through each knowledge area and look at what might need to be done differently on your business intelligence projects.

Business Analysis Planning and Monitoring When planning a business intelligence project, business analysts must discover how knowledgeable their stakeholders are regarding this type of initiative. Information and communication requirements need to be expressed in the business intelligence context. Interpreting those requirements for the business intelligence technical specialists can be challenging for inexperienced business analysts. External business intelligence solutions typically provide frameworks, tools, and techniques to assist the business analyst in requirements development and modelling.



According to the *BABOK® Guide*, business intelligence solutions that integrate multiple data sources result in many stakeholders with overlapping information requirements. Business analysts must analyze and synthesize these individual requirements into a complete and cohesive set of requirements that have no conflicts or redundancies.

Elicitation and Collaboration Business analysts often find themselves using specialized documentation tools and techniques to elicit requirements from their business and technical stakeholders. These stakeholders often have only

partial knowledge and expertise relative to the business decisions that need support. This partial knowledge extends into the detail of the data elements supporting the business decisions; how data is sourced, transformed, and integrated; and how this required information should be presented.

Business intelligence projects are often cross-functional in nature. Commercial off-the-shelf business intelligence packages offer business analysts prototyping tools to elicit and clarify requirements with stakeholders. Helpful elicitation techniques include interviews, workshops, data models, data dictionaries, decision models, and process models.

Requirements Life Cycle Management Most business intelligence solutions require infrastructure capabilities as part of the solution. This technology dependency within the solution can impact how and in what order solution components are developed and delivered. Keeping solution delivery focused on the prioritized business needs can be challenging. Implementing sets of related requirements simultaneously might address some or all of these concerns.

Strategy Analysis During Strategy Analysis, high-level conceptual data models are often used to map the current state of corporate information, identify information “silos,” and assess related problems and opportunities. Organizational models are also helpful on business intelligence projects. They allow the business analyst to see the current data management infrastructure.

There are four high-level data models commonly used to model a future state business intelligence strategy. They are listed and described for you in [Table 9.9](#).

TABLE 9.9 Four common future state data models

Name	Description
Logical data models	Provides a static solution architecture view, representing the information portal connecting the operational data inputs with the delivery of business information outputs
Data flow diagrams	Maps the dynamic aspects of the solution by showing data in motion and identifies architectural constructs such as latency and accessibility
Decision models	Defines how business decisions are made and how data analytics are used to meet the needs of the decisions and the decision makers
Physical data models	Shows the implementation environment including the data warehouse and the data marts

The desired future state can also be mapped for data storage, conveyance, and transformation using high-level models. This future state can be implemented incrementally across different functional areas of the business. This allows business analysts to define their change strategy based on business needs and priorities, operational impacts, and usability of existing infrastructure components.

Requirements Analysis and Design Definition Business analysts use

data-oriented modelling techniques when specifying the data requirements for a business intelligence solution. Techniques include data modelling, data dictionaries, decision modelling, and business rules analysis. The first step is modelling the existing system's data so you can define availability, identify redundancies, and discover any data quality issues. Sometimes this requires reverse engineering if no documentation exists.

The future state is typically modelled using data flow diagrams that show how source information is structured in the proposed solution. Be sure to analyze existing reports to see if they can be replaced or repaired. Including ad hoc query and data mining capabilities in a business intelligence solution makes the solution more flexible and usable over time.

Solution Evaluation Many business intelligence solutions are implemented and then not used to the full extent of their capabilities. Many stakeholders use the solution the “old way” and don’t even try the new capabilities that are present. Business analysts need to be aware of this underutilization and encourage stakeholders to use the solution to the fullest. Training and a good set of user documentation may be helpful in this regard.

Remember that all of these knowledge area tasks and techniques can be modified for business intelligence projects before being used. Let’s move on and take a look at the next perspective that business analysts need to be familiar with: looking at business analysis work on a project from the information technology (IT) point of view.

The Information Technology Perspective

Working as a business analyst in the information technology realm is never boring. So many of our projects these days contain at least one IT system and its associated software applications and infrastructure. As a business analyst working on an IT project, you will be faced with a wide range of technology-related projects. These projects can range from “bug fixes” to application enhancements to adding new capabilities to implementing an entirely new IT infrastructure.

This section takes a look at the nonagile aspect of IT projects and initiatives. Business analysts on IT projects find themselves acting as translators between the business stakeholders and the technical project teams. Fostering collaboration and communication between these two groups is essential for project success and acceptance of the resulting solution.

Exam Spotlight

Watch out when using the term *design* on your exam. On IT projects, the term is traditionally used to denote technical design work performed by developers or architects after the requirements are developed by the business analysts. To be clear what you are working on as a business analyst, you may want to use the term *solution requirements* or *solution design* instead of *design*. Your exam questions may also use these terms to maintain this separation between the business and the technical aspects of an IT project.

Business analysts working on IT projects do their work while keeping an eye on three factors. The first factor to watch is the solution’s impact, which includes the value and risk of the solution to the business. The second factor consists of the maturity, formality, and flexibility of your organization’s change processes. The third factor is the scope of the proposed change that is being addressed.

Change Scope

There are many ways to initiate or trigger an IT project in an organization. The *BABOK® Guide* lists five common ways IT projects get started:

- Create a new organizational capability.
- Achieve an organizational objective by enhancing an existing capability.
- Facilitate an operational improvement.
- Maintain an existing IT system.
- Repair a broken IT system.

There are five elements to consider as part of the IT perspective and the scope of a proposed change. Let's step through each of those elements now in greater detail:

Breadth of Change IT projects come in many shapes and sizes. IT projects can address one system or many interacting systems. Systems may be developed or maintained in-house or by a third-party vendor external to the organization. Projects may focus on just hardware and software or reach across the enterprise and impact how things get done. Be aware of this wide range of values when you are working as a business analyst, as the context of the proposed change has an impact on your work. There are five questions to ask early on about your business analysis activities on an IT project:

- What happens to the business if this system shuts down?
- What happens to the business if system performance degrades?
- What business capabilities and processes depend on this system?
- Who contributes to these business capabilities and processes?
- Who uses these business capabilities and processes?

Depth of Change Requirements for IT projects can be very detailed. Sometimes those details dip into the technical side of things or cross many areas and functions of an organization. Business analysts find themselves defining interfaces between IT systems, discovering how their organization works, and finding out just how the proposed change and an IT solution supports the business. All of these things should allow you to define the value your solution will bring to the business and the capabilities it brings to its end users.

Value and Solutions Delivered Typically, IT systems are implemented to add value to the organization. This value includes the support capabilities and processes that will use the system. The IT functionality and effects of the system should be measurable.

Changes to IT systems can increase value in many ways, including reducing operating costs and decreasing wasted effort. They can target an increase in the organization's strategic alignment. Systems can be made more stable and reliable. Manual processes can often be automated, and problems can be repaired. Business capabilities can be supported and enhanced, or new capabilities can be implemented.

Delivery Approach The size and complexity of your IT solution impacts how much business analysis work needs to be done. Small enhancements can often be completed quickly. A single business analyst can perform their work in a short period of time as part of a small project such as this. In contrast, large IT solution efforts may require a multirelease, multiphase project to get things completed. These larger efforts may involve several business analysts over a longer period of time.

Major Assumptions There are some assumptions that go along with the IT perspective on projects. Remember that these projects are not agile projects. Agile projects were covered earlier in this chapter.

- Business capabilities and processes that use an IT system deliver value to the organization.
- Business analysts working from other perspectives can integrate their work with the IT business analyst's work.
- IT systems changes are mostly driven by business needs, although some may originate from the technical side of things.

Business Analysis Scope

Now let's take a look at specific elements of business analysis work as part of the IT perspective. There are four elements to consider. We will step through each of the four elements now in greater detail:

Change Sponsor Every IT project or initiative needs a change sponsor. This person may be sponsored by the business, by the IT department, or as collaboration between the two. Since overall organizational strategy alignment is still critical to project success, choose a sponsor who can champion the effort with the business and clear the path for getting work done. Many organizations have a program or project management office within their IT department that selects, prioritizes, and manages their projects.

Change Targets IT solutions have a business and a technical impact within the organization. The changes that are being made require the business analyst to have a handle on all possible departments, processes, applications, and functions that may be impacted in some way. You need to keep your eye on both the big picture and the little details.

Business Analyst Position On IT projects, the business analyst liaises between the business stakeholders and the technical development team. Their focus is on eliciting, analyzing, and specifying the solution requirements for the change. You find business analysts with a myriad of backgrounds working on IT projects. Sometimes the business analyst is chosen for a specific skill set, while other times they are chosen because they are available to perform the work. Business analysts on IT projects may be IT business analysts, SMEs, software users, systems analysts, business process owners, technical team members, or from an external vendor.

Business Analysis Outcomes Business analysts working on IT projects focus on the business processes impacted by the change as well as the data and information collected by the system. The deliverables and work effort should be planned in advance so you don't miss anything. Use the project's change approach and any organizational guidelines to make sure all business analysis deliverables and outcomes are accounted for.

The *BABOK® Guide* lists a comprehensive set of business analysis deliverables that IT business analysts may be responsible for on their projects. Take a look and see how many of these deliverables are required for your IT projects. They include the following:

- Defined, complete, testable, prioritized, and verified requirements

- Analysis of alternatives
- Business rules
- Gap analysis
- Functional decomposition
- Use cases and scenarios and/or user stories
- Interface analysis
- Prototypes
- Process analysis
- Process models
- State models
- Decision models
- Context models or scope models
- Data models

Approaches and Techniques

Solution development methodologies on IT projects are either predictive or adaptive. Predictive methodologies have structured processes that emphasize planning and formal documentation. Each phase of a predictive project must be completed before the next phase can begin. Adaptive processes are more iterative and incremental in nature. They allow for rework and greater flexibility across the project life cycle. Some organizations use a blend, or hybrid, of these two solution development methodologies.

There are many IT methodologies that are used on IT projects and initiatives. Business analysis is a component in all of the methods. [Table 9.10](#) summarizes some established IT methodologies.

TABLE 9.10 Summary of IT methodologies

Methodology	Description
Homegrown or organization specific	Derived from components of other established methodologies and used by the IT organization to govern their IT initiatives and projects
Requirements Engineering (RE)	Structured approach for requirements development and management used in predictive, adaptive, and agile environments
Structured Systems Analysis and Design (SSADM)	Predictive development methodology focusing on establishing logical models and separating requirements from solutions during systems analysis and development
Unified Process (UP)	Adaptive development approach where most of the requirements development is performed in the inception

| and elaboration phases

Underlying Competencies

IT business analysts are experts at influencing, facilitating, and negotiating with the technical project team and the business stakeholders. Although technical skills are not required, they may also be technically skilled at programming, database creation, system/solution architecture creation, or software testing.



According to the *BABOK® Guide*, business analysts on IT projects must understand and deliver the details required in the project requirements to support a technical solution. They must also develop requirements that are technically feasible for their organization.

Systems thinking is a crucial competency for business analysts on IT projects. They need to be able to see both the “big picture” of the solution within the framework of the enterprise as well as details of the specific need and the resulting technical solution. Identifying impacts to people, processes, and software at both levels helps the business analyst to identify and address risks and deliver a successful outcome.

Knowledge Area Impacts

Knowledge area tasks and techniques in the *BABOK® Guide* may be modified for IT projects before being applied as part of your business analysis work. There are many *BABOK® Guide* techniques that are used during business analysis activities on IT projects. [Table 9.11](#) contains a mapping of techniques by knowledge area for IT projects.

TABLE 9.11 Mapping *BABOK® Guide* techniques to knowledge areas for IT projects

Technique	BAPM	EC	RLCM	SA	RADD	SE
Acceptance and evaluation criteria		X				X
Backlog management	X					
Brainstorming		X				
Business capability analysis				X		
Business rules analysis					X	
Collaborative games		X				
Data dictionary					X	
Data flow diagrams					X	
Data modelling					X	

Decision analysis		X	X	X
Decision modelling				X
Document analysis	X	X		X
Estimation	X		X	X
Focus groups		X	X	
Functional decomposition	X		X	X
Glossary				X
Interface analysis		X		X
Interviews		X	X	
Item tracking	X	X	X	X
Metrics and KPIs	X	X		X
Nonfunctional requirements analysis				X
Observation		X	X	
Organizational modelling	X		X	X
Prioritization			X	
Process analysis				X
Process modelling		X	X	X
Prototyping		X		X
Reviews				X
Risk analysis and management				X
Roles and permissions matrix	X			X
Scope modelling	X	X	X	X
Sequence diagrams		X		X
Stakeholder list, map, or personas	X	X		X
State modelling		X		
Survey or questionnaire		X	X	
SWOT analysis			X	X
Use cases and scenarios		X		X
User stories				X
Vendor assessment			X	X
Workshops		X	X	

Please refer to and review this table as you navigate and learn about each knowledge area. Make sure you know which techniques might apply to specific knowledge areas and activities on your projects.

Let's step through each knowledge area and look at what might need to be done differently for IT projects:

Business Analysis Planning and Monitoring Use the business analysis approach to identify the resources required for business analysis work on your IT project. The approach also allows you to plan the effort and integrate the business analysis work into the overall project plan. In many organizations, IT projects have predefined business analysis tasks and deliverables. Typical tasks target the interoperability of business processes, software systems and data, and the impact a change may have across the board.

Business analysts on IT projects are often part of the software development team. In addition to working with the team members and key internal stakeholders, the business analyst may work with external vendors who are providing all or part of a software solution.

Elicitation and Collaboration Eliciting business analysis information on IT projects involves both the business and the technical stakeholders for the project. Scheduling a workshop or group session with the technical and business stakeholders can help identify additional solution impacts on technology as well as on the business side of things. Effective business analysts facilitate collaboration between the business and technical staff members on their projects.



In addition to using the Elicitation and Collaboration techniques defined in Chapter 10 of the *BABOK® Guide*, try using one or more of the following elicitation methods on your IT project:

Investigation: Using organization process assets, market research, competitive analysis, functional specifications and observation

Simulation: Using statistical modelling and mock-ups

Experimentation: Using proof of concept, prototypes, alpha- and beta-releases, and A/B testing

Eliciting requirements on IT projects can require the business analyst to work across organizational boundaries. This adds risk to the effort by potentially causing communication breakdowns and rework. It is essential to keep your key stakeholders engaged, informed, and active during elicitation.

Requirements Life Cycle Management IT projects can change considerably across the project life cycle. Sometimes new functionality provided by the solution impacts the business and technology in ways that were not considered early on. These evolving requirements must be communicated to stakeholders and agreed upon as the project progresses. IT business analysts must pay attention to alignment, approval, change control, version control, traceability, and the use of requirements life cycle management tools on their projects.

Strategy Analysis IT organizations focus their strategy analysis efforts on technologies, systems, business units, business processes, and business

strategies that can be impacted by a proposed change. This involves understanding the current state of the systems and processes within the organization, as well as the desired future state that is targeted by the proposed change. Defining the gap between the current and future state allows the business analyst to develop and explore possible solution options.

Business analysts must also assess the risks and uncertainties relative to the change scope and desired future state. Risks and potential benefits should be identified and defined. Parameters for variance in known processes and operations should be established. There may also be external vendor risks present. Don't forget to consider the systems and any technical risks. Solution scalability should be evaluated along with any additional process or system changes that may be required.

Requirements Analysis and Design Definition Remember that the term *design* in this knowledge area refers to the business analyst's point of view versus a technical design from the development team. Business analysts consider models of processes, user interface layouts, and report definitions to be designs that fall within the business analysis realm.

During analysis and design definition, business analysts elicit, define, and analyze business and stakeholder requirements, as well as define stakeholder needs and identify the value to be realized by the proposed change and resulting solution. They also define, analyze, and model solution designs.

The resulting requirements are documented using words and pictures. The documented requirements should contain enough detail to allow the business stakeholders to verify and validate the requirements. The developers should be able to build a technical design using the documented requirements, and the testers should be able to build test cases to show the solution performs as it should.

Solution Evaluation According to the *BABOK® Guide*, solution evaluation activities focus on the "solution components and the value they provide." On IT projects, the business analyst needs to also include the interfaces between systems and processes.

Software testing is an important component of solution evaluation work on IT projects. Testing assures that the solution performs as defined and meets the business needs as defined by the requirements. At a minimum, business analysts are involved with user acceptance testing activities on IT projects.

Remember that all of these knowledge area tasks and techniques can be modified for IT projects before being used. Let's move on and take a look at the next perspective that business analysts need to be familiar with: looking at business analysis work on a project from the business architecture point of view.

The Business Architecture Perspective

Practicing business analysis in the context of business architecture focuses on modelling and understanding the entire enterprise. Business architecture provides architectural views and descriptions, or *blueprints*, of an organization. These blueprints are used to align strategic objectives with tactical demands. Blueprints and architectural models enable organizations to see the big picture of the domain that is under analysis and how all of the pieces and parts fit together.

Business architecture blueprints follow a set of specific architectural principles. [Table 9.12](#) summarizes these four principles.

TABLE 9.12 Summary of architectural principles

Principle	Description
Scope	Scope of business architecture is the larger business context of the enterprise.
Separation of concerns	Separate what the business does from the different architectural components (such as what, how, who, why).
Scenario driven	Each business scenario requires a different set of blueprints with a different set of relationships and information.
Knowledge based	Collect and catalog the different architectural components (such as what, how, who, why) and their relationships to help answer business questions.

Business architecture helps you keep systems and operations working well together. Business analysts often use these models of the existing state to analyze and assess the impacts of a proposed IT or non-IT change. The architecture itself can also be used as a catalyst for change while staying aligned with the enterprise's vision, goals, and strategy.

Change Scope

Business architecture focuses both on and across the enterprise. This does not mean that a business architecture initiative or project has to have the same broad focus. There are many ways to construct a business architecture project in an organization. Keep in mind that you should be aware of the entire enterprise even if your project is addressing only a small piece of that enterprise. That's what business architecture is all about—keeping the entire enterprise in mind in order to be consistent in your implementation.

There are five elements to consider as part of the business architecture perspective and the scope of a proposed change. Let's walk through each of those elements now:

Breadth of Change Remember that business architecture may be done across

the whole enterprise, across a line of business within the enterprise, or across a single functional division. Staying aligned with the enterprise's strategic objectives is an important part of any business architecture project.

Depth of Change Business architecture projects may be shallow or deep when it comes to the different levels found within an organization. Typically, these projects focus on the executive or management levels of the organization. Executive level projects target executive decision-making capabilities, while management-level projects target executing specific initiatives within the organization.



Business architecture provides context to the operational decision or process levels within an organization. Business architecture assesses process at the level of the value stream versus actually operating at these operational decision or process levels.

Value and Solutions Delivered Business architecture uses the *separation of concerns principle* to develop models decomposing the business system, solution, or organization into individual elements. Each element has specific functions and interactions with other elements. Typical elements of these models include the following:

- Capabilities
- Value
- Processes
- Information and data
- Organization
- Reporting and management
- Stakeholders
- Security strategies
- Outcomes

Business architecture blueprints allow management to plan and execute strategies for projects of all types. This includes strategic planning, organizational redesign, and business remodelling efforts. Improving customer retention can be achieved by performance measurement initiatives. Business operations may be streamlined in some way and costs reduced as a result.

Delivery Approach The business architecture's planning framework is frequently used to identify required changes and make decisions about which initiatives to perform. The insight and understanding of the organization's strategy alignment is the trigger for a change. For each blueprint, business architecture may define the current state, the desired future state, and one or more transition states between the current and future states.

A business architect familiar with the organization's value streams, capabilities, structures, processes, and data stores often performs business architecture modelling. Business architects use blueprints and models to address needs using the framework of the organization's goals and strategy.

Successful business architecture work requires the support of the executive team and integration with the governance processes of the organization. Any new work must be integrated with ongoing initiatives and have access to senior leadership within the enterprise.

Major Assumptions There are some assumptions that go along with the business architecture perspective on projects. Remember that these projects can be IT or non-IT projects. Assumptions include the following:

- Business analysts have a view of the entire organization under analysis and get full management team support.
- Business owners and subject-matter experts (SMEs) participate.
- An organizational strategy is in place.
- There is a business imperative to be addressed.

Business Analysis Scope

Now let's take a look at the specific elements of business analysis work as part of the business architecture perspective. There are four elements to consider. We will step through each of these elements now:

Change Sponsor The sponsor of a business architecture initiative should be a senior executive, a business owner, or a line-of-business owner.

Change Targets Business architecture analysis typically targets changes to business capabilities, value streams, or initiative plans. Investment and portfolio decisions may also be involved. All management levels in the organization can use the business architecture to guide changes within the organization. Solution architects, project managers, and business analysts may also rely on business architecture when dealing with a proposed change.

Business Analyst Position Business analysts working on business architecture projects need to understand the enterprise context in order to provide balanced insight into the elements and relationships that are part of their projects. The models, or blueprints, of the organization come in handy as the basis for strategic decisions regarding proposed changes. This strategic alignment is very important as you support your projects through the transitions between the current and future states.

The short list of skills and knowledge required of business analysts on business intelligence projects is significant. The list includes knowledge of business strategy and goals and conceptual business information. Knowledge of the enterprise IT, process business performance, and intelligence architectures are also required.

Business Analysis Outcomes General outcomes for business architecture

include the alignment of the organization to its strategy, planning change as part of strategy execution, and ensuring that any implemented changes remain aligned to that strategy. These strategy-focused outcomes provide the business analyst with context for their activities.

Business capability, value stream, and organization maps are three key business architecture deliverables. High-level process architecture, business motivation models, and business information concept deliverables are also helpful. Let's move on and consider some specific reference models used as business architecture templates.

Reference Models and Techniques

There are many approaches to business architecture projects and initiatives. [Table 9.13](#) summarizes business architecture reference models and the industry where that model is used.

TABLE 9.13 Business architecture reference models

Reference Model	Domain
Association for Cooperative Operations Research and Development (ACORD)	Insurance and financial industries
Business Motivation Model (BMM)	Generic
Control Objectives for IT (COBIT)	IT governance and management
eTOM and FRAMEWORK	Communications sector
Federal Enterprise Architecture Service Reference Model (FEA SRM)	Government (developed for the U.S. federal government)
Information Technology Infrastructure Library (ITIL®)	IT service management
Process Classification Framework (PCF)	Multiple sectors including aerospace, defense, automotive, education, electric utilities, petroleum, pharmaceutical, and telecommunications
Supply Chain Operations Reference (SCOR)	Supply chain management
Value Reference Model (VRM)	Value chain and network management

There are many techniques used commonly for business architecture projects. [Table 9.14](#) lists these techniques and a brief description of how that technique may be used in a business architecture project environment.

TABLE 9.14 Business architecture techniques

Technique	Description
Archimate®	An open-standard modelling language
Business Motivation Model (BMM)	Formalizes business motivation in terms of mission, vision, strategies, tactics, goals, objectives, policies, rules, and influences
Business Process Architecture	Models processes and interface points to provide a holistic view of the processes existing within an organization
Capability Map	Hierarchical catalog of business capabilities categorized as strategic, core, or supporting capabilities
Customer Journey Map	Depicting the journey of a customer and their user experience through touch points and stakeholders in a service or organization
Enterprise Core Diagram	Models integration and standardizations of the organization
Information Map	Catalogs important business concepts associated with business capabilities and value delivery—a taxonomy of the business
Organizational Map	Models relationships of business units to each other, to external partners, and to capabilities and information. Focuses on interaction between units
Project Portfolio Analysis	Models programs, projects, and portfolios to provide a view of an organization's initiatives
Roadmap	Models actions, dependencies, and responsibilities required for an organization to move from a current state through transition states to a future state
Service-Oriented Analysis	Models analysis, design, and architecture of systems and software to provide a view of an organization's IT infrastructure
The Open Group Architecture Framework (TOGAF®)	A method of developing enterprise architecture focusing on business architecture
Value Mapping	Represents the activity stream required to deliver value as an end-to-end process
Zachman Framework	Provides an ontology of enterprise primitive concepts based on six interrogatives (what, how, where, who, when, why) and six levels of abstraction (executive, business management, architect, engineer, technician, enterprise)

Underlying Competencies

Business analysts working on business architecture projects must have a high tolerance for ambiguity and uncertainty. You need to be comfortable and capable when interacting with executives in your organization. The ability to put things into a higher, strategic context is a key component of success. You will find yourself delivering short-term tactical outcomes that provide immediate value as well as contribute to achieving the long-term business strategy.

Knowledge Area Impacts

Knowledge area tasks and techniques in the *BABOK® Guide* may be modified for business architecture projects before being applied as part of your business analysis work. Other business architecture-specific techniques can also be applied to the tasks and their elements within a knowledge area.

There are numerous *BABOK® Guide* techniques that are used during business analysis activities on business architecture projects. [Table 9.15](#) contains a mapping of techniques by knowledge area for business architecture projects.

TABLE 9.15 Mapping *BABOK® Guide* techniques to knowledge areas for business architecture projects

Technique	BAPM	EC	RLCM	SA	RADD	SE
Acceptance and evaluation criteria	X				X	
Backlog management					X	
Balanced scorecard			X	X	X	X
Benchmarking and market analysis			X	X	X	X
Brainstorming	X	X		X	X	X
Business capability analysis	X		X	X	X	X
Business model canvas				X	X	
Business rules analysis				X	X	
Collaborative games			X	X	X	X
Data dictionary					X	
Data flow diagrams					X	
Data modelling			X	X	X	
Decision analysis	X		X		X	
Document analysis		X		X	X	
Estimation	X		X	X	X	
Focus groups		X		X	X	X
Functional decomposition	X	X			X	
Glossary		X		X	X	

Interface analysis		X	X		X		
Interviews	X	X			X		
Item tacking	X	X	X		X	X	
Lessons learned			X		X	X	
Metrics and KPIs	X		X	X	X	X	
Nonfunctional requirements analysis	X				X		
Observation		X			X	X	
Organizational modelling	X		X		X	X	X
Process analysis			X		X	X	
Process modelling	X		X		X	X	
Prototyping		X			X		
Reviews	X		X		X	X	
Risk analysis and management	X		X		X	X	X
Roles and permissions matrix	X		X		X	X	
Root-cause analysis	X		X		X	X	
Scope modelling	X				X		
Sequence diagrams					X		
Stakeholder list, map, or personas	X	X	X		X	X	X
State modelling						X	
Survey or questionnaire	X	X			X	X	X
SWOT analysis			X		X	X	X
Use cases and scenarios	X				X		
User stories	X				X		
Vendor assessment					X		
Workshops			X		X	X	

Other business architecture-specific techniques can also be applied to the tasks and their elements within a knowledge area. [Table 9.16](#) contains a mapping of these other techniques by knowledge area for Business Architecture projects.

TABLE 9.16 Mapping other techniques to knowledge areas for business architecture projects

Other BA Techniques	BAPM	EC	RLCM	SA	RADD	SE
Archimate®			X	X	X	
Business motivation modelling						X
Business process architecture	X		X	X	X	X
Business value Modelling			X			
Capability map	X		X	X	X	X

Customer journey map			X	X	X
Enterprise core diagram		X	X	X	
Project portfolio analysis	X	X	X	X	
Roadmap		X	X	X	
Service-oriented analysis	X	X	X	X	X
Strategy map			X		
Value mapping		X	X	X	X

Please refer to and review these tables as you navigate and learn about the business architecture-related variations on each knowledge area. Make sure you know which techniques might apply to specific knowledge areas and activities on your projects.

Let's look at each knowledge area, looking at what might need to be done differently on business architecture projects.

Business Analysis Planning and Monitoring When you are planning your business analysis efforts, be sure to look at the context of the organization, including strategy, direction, and current business and operational capabilities. Plans and analysis for a proposed change take place within this organizational culture and are impacted by the organization's capacity for change. Within this framework, you can evaluate the value proposition of your project and select the relevant architectural viewpoints for your analysis efforts.



Governance planning and monitoring activities focus on selecting projects that provide the most benefit relative to the business strategies. You will also determine which business architecture models or frameworks exist or are used in the organization.

Elicitation and Collaboration Business architecture requires inputs from across the organization. Business analysts elicit business analysis information from stakeholders regarding strategy, value, existing architectures, and performance metrics. You will use both formal and informal approaches to finding out what you need to know.

Business analysts advocate the proposed change they are analyzing and ensure the approach and outcome supports the organization's strategy. These tasks require mastery of elicitation, communication, and collaboration skills.

Requirements Life Cycle Management Projects impact an organization's business architecture over time. Business analysts find themselves involved with expanding, correcting, and improving that architecture. Executive support is an essential component of business analysis success. A review board focusing on portfolio management will make the decisions about what projects to invest in and which projects to discard.

Strategy Analysis Business architecture and strategy analysis go hand in hand. Business analysts use business architecture to get a view of the current state of an organization and to define a desired future state. The organization's change strategies will drive decision making and direction.

There may be one or more transition states that are required to transition from the current to that new future state. Business analysts must clearly define these transition states and make sure that the organization can stay competitive during the transition times. Be sure to consider cost, opportunity, and effort as part of your strategy analysis work.

Requirements Analysis and Design Definition Business architecture provides views into the organization using many types of models. According to the *BABOK® Guide*, these "models provide context and information that result in better requirements analysis and design." Business analysts use models to minimize risk and avoid duplication of systems, capabilities, or information.

Design work is typically done at the same time as requirements development. Business analysts look at the strategic alignment and effects of a proposed change. For both requirements and design development, business analysts focus on keeping the organization working well and delivering business value.

Solution Evaluation Evaluating a solution involves assessing how well the business is performing. Performance characteristics and measures need to be defined and built into the solution being implemented. The outcomes must be well defined and measurable. The information required to measure performance needs to be available, collected, and reported. Performance measurement tends to be done by the business owners versus the project's business analysts.

All knowledge area tasks and techniques can be modified for business architecture projects before being used. Now, let's move on and take a look at the next perspective that business analysts need to be familiar with: looking at business analysis work on a project from the business process management point of view.

The Business Process Management Perspective

Business process management (BPM) is a management discipline focused on developing or improving an organization's business processes and value delivery. BPM projects implement improvements to the way an organization's work is done. This includes both manual and automated processes. In many organizations, business process management is an ongoing effort.

Change Scope

Business analysts may find themselves working on a single process or all of the processes within an organization. The business analyst's focus in all cases is to change processes in order to improve and meet an organization's objectives.

[Table 9.17](#) contains the four activities found in a business process management life cycle.

TABLE 9.17 The BPM life cycle

Activity	Description
Designing	Identifying processes and defining the current “as-is” state to determine the desired future “to-be” state, and analyzing the gap between current and future states
Modelling	Graphically representing the process to compare current and future states, and providing inputs to requirements and solution design specifications
Executing and Monitoring	Collecting data during the actual execution of the process to analyze value and recommending design improvement alternatives
Optimizing	Ongoing repetition and iteration of the other three phases to modify models and designs, remove inefficiencies, and add more value

There are five elements to consider as part of the BPM perspective and the scope of a proposed change. Let's step through each of those elements now in greater detail:

Breadth of Change BPM initiatives can span the entire enterprise targeting optimization of value delivery across end-to-end processes. Individual initiatives focus on specific processes and subprocesses within an organization.

Depth of Change BPM frameworks are sets or descriptions of processes for generic organizations, specific industries, or types of value streams. Business analysts may use these frameworks to analyze an organization's processes. BPM frameworks can be high-level or very detailed in nature, such as analyzing an organization's supply chain by decomposing high-level processes into their subcomponents and the individuals performing specific tasks.

Value and Solutions Delivered BPM's goal is improving operational

performance and reducing costs and risks. *Transparency* into processes and operations is also a common component of BPM projects. The business needs of the customers are the *BPM drivers*, such as reducing costs, increasing quality, or addressing risks.



According to the *BABOK® Guide*, operational performance improvements address effectiveness, efficiency, adaptability, and quality.

Delivery Approach Delivery approaches for BPM projects range from tactical methods of improving individual processes to management-centric methods touching all processes in the organization. [Table 9.18](#) describes the mechanisms used to implement BPM.

TABLE 9.18 Methods used to implement BPM

Method	Description
Business process reengineering	Aiming for major process redesign across the enterprise
Evolutionary forms of change	Setting overall objectives for the process and then individual changes to bring the subprocesses in line
Substantial discovery	Revealing and analyzing an organization's actual processes when they are undefined or very different from the documentation that is available
Process benchmarking	Comparing an organization's processes and performance metrics to industry best practices
Specialized BPMS applications	Applications supporting BPM initiatives that directly execute process models and automate BPM activities

There are four process improvement approaches that may be used on BPM projects or initiatives. They are categorized in terms of their point of origin and whether their solutions are organizational/people-based or technological/IT-based. [Table 9.19](#) summarizes these four approaches for you.

TABLE 9.19 Four BPM process improvement approaches

Method	Description
Top-down	Initiatives orchestrated and controlled by senior management, targeting end-to-end processes or major parts of the business
Bottom-up	Tactical initiatives improving individual processes and department workflows in smaller parts of the organization
People-	Initiatives where the principal change is the activities and workflows

centric	of an organization
IT-centric	Initiatives where the principal change is process automation

Major Assumptions Here is a brief list of major BPM assumptions for you to consider:

- Processes are supported by IT systems, but developing these IT systems is not part of most BPM methods.
- BPM initiatives have senior management support.
- BPM systems require tight integration with organizational strategy, although strategy development is outside of the BPM perspective's scope.
- BPM initiatives are cross functional and typically span from end-to-end in an organization.

Business Analysis Scope

Now let's take a look at the specific elements of business analysis work as part of the BPM perspective. There are four elements to consider.

Change Sponsor Executives tend to be the starting point for most BPM initiatives as they link strategic objectives to business processes and try to increase both value and outcomes. An external trigger often generates a business need leading to a business analyst developing a business case to justify a BPM initiative for executive management. Once the project or initiative is underway, process or subprocess managers at different levels in the organization manage the resulting BPM effort.

Change Targets [Table 9.20](#) contains a list of primary change targets for a BPM project or initiative and defines the responsibilities associated with each change target role.

TABLE 9.20 BPM change targets

Role	Responsibilities
Customer	Key stakeholder validating effectiveness of the process change and ensuring process delivery goals align to customer expectations
Regulator	Represent compliance and risk management for the initiative
Process owner	Key stakeholder with the responsibility and authority to make final decisions about changes to affected processes
Process participants	Define activities of the process being evaluated.
Project manager	Manages the BPM initiative and is accountable for delivery decisions
Implementation team	Converts BPM plans into functioning and integrated business processes

Business Analysis Position Business analysts on BPM projects may assume many roles. Process architects find themselves modelling, analyzing, deploying, monitoring, and continuously improving business processes using a technology-based BPM platform. Process analysts or designers are the experts in documenting and understanding process design and performance trends using various BPM frameworks. Process modellers capture and document as-is and to-be business processes for implementation or support by an IT system.

Business Analysis Outcomes [Table 9.21](#) summarizes the five typical outcomes for business analysts on BPM projects.

TABLE 9.21 BPM business analysis outcomes

Outcome	Description
Business process models	Model the as-is, to-be, and transition processes from end to end.
Business rules	Guide business processes and assert business structure or control business behavior.
Process performance measures	Parameters used to identify process improvement opportunities to align processes to business needs/objectives
Business decisions	Determine which of a set of options will be acted upon by the process.
Process performance assessment	Measures and monitors the performance of targeted business processes in a static or dynamic fashion

Frameworks, Methodologies, and Techniques

There are many frameworks, methodologies, and techniques used for BPM projects. [Table 9.22](#) summarizes the common frameworks used as part of business process management.

TABLE 9.22 BPM frameworks

Framework	Description
ACCORD	Methodological framework mapping current state models and unstructured data to conceptual models
Enhanced Telecommunications Operations Map (eTOM)	Hierarchical framework used by the telecommunications industry and other service-oriented industries
Governments Strategic Reference Model (GSRM)	Life cycle framework providing generic government processes and patterns for each organizational maturity stage
Model-based and Integrated Process	Cyclical framework assessing process readiness, outlining a process under review, detailing data

Improvement (MIPI)	collection, modelling the current process, implementing an improved process, and reviewing the process
Process Classification Framework (PCF)	Classification framework detailing processes for benchmarking and performance measurement

In addition to the frameworks, a number of methodologies also come into play as part of BPM projects. [Table 9.23](#) lists them for you.

TABLE 9.23 BPM methodologies

Methodology	Description
Adaptive Case Management (ACM)	Used when processes are not fixed or static with a lot of human interaction
Business Process Reengineering (BPR)	Rethinking and redesigning business processes to generate improvements
Continuous Improvement (CI)	Ongoing monitoring and adjustment of existing processes to bring them closer to goals or performance targets
Lean	Eliminating waste, or work the customer will not pay for, in a process
Six Sigma	Statistically oriented way of eliminating variations in the outcome of a process
Theory of Constraints (TOC)	Optimizing performance by managing three variables: process throughout, operational expense to produce throughout, and product inventory
Total Quality Management (TQM)	Processes provide customers with the highest quality products/services that meet or exceed expectations.

There are many techniques used specifically in BPM projects. These techniques are not found in the “Techniques” chapter of the *BABOK® Guide*. [Table 9.24](#) lists these techniques and gives a brief description of how that technique may be used.

TABLE 9.24 BPM techniques

Technique	Description
Cost analysis	Showing detailed cost of a process by listing the cost per activity. Also known as activity-based costing
Critical to Quality (CTQ)	Aligning process improvement efforts to customer requirement by using tree diagrams
Cycle-time analysis	Analyzing the time each activity takes within the process.

	Also known as duration analysis
Define Measure Analyze Design Verify (DMADV)	Developing new or improving existing processes using a data-driven, structured roadmap
Define Measure Analyze Improve Control (DMAIC)	Improving existing processes using a data-driven, structured roadmap
Drum-Buffer-Rope (DBR)	Ensuring that the system constraint always functions at the maximum possible output by having a buffer of materials to keep the system busy
Failure Mode and Effect Analysis (FMEA)	Investigating process failures and defects in the as-is roadmap, identifying potential causes, and correcting them in the to-be roadmap
House of Quality/ Voice of Customer	Relating customer desires and product characteristics to organizational capabilities using a matrix
Inputs, Guide, Outputs, Enablers (IGOE)	Describing process content by listing inputs and outputs, guides, and supporting tools/information
Kaizen Event	Improving value delivery in a specific process or subprocess in a focused, rapid effort
Process Simulation	Modelling the process and a set of randomized variables to allow for multiple process variations and estimate performance
Suppliers Inputs Process Outputs Customer (SIPOC)	Summarizing inputs and outputs from multiple processes in a table
Theory of Constraints (TOC) Thinking Processes	Diagnosing conflicts, identify causes of problems, and defining future state using a logical cause-and-effect model
Value Added Analysis	Identifying improvement opportunities by looking at customer benefits added at each step of a process
Value Stream Analysis	Assessing value added by each functional area of a business to a customer using an end-to-end process
Who What When Where Why (5Ws)	Gathering information using a basic set of questions. May also include "How"

Underlying Competencies

Business analysts on BPM projects are experts at challenging the status quo, understanding the root causes of problems, assessing why things are done in a particular way, and encouraging stakeholders to think differently in order to do things better. According to the *BABOK® Guide*, the required competencies for BPM business analysts also include the following:

- Understanding/articulating internal/external process views
- Interaction, facilitation, and negotiation skills
- Conflict management skills
- Communication skills across all levels of the organization



Real World Scenario

Executive Presence and Maintaining Professional Detachment

Working on BPM projects often involves interaction with executive management. As part of a business analyst's executive presence in these situations, you need to master the art of *professional detachment*. Your ability to remain in control of yourself when others become angry or frustrated because of process changes, not getting their way, or personality clashes will be tested. Professional detachment is about looking at the events from a distance without being directly emotionally involved or taking what happens outside as a personal matter. Here are a few examples:

Lack of Detachment

Horatio was assigned as a business analyst to a project that involved the negotiation and implementation of a new national interface standard between telecommunications companies.

Horatio's team was invited to travel to a meeting to discuss the implementation details with one of the major companies involved in the effort. He and his teammates flew out, drove to the company's headquarters, and were ushered into a conference room to begin a two-day session of discussions with the company's executive management team and project leaders.

The leader of the opposite team became increasingly frustrated as discussions went through midmorning. Her own team repeatedly corrected the leader as she misrepresented capabilities from their software application systems and how the team would interface their capabilities.

In an explosive display of emotion, the leader stalked out of the conference room. Both her team and Horatio's team were stunned. The leader had not told anyone present when or if she would return. The group waited silently at the table for more than an hour before one of the team members went to find her. The team member returned telling the group that the meeting was over and would not be rescheduled. Ouch.

Too Much Detachment

A second major company on the same project came to meet Horatio's team at their headquarters. Discussions were lively, cordial, and productive. One of their representatives, Horatio's counterpart on the project, was both a friendly and intelligent meeting participant.

In response to the representative's friendliness, Horatio overcompensated and became too detached during the meeting. Questions were answered with to-the-point and factual responses. Any hint of other than professional responses were belayed to the point of being curt.

It wasn't until months later that Horatio allowed himself the freedom of actually becoming friendly with his counterpart from the other organization.

Knowledge Area Impacts

Knowledge area tasks and techniques in the *BABOK® Guide* may be modified for BPM projects before being applied as part of business analysis work. Additional BPM-specific techniques may also be applied to the tasks and their elements within a knowledge area in addition to or in place of the techniques used on more traditional types of projects.

There are numerous *BABOK® Guide* techniques that are used during business analysis activities on BPM projects. [Table 9.25](#) contains a mapping of techniques by knowledge area for BPM projects.

TABLE 9.25 Mapping *BABOK® Guide* techniques to knowledge areas for BPM projects

Technique	BAPM	EC	RLCM	SA	RADD	SE
Acceptance and evaluation criteria			X			X
Backlog management			X			
Balanced scorecard						X
Benchmarking and market analysis					X	X
Brainstorming	X	X				X
Business capability analysis						X
Business rules analysis			X		X	X
Decision analysis						X
Decision modelling					X	
Document analysis		X		X		X
Estimation	X				X	X
Focus groups			X			
Functional decomposition				X	X	
Interface analysis		X				

Interviews		X		X	X
Item tracking	X				
Lessons learned				X	
Metrics and KPIs		X		X	X
Nonfunctional requirements analysis			X		
Observation		X			X
Organizational modelling					X
Prioritization			X		X
Process analysis			X	X	
Process modelling	X	X	X	X	X
Prototyping		X	X		X
Reviews	X	X			X
Risk analysis and management					X
Root-cause analysis		X			X
Scope modelling		X	X		X
Stakeholder list, map, or personas	X	X		X	X
Survey or questionnaire			X		X
SWOT analysis					X
Use cases and scenarios		X			
User stories		X			
Workshops	X	X	X		X

Other business analysis techniques were included in [Table 9.24](#). Please refer to and review this table as you navigate and learn about the BPM variations on each knowledge area. Make sure you know which techniques might apply to specific knowledge areas and activities on your projects. Let's step through each knowledge area and look at what might need to be done differently for BPM projects.

Business Analysis Planning and Monitoring Planning business analysis work on BPM projects is an exercise in *progressive elaboration*. Continuous improvement activities are also heavily involved as part of this knowledge area. Initially, business analysts focus on analyzing and improving the business process before considering the technology and revised work procedures that are actually required to improve that process.



A common cause of failure for BPM projects or initiatives is the failure to plan for ongoing monitoring of the effects of changes on the organization.

Elicitation and Collaboration Elicitation on BPM projects is effective when it is performed within the defined scope of the project and any affected processes. Process modelling, process maps, and stakeholder analysis are commonly done during requirements elicitation. The business analyst looks at changing and improving an existing process as they gather business analysis information. Managing stakeholders relative to the resulting changes is another aspect of the business analyst's job during elicitation.

Requirements Life Cycle Management BPM and the requirements life cycle may come into conflict during a BPM project. BPM looks at ways to deliver value in a process-focused way, while the generic requirements life cycle is a bit more linear and predictable in nature. Rework, revision, and new requirements can result from BPM project activities. Business processes should be documented so all stakeholders can review and understand them.

Strategy Analysis Strategy Analysis looks at the role of the process in the enterprise value chain. This view may expand the scope of the business analyst's efforts, since any process interacting with the processes affected by the project must be looked at and potentially included in that project's scope. The current state of the enterprise is defined in an as-is value chain before the future state (to-be) value chain is defined.

Requirements Analysis and Design Definition This knowledge area focuses on defining the to-be process model on BPM projects. The requirements architecture will include the process model, associated business rules/decisions, information requirements, and the organizational structure. Solution options on BPM projects typically include any changes needed to support the new or revised process.

Solution Evaluation Solution evaluation activities take place across BPM project life cycles to assess business process performance. Over time, processes are refined based upon the results of these evaluations. Business analysts may find themselves *process mining* using audit trails and transaction logs. The focus is on potential value versus actual value.

Remember that all of these knowledge area tasks and techniques can be modified or left alone on your BPM projects.

Understanding How This Applies to Your Projects

Adjusting what you do and how you do it based upon the type of project you are working on is an essential skill for successful business analysts. Your ability to recognize your project's context and use the correct tasks, techniques, methods, and tools will help keep your business analysis efforts on target and in sync. The five project types or perspectives in the *BABOK® Guide* are a great starting point: agile, business intelligence, information technology, business architecture, and business process management.

Remember that there are many other perspectives or types of projects. Many of my projects included more than one of these perspectives. For example, a project may have an information technology component but is focused on mining and using business data better for decision making as part of the organization's business architecture. Some projects may use multiple development approaches, with agile methods being applied to the web-based aspect of a new system and a more traditional life cycle model being used for the software applications that are "under the covers."

Many perspectives require you to turn on or turn up specific business analysis competencies, such as your collaboration or communication skills. These competencies may be directed at senior management as you work with and for your project sponsor to get things done.

Approaching your business analysis work in the correct context is a win for both you and your project team. The knowledge areas, tasks, and techniques can be customized or tailored to fit the perspectives being used on your project. Remember too, each of the five perspectives includes methods, techniques, tools, and frameworks to help you get the job done.

Summary

You covered a lot of content in this chapter. You learned that business analysis is an essential part of every organization. Successful business analysts bring a serious set of skills and knowledge to every project or initiative in order to liaise among the stakeholders to address business needs and solve business problems. Business analysis is more than just asking questions!

You looked at how the *BABOK® Guide* provides a business analysis framework defining areas of knowledge, associated activities and tasks, and the skills required to perform them. The scope of the *BABOK® Guide* covers pre-project activities, the full project life cycle, and the final solution's operational life. It is also the basis for the CBAP® and CCBA™ certification exams, and it provides the backbone of this book.

Exam Essentials

Be able to list and describe each perspective. The names and high-level descriptions of each of the five perspectives are required knowledge for you as you prepare to take your exam. The five perspectives are agile, business intelligence, information technology, business architecture, and business process management. Be sure you are familiar with how to perform business analysis work on these five different types of projects and work from their differing points of view.

Be able to elaborate on the approaches used with each of the five perspectives. Each perspective offers up its own approach to performing business analysis work. Be sure you know how the perspective can change how things are done on a project. For example, agile approaches focus on interacting with people, transparent communications, and ongoing delivery of value.

Be able to explain the knowledge-area impacts of each perspective. Each perspective impacts how you use the knowledge area tasks and techniques. Remember, different types of initiatives facilitate different types of changes to the business. Make sure you have the right people, the right methods, and the right approach to define what has to be done. Take time to get familiar with these changes and customizations, at least at a high-level.

Be able to recognize the underlying competencies for each perspective that every good business analyst should possess. Each of the five high-level perspectives outlines specific skills that effective business analysts should possess when they work on those types of projects. Be sure that you are comfortable with what it means to be a business analyst and how to successfully navigate the unique skill sets required for each perspective or point of view on your projects.

Key Terms

This chapter introduced the five perspectives from the *BABOK® Guide* that you might find yourself using as a business analyst on your projects and other initiatives. You will need to understand how to add to, customize, and modify the contents of the *BABOK® Guide* in order to be an effective business analyst for these specific types of project. Additionally, you will need to know each perspective by name and definition in order to be successful on the CBAP® or CCBA™ exams.

You have learned many new key words in this chapter. The IIBA has worked hard to develop and define standard business analysis terms that can be used across many industries. Here is a list of some of the key terms that you encountered in this chapter:

- blueprints
- BPM drivers
- BPM frameworks
- business intelligence
- business process management (BPM)
- iteration
- process mining
- professional detachment
- progressive elaboration
- separation of concerns principle
- transparency

Review Questions

1. According to the *BABOK® Guide*, perspectives are used within business analysis work to provide focus to tasks and techniques specific to the context of the initiative. The five common perspectives include all of the following *except*:
 - A. Business architecture
 - B. Information technology
 - C. Enterprise architecture
 - D. Business intelligence
2. All of the following statements about the five business analysis perspectives are true *except*:
 - A. Perspectives are not mutually exclusive since a given initiative may use more than one perspective.
 - B. Knowledge areas are applied the same way regardless of the perspective being used.
 - C. Perspectives do not represent all possible ways to perform business analysis.
 - D. Many methodologies, approaches, and techniques are unique to a particular perspective.
3. Business analysis work is performed _____ throughout an agile initiative and relies heavily on _____ skills.
 - A. Intermittently, technical
 - B. Continuously, technical
 - C. Intermittently, interpersonal
 - D. Continuously, interpersonal
4. During agile initiatives, scope is constantly evolving. Change and rapid response to change are expected. What method is used to manage the ongoing refinements and redefinition of the project scope?
 - A. Kanban backlog list
 - B. Retrospectives
 - C. Storyboarding
 - D. Planning workshops
5. You are a business analyst working on an agile project. Who is the key stakeholder that you need to have involved with the project from the beginning, providing continuous feedback to the team and adjusting the product as needs change?

- A. Agile team leader
 - B. Product owner
 - C. Project sponsor
 - D. Domain SME
6. Who can perform business analysis activities on agile teams?
- A. Business analyst working on the team
 - B. Customer representative or product owner
 - C. Both of the above
 - D. None of the above
7. The focus of business intelligence is the transformation of data into _____ information to support business decision making.
- A. Value-added
 - B. Reliable
 - C. Tactical
 - D. Strategic
8. You are working on a business intelligence project targeting timely, accurate, high value, and actionable information driving decision making across the organization. One focus of your project is customer engagement. What level of decision-making processes are you targeting?
- A. Tactical
 - B. Strategic
 - C. Operational
 - D. External
9. What is the business analyst's primary role on a business intelligence initiative?
- A. Designing ad hoc queries
 - B. Designing specialized presentations
 - C. Enterprise data or decision modelling
 - D. Liaison between stakeholders and solution providers
10. You are a business analyst capturing and documenting as-is and to-be business processes for your business process management project. What role are you performing?
- A. Process modeller
 - B. Process analyst
 - C. Process designer
 - D. Process architect

11. You are a business analyst applying statistical analysis methods to historical data to identify patterns and make predictions about future events. Your focus is on pattern recognition through data mining, predictive modelling, forecasting, and condition-driven alerts. What type of data analytics are you developing requirements for?
 - A. Prescriptive analytics
 - B. Translation analytics
 - C. Predictive analytics
 - D. Descriptive analytics
12. Business analysts working in an information technology environment consider their tasks in light of three factors. What are these three factors?
 - A. Solution scope, organizational structure, and change scope
 - B. Solution impact, organizational maturity, and design options
 - C. Solution scope, organizational maturity, and change scope
 - D. Solution impact, organizational maturity, and change scope
13. You are a business analyst working on an information technology project. Your project is using a waterfall life cycle model to drive the development efforts. What solution development methodology is being used?
 - A. Iterative
 - B. Adaptive
 - C. Predictive
 - D. Incremental
14. You are a business analyst working on a project with a predictive development methodology focusing on established logical modelling and the separation of requirements from solutions. Which of the four information technology methodologies are you using?
 - A. Homegrown/organization specific
 - B. Requirements engineering (RE)
 - C. Structured systems and design method (SSADM)
 - D. Unified process (UP)
15. You are eliciting business requirements for an information technology project using statistical methods and mockups to identify user needs. Which method are you applying in your elicitation efforts?
 - A. Investigation
 - B. Simulation
 - C. Experimentation
 - D. Collaboration

6. Business architecture provides architectural descriptions and views to provide a common understanding of the organization for the purpose of aligning strategic objectives with tactical demands. What is another name for these views?
- A. Blueprints
 - B. Models
 - C. Structures
 - D. Concerns
7. For each blueprint you have created on your project, you are defining the current state, the future state, and one or more transition states that are used to transition to the future state. This provides insight and an understanding of how well the organization aligns to its strategy and is a _____ for change.
- A. Baseline
 - B. Proposal
 - C. Request
 - D. Trigger
8. All of the listed factors are central to a successful business architecture *except*:
- A. Support of the executive business leadership team
 - B. Integration with clear, effective governance processes
 - C. View of the entire organization that is under analysis
 - D. Integration with ongoing organizational initiatives
9. Which of the five perspectives focuses on how the organization performs work to deliver value across multiple functional areas to customers and stakeholders?
- A. Business intelligence perspective
 - B. Information technology perspective
 - C. Business process management perspective
 - D. Business architecture perspective
10. You are a business analyst on a business process management project collecting data from the processes. Which life cycle activity are you performing?
- A. Designing
 - B. Modelling
 - C. Execution/Monitoring
 - D. Optimizing

Appendix A

Advice on Completing Your Exam Application

TOPICS COVERED IN THIS APPENDIX:

- ✓ **Describe the competency-based model for business analysis certification.**
- ✓ **Discuss experience requirements for the CBAP® and CCBA™ exams.**
- ✓ **Calculate your hours of business analysis experience.**
- ✓ **Review additional exam eligibility requirements.**
- ✓ **Navigate the steps of the exam application process.**



This appendix steps you through the four-level competency-based model for business analysis certification. It also helps you understand the application requirements for the Certified Business Analysis Professional (CBAP®) or Certification of Competency in Business Analysis™ (CCBA™) credentials. The focus of this appendix is on the CCBA™ and CBAP® exams. It provides suggestions for completing your application correctly to minimize the chances of errors and application approval delays.

There are specific experience and eligibility requirements that will be used to evaluate your fitness for taking the CBAP® or CCBA™ exam. Both certifications require work experience as a business analyst. Both certifications ask you to meet or exceed the same non-work-related requirements, such as education and professional development. In this appendix, you will look at the unique experience requirements for each exam and then review the common set of four eligibility requirements that apply for both exams.

The Competency-Based Certification Model

The multilevel, competency-based certification model offers four certifications to business analysts. The model was designed to recognize the Business Analysis (BA) professional through their career progression and to support more opportunities for growth and development. CCBA™ and CBAP® certifications will map to levels 2 and 3, respectively, in this multilevel enhanced certification program. These two levels are considered the global standard of practice for business analysts.

[Table A.1](#) summarizes each business analysis certification level.

TABLE A.1 Business analysis certification levels

Level	Acronym	Name	Exam Type	Description
1	ECBA™	Entry Certificate in Business Analysis	Exam-based	Recognizes a person's entry into the business analysis profession
2	CCBA™	Certification of Capability in Business Analysis	Exam-based	Requires 2 to 3 years of business analysis experience and 3,000 to 4,500 hours of work experience and is also exam based
3	CBAP®	Certified Business Analysis Professional	Exam-based	Requires more than 5 years of business analysis experience and 7,500 to 10,500 hours of work experience
4	CBATL™	Certified Business Analysis Thought Leader	Assessment-based	Requires more than 10 years of business analysis experience. Applicants are industry thought leaders, give back to the BA community, and contribute to the evolution of the BA practice. Level 4 requires a minimum of 15,000 hours, and is assessment based.

Now let's step through the detailed requirements for CBAP® and CCBA™ certification, which are the focus of this book.

CBAP® Experience Requirements

The CBAP® designation is available to experienced business analysts.

Applicants who want to take the CBAP® certification exam must meet specific experience and education requirements. During the application process, you must demonstrate your competencies across the spectrum of business analysis knowledge and skills. After your application has been reviewed and accepted, you will be eligible to take and pass your certification exam. [Table A.2](#) summarizes the experience-specific requirements for you.

TABLE A.2 Experience requirements for the CBAP® certification exam

Requirement	Description
Work experience	Minimum of 7,500 hours of business analysis work experience aligned with the <i>BABOK® Guide</i> in the last 10 years
Knowledge areas	Minimum of 900 hours of business analysis work in each of four knowledge areas, totaling at least 3,600 hours

Let's take a closer look at the experience requirements needed to qualify for taking the CBAP® exam:

Work Experience You must possess a minimum of 7,500 hours of business analysis work experience aligned with the *BABOK® Guide* in the last 10 years of your work life. The timeframe is measured backward from the date of your application. You can calculate that 7,500 hours of work equals about 5 full years of business analysis work experience during that 10-year period, or doing business analysis stuff about half of the time.

The work experience can be you directly performing the business analysis tasks (hands on) or time you spent coaching or mentoring others in performing those tasks. Conducting business analysis training and performing project management activities on your projects are not acceptable experiences to include in your application. Be careful to select and provide experiences in your application that are aligned with the *BABOK® Guide* and that are specific business analysis tasks.

Knowledge Areas You must demonstrate business analysis experience and expertise in four of the six knowledge areas. You must show a minimum of 900 hours of business analysis experience and expertise in each knowledge area you choose to document. This means that you engaged in tasks specifically related to the *BABOK® Guide* knowledge areas, so make sure that you review them carefully relative to the work you have performed. The 900 hours in each of four knowledge areas make up 3,600 hours of your business analysis experience.

This is a minimum requirement; it is just fine if you have experience across all six of the knowledge areas. Actually, the more experience you document in your application, the better off you will be. This approach provides a buffer in case some of your experience is disqualified during your application's review cycle, so

your application process won't be jeopardized.

If the contents of your application do not support compliance with both of the two experience requirements, your application will be declined. If you don't meet the experience requirements for the CBAP® certification, you might want to consider applying for the CCBA™ credential.

CCBA™ Experience Requirements

The CCBA™ designation is available to less-experienced business analysts. Although the experience requirements are less than those required for taking the CBAP® certification exam, they are reviewed and enforced with equal vigor. Applicants who want to take the CCBA™ certification exam must meet specific experience and education requirements. During the application process, you must demonstrate your competencies across the spectrum of business analysis knowledge and skills. After your application has been reviewed and accepted, you will then be eligible to take your certification exam. [Table A.3](#) summarizes the exam eligibility requirements.

TABLE A.3 Experience requirements for the CCBA™ certification exam

Requirement	Description
Work experience	Minimum of 3,750 hours of business analysis work experience aligned with the <i>BABOK® Guide</i> in the last 7 years
Knowledge areas	Minimum of 900 hours of business analysis work in each of two of knowledge areas, or 500 hours in each of four knowledge areas

Let's take a closer look at the work experience required to take the CCBA™ exam.

Work Experience You must possess a minimum of 3,750 hours of business analysis work experience aligned with the *BABOK® Guide* in the last 7 years of your work life. The timeframe is measured backward from your application date. Again, you can calculate that 3,750 hours of work equals about 2.5 full years of business analysis work experience during that 7-year period, or doing business analysis stuff close to one-third of the time.

Your work experience can be you directly performing the business analysis tasks (hands on) or time you spent coaching or mentoring others in performing those tasks. Conducting business analysis training and performing project management activities on your projects are not acceptable experiences to include in your application. Be careful to select and provide experiences in your application that are aligned with the *BABOK® Guide* and that are specific business analysis tasks.

Knowledge Areas You must demonstrate a minimum of 900 hours of business analysis experience and expertise each in two of the six knowledge areas or 500 hours each in four of the six knowledge areas. This means that you engaged in tasks specifically related to the *BABOK® Guide* knowledge areas, so make sure that you review them carefully relative to the work you have performed. The 900 hours in each of two knowledge areas makes up 1,800 hours of your business analysis experience, while the 500 hours in each of four areas accounts for 2,000 hours of the required 3,750 hours.

These are minimum requirements; it is just fine if you have experience across all six knowledge areas. Actually, the more experience you document in your application, the better off you will be. This approach will provide a buffer in case some of your experience is disqualified during your application's review cycle, so your application process won't be jeopardized.

If the contents of your application do not comply with both of the two experience requirements, your application will be declined. In addition to the work experience requirements for taking either exam, you must meet some additional requirements to qualify to take either exam. Let's review those requirements now.

Calculate Your Experience Hours

The *BABOK® Guide* provides explicit instructions about how to calculate the required hours of business analysis work experience for your application. You should use your résumé as the basis for your listed projects, the business analysis activities you performed, and the time you spent doing them. However, you cannot submit your résumé to meet the experience requirement—you must parse through its contents in detail and provide the International Institute of Business Analysis (IIBA) with a detailed list of projects, work activities, and hours spent. One helpful suggestion is to build a spreadsheet to track everything by project, knowledge area, and time. Then you can use your spreadsheet summary to complete the experience section of your application.

As previously mentioned, you need to document a minimum of 7,500 experience hours for your CBAP® application and 3,750 hours for your CCBA™ application. These totals are the minimum experience requirements. It is a really good idea to document additional hours above the minimum requirement (if you have them). If the IIBA reviewers disapprove part of your experience hours, the additional hours can prevent the disapproval from impacting your application process.

You need to list your projects in chronological order, starting with the most recent project you worked on or are working on as of your application date and then working backward. If you performed business analysis activities on a bunch of small projects during any particular year, combine them into one project and make sure to point out that you did this in the description of the large project that encompassed the smaller ones.

If you are completing an online application, you will be able to select from a set of business analysis tasks that you performed to achieve the stated number of work hours. Read the tasks you are selecting from carefully. Do not select tasks from the lists that are project management tasks or general management work. Everything you enter for work experience must be business analysis work and align with the contents of version 3 of the *BABOK® Guide*. If you select tasks that are not business analysis tasks within the scope of the *BABOK® Guide*, those tasks and their associated hours will be deducted from your total hours.

CBAP® applicants must also meet the minimum requirement of 900 experience hours each in four of the six knowledge areas. CCBA™ applicants have a lesser experience requirement, and they can slice and dice their business analysis experience in one of two ways, showing either:

- A minimum of 900 hours of business analysis work each in two of the six knowledge areas
- A minimum of 500 hours of business analysis work each in four of the six knowledge areas

For each project, from the list of tasks in the table, check off the tasks you have

completed that are aligned with the *BABOK® Guide* 3.0. Do this for each of the knowledge areas. You can select a task when you have either performed the task yourself or coached/mentored another business analyst in performing the task. For each knowledge area, indicate the percentage of the total business analysis hours you spent on the tasks you selected. The percentages across all of the knowledge areas must total 100 within a project.

Several steps need to be taken to calculate your experience hours for each of your documented projects and each knowledge area. For each knowledge area specified for a particular project, the percentage of time you say that you spent on that knowledge area is multiplied by the total business analysis hours you entered for the project. Likewise, the percentage of invalid experience you selected from the list of tasks for your project is calculated and deducted. The tasks you select from are provided by the IIBA for you in your application form.

Once the experience hours for each knowledge area are calculated for each project, they are summarized in two ways.

- By knowledge area across all of your projects to see whether you meet the minimum knowledge area requirements for the exam
- Total hours across all projects to see whether you meet the experience minimum requirement to take the exam

Both the total experience hours and the knowledge area experience hours must be met for your application to be considered. If one or both of these requirements falls short, your application will be declined. You will not be allowed to apply again for another three months.

Additional Exam Eligibility Requirements

To apply for and be approved to take either the CBAP® or CCBA™ certification exam, applicants must meet four additional requirements relating to education, professional development, professional references, and code of conduct. [Table A.4](#) summarizes these additional requirements.

TABLE A.4 Additional exam eligibility requirements

Requirement	Description
Education	A high school or equivalent level of education
Professional development	Minimum of 21 hours of professional development, such as attending a training course, in the past four years
References	Two references from a career manager, client (internal or external), or a CBAP® recipient
Code of conduct	A signed code of conduct

Education You must possess a high school education or its equivalent to take the CBAP® or CCBA™ exam. If you have one or more college or university degrees, you can document them as well. Unlike other professional certification exams, there is no reduction in your work experience requirements for any additional post-secondary education.

Professional Development You also have a requirement to document 21 hours of professional development in the last four years. The professional development must be directly related to business analysis, such as one or more instructor-led training courses. Each hour of class time counts toward 1 hour of professional development time. This professional development must be completed prior to your application date, so if you are planning to take a training course on business analysis as part of your exam preparations, finish that course before you apply.

References As part of your application, you must provide two professional references. One of those references needs to be current. These references might be from a career manager, a client (internal or external), or a CBAP® recipient. Be aware that a project manager can be used as a reference only if they were also the career manager responsible for completing your annual performance review. You must have known each of these individuals for a minimum of six months.

You will be asking your references to indicate that you are a suitable candidate for the CBAP® or CCBA™ certification. Each reference will receive an email message containing a recipient-specific link for them to use to complete a CBAP® or CCBA™ candidate reference form online.

Signed Code of Conduct You will be asked to complete and sign a code of conduct form in order to apply to take the CBAP® or CCBA™ exam. This is the

same form you are asked to complete when you become a member of the IIBA®. This form contains your agreement to act ethically, responsibly, and professionally in your business analysis work.

Exam Spotlight

Review the current CBAP® or CCBA™ handbooks located on the IIBA website for complete and up-to-date information on application criteria, fees, and specific details on how to apply. This information can change without warning, and the data provided to you here may no longer be up-to-date.

Review your application contents thoroughly before submitting your application. Aligning your business analysis work experience with the contents of the *BABOK® Guide* in your application is one small step in starting your exam preparation. Completing the application can be quite time-consuming, so plan to put your materials together in several sittings over a number of days. You can complete your online application contents incrementally and save your work as you go.

Prepare your application content as if your data is going to be audited—it just might be. Many exam candidates are randomly audited to verify and validate their work experience and any other information that they provided in their application.

Now that you have reviewed the experience requirements for applying to sit the CBAP® or CCBA™ certification exams, let's review the exam application process.

The Exam Application Process

There are three distinct steps for you to navigate as you apply for and seek approval to take the CBAP® or CCBA™ certification exam. Remember that you must meet all of the requirements in either the *CCBA™ Handbook* or *CBAP® Handbook* to be eligible for the exam. The following are the steps of the application process:

1. Apply and pay for CBAP® or CCBA™ certification.
2. Pay for the exam.
3. Register for the exam.

Let's take a more detailed look at each of these steps right now.

Applying and Paying for Certification You will be asked to pay two fees to the IIBA to complete the application process. The first fee is submitted with your completed application and supporting information. Please check the IIBA website for the latest application and examination fee information. The application fee is the same for IIBA members and nonmembers. The fee will not be refunded if your application is denied. Your certification application package should contain the following items:

- Your completed application form
- Your two professional references
- Your agreement to adhere to the Code of Ethical Conduct and Professional Standards
- Your certification application fee

After you submit everything, the IIBA will send you an email message indicating your application has been successfully submitted. Your application will be reviewed and either approved or denied within 21 business days of its receipt. If your application is approved, you are eligible to take your exam within one year from the date of exam eligibility approval.

Exam Spotlight

Remember to print a paper copy of your completed online application for your own records.

If your application is denied, you are not eligible to take the exam at this time. You will be notified of the reason why your application was declined. In many cases, applicants have had work experience disallowed and have fallen below the minimum experience requirement threshold. You may reapply to take the exam after three months if your reason for denial can be remedied.

Paying for the Exam The exam fee pays for your initial exam sitting after your application has been approved. This fee is not reimbursed if you fail the exam. You can include your exam fee with your application package, or you can wait until you receive the results of your application and pay at that time. Please check the IIBA website for the latest examination fee information. To receive the IIBA member rate for your exam fee, you must be a member at the time you submit your exam fee.

Registering for the Exam Once your exam fee has been processed by the IIBA, you can register to take your exam at a dedicated test center or as part of a hosted group. Check the IIBA website for a current list of test center locations. Castle Worldwide will send you an exam registration letter with instructions for registering online for your exam. After you register for your selected location, date, and time, you will receive a confirmation letter that is your admission ticket to take the exam.

If you fail your exam on your first attempt, you may pay a retake fee and can retake the exam after three months. This waiting period must fall within your original year of exam eligibility. You may retake the exam twice during your eligible testing year. If you fail both retake attempts or your eligibility expires, you must reapply to take the exam and pay the full fee again.

Appendix B

Knowledge Areas, Tasks, and Elements

TOPICS COVERED IN THIS APPENDIX:

- ✓ Define the terms knowledge area, task, and element.**
- ✓ Review the six knowledge areas.**
- ✓ Outline the tasks and elements of each knowledge area.**



This appendix outlines the six *BABOK® Guide* knowledge areas, their tasks, and the elements making up those tasks. This appendix is intended to be used as an orientation device and a study aid as you prepare for your CBAP® or CCBA™ certification exam. This appendix also summarizes the intent of each knowledge area so you can refresh your memory and practice describing them.

Review the Six Knowledge Areas

Knowledge areas divide what business analysts need to know and how they perform their tasks into six common buckets. The business analyst can dip into one or more buckets at any time—in any order—to select a deliverable or perform a necessary task. The knowledge areas are not a road map or a methodology; they simply break business analysis materials and information into common areas. The six knowledge areas defined in the *BABOK® Guide* are:

- Business Analysis Planning and Monitoring
- Elicitation and Collaboration
- Requirements Life Cycle Management
- Strategy Analysis
- Requirements Analysis and Design Definition
- Solution Evaluation

Each knowledge area is decomposed into the more-detailed tasks business analysts perform. Each task has a particular purpose and adds value to the overall business analysis effort on a project when a business analyst performs the task.

Tasks are broken down further into elements. Elements are the detailed concepts that are necessary to perform a particular task. For some tasks, the elements are categories of things a business analyst must consider. For other tasks, the elements are subtasks a business analyst performs.

Business Analysis Planning and Monitoring The Business Analysis Planning and Monitoring knowledge area is where a business analyst plans how to approach the business analysis effort. The approach is a set of processes, templates, and activities used to perform business analysis in a specific context. The tasks organize and coordinate the performance of all other business analysis tasks. These planning and monitoring activities take place throughout the project life cycle. The results of this knowledge area guide the tasks found in the remaining five knowledge areas and set the performance metrics business analysts use to evaluate all business analysis work.

Elicitation and Collaboration Elicitation and Collaboration defines how business analysts work with stakeholders to identify and gather requirements and understand stakeholder needs and concerns. It also addresses ongoing collaboration and communication during all business analysis activities.

Requirements Life Cycle Management The Requirements Life Cycle Management knowledge area defines how business analysts approach managing and maintaining requirements and design information across the project or product life cycle. Establishing traceability between requirements and designs also takes place. It also describes tasks and techniques for communicating and managing changes, conflicts, and issues related to requirements.

Strategy Analysis Strategy Analysis focuses on how a business analyst identifies the business needs driving a project by performing problem definition and analysis. In addition to defining and refining these strategic or tactical needs, a business analyst is responsible for defining a feasible solution scope that the business can implement. This work may also include developing a business case or feasibility study for a proposed project. Typically, the tasks in this knowledge area occur prior to or early in the project life cycle.

Requirements Analysis and Design Definition Requirements Analysis and Design Definition describes how business analysts progressively elaborate to define, refine, and prioritize requirements. In essence, a business analyst takes the elicited information and makes sense of it to derive the real requirements for the project. This knowledge area also focuses on graphically modelling the requirements and resulting designs as well as documenting them. When performing these tasks, a business analyst should ensure the feasibility of the requirements while defining, describing, and refining the characteristics of an acceptable solution.

Solution Evaluation The Solution Evaluation knowledge area focuses on assessing and validating proposed, in-progress, and implemented solutions before, during, and after the project life cycle. A business analyst's attention is on the solution's value to the enterprise. While many tasks in this knowledge area take place later in the project life cycle, some solution-focused activities might occur quite early.

Let's decompose each knowledge area into its tasks and elements. You can use these outlines to help you prepare to take your certification exam. You will need this level of knowledge to successfully prepare for and pass the certification exams. You will also need this level of knowledge to be an effective business analysis practitioner in your organization.

Knowledge Areas, Tasks, and Elements

The following outline decomposes each knowledge area into its pieces and parts—the tasks and elements that provide you with more detailed direction as to what you should be doing.

Business Analysis Planning and Monitoring

Plan business analysis approach

Planning approach

Formality and level of detail of business analysis deliverables

Business analysis activities

Timing of business analysis work

Complexity and risk

Acceptance

Plan stakeholder engagement

Perform stakeholder analysis

Define stakeholder collaboration

Stakeholder communication needs

Plan business analysis governance

Decision making

Change control process

Plan prioritization approach

Plan for approvals

Plan business analysis information management

Organization of business analysis information

Level of abstraction

Plan traceability approach

Plan for requirements reuse

Storage and access

Requirements attributes

Identify business analysis performance improvements

Performance analysis

Assessment measures

Analyze results

Recommend actions for improvement

Elicitation and Collaboration

Prepare for elicitation

Understand the scope for elicitation

Select elicitation techniques

Set up logistics

Secure supporting material

Prepare stakeholders

Conduct elicitation

Guide elicitation activity

Capture elicitation outcomes

Confirm elicitation results

Compare elicitation results against source information

Compare elicitation results against other elicitation results

Communicate business analysis information

Determine objectives and format of communication

Communicate business analysis package

Manage stakeholder collaboration

Gain agreement on commitments

Monitor stakeholder engagement

Collaboration

Requirements Life Cycle Management

Trace requirements

Level of formality

Relationships

Traceability repository

Maintain requirements

Maintain requirements

Maintain attributes

Reusing requirements

Prioritize requirements

Basis for prioritization

Challenges of prioritization

Continual prioritization

Assess requirements changes

Assessment formality

Impact analysis

Impact resolution

Approve requirements

Understand stakeholder roles

Conflict and issue management

Gain consensus

Track and communicate approval

Strategy Analysis

Analyze current state

Business needs

Organizational structure and culture

Capabilities and processes

Technology and infrastructure

Policies

Business architecture

Internal assets

External influencers

Define future state

Business goals and objectives

Scope of solution space

Constraints

Organizational structure and culture

Capabilities and processes

Technology and infrastructure

Policies

Business architecture

Internal assets

Identify assumptions

Potential value

Assess risks

Unknowns

Constraints, assumptions, and dependencies

- Negative impact to value
- Risk tolerance
- Recommendation
- Define change strategy
 - Solution scope
 - Gap analysis
 - Enterprise readiness assessment
 - Change strategy
 - Transition states and release planning
- Requirements Analysis and Design Definition
 - Specify and model requirements
 - Model requirements
 - Analyze requirements
 - Represent requirements and attributes
 - Implement the appropriate levels of abstraction
 - Verify requirements
 - Characteristics of requirements and designs quality
 - Verification activities
 - Checklists
 - Validate requirements
 - Identify assumptions
 - Define measurable evaluation criteria
 - Evaluate alignment with solution scope
 - Define requirements architecture
 - Requirements viewpoints and views
 - Template architectures
 - Completeness
 - Relate and verify requirements relationships
 - Business analysis information architecture
 - Define design options
 - Define solution approaches
 - Identify improvement opportunities
 - Requirements allocation
 - Describe design options

Analyze potential value and recommend solution

- Expected benefits

- Expected costs

- Determine value

- Assess design options and recommended solutions

Solution Evaluation

Measure solution performance

- Define solution performance measures

- Validate performance measures

- Collect performance measures

Analyze performance measures

- Solution performance versus desired value

- Risks

- Trends

- Accuracy

- Performance variances

Assess solution limitations

- Identify internal solution component dependencies

- Investigate solution problems

- Impact assessment

Assess enterprise limitations

- Enterprise culture assessment

- Stakeholder impact analysis

- Organizational structure changes

- Operational assessment

Recommend actions to increase solution value

- Adjust solution performance measures

- Recommendations

Appendix C

Mapping Techniques, Stakeholders, and Deliverables to Knowledge Areas and Tasks

TOPICS COVERED IN THIS APPENDIX:

- ✓ **Mapping techniques to knowledge area tasks**
- ✓ **Mapping stakeholders to knowledge area tasks**
- ✓ **Mapping deliverables to knowledge area tasks**



This appendix provides you with a coverage matrix that maps the business analysis techniques, deliverables, and stakeholders to the knowledge area tasks that use them in some way. You can use this matrix to keep yourself oriented during your exam preparation studies as you work through the knowledge areas and tasks. These relationships can also be used to help you determine whether to use a specific deliverable or apply a certain technique when performing a business analysis task at work.

Techniques

The tables in this section ([Tables C.1](#) through [C.7](#)) list and then map the business analysis techniques to the knowledge area tasks that might use them. The references being used are the knowledge area chapter and the task section numbers of the *BABOK® Guide*. An *X* indicates that a specific technique might be used by a business analyst performing a particular task.

For example, column header 3.1 references the first task in Chapter 3, “Plan the Business Analysis Approach (Section 1),” as part of the Business Analysis Planning and Monitoring knowledge area (Chapter 3). The far-left column in the table provides you with the chapter and section number for locating the details about a specific technique.

For a more comprehensive view of this data, see the Techniques sheet in the BABOKTechniquesMap.xlsx file, available for download at www.wiley.com/go/Sybextestprep. For your reference, [Table C.1](#) lists all the techniques found in the *BABOK® Guide*.

TABLE C.1 Master list of *BABOK® Guide* techniques

10.1	Acceptance and Evaluation Criteria
10.2	Backlog Management
10.3	Balanced Scorecard
10.4	Benchmarking and Market Analysis
10.5	Brainstorming
10.6	Business Capability Analysis
10.7	Business Cases
10.8	Business Model Canvas
10.9	Business Rules Analysis
10.10	Collaborative Games
10.11	Concept Modelling
10.12	Data Dictionary
10.13	Data Flow Diagrams
10.14	Data Mining
10.15	Data Modelling
10.16	Decision Analysis
10.17	Decision Modelling
10.18	Document Analysis
10.19	Estimation
10.20	Financial Analysis

10.21	Focus Groups
10.22	Functional Decomposition
10.23	Glossary
10.24	Interface Analysis
10.25	Interviews
10.26	Item Tracking
10.27	Lessons Learned
10.28	Metrics and Key Performance Indicators (KPIs)
10.29	Mind Mapping
10.30	Nonfunctional Requirements Analysis
10.31	Observation
10.32	Organizational Modelling
10.33	Prioritization
10.34	Process Analysis
10.35	Process Modelling
10.36	Prototyping
10.37	Reviews
10.38	Risk Analysis and Management
10.39	Roles and Permissions Matrix
10.40	Root Cause Analysis
10.41	Scope Modelling
10.42	Sequence Diagrams
10.43	Stakeholder List, Map, or Personas
10.44	State Modelling
10.45	Survey or Questionnaire
10.46	SWOT Analysis
10.47	Use Cases and Scenarios
10.48	User Stories
10.49	Vendor Assessment
10.50	Workshops

TABLE C.2 Business Analysis Planning and Monitoring techniques

Section	Technique	3.1	3.2	3.3	3.4	3.5
10.5	Brainstorming	X	X	X	X	X
10.7	Business Cases	X				
10.9	Business Rules Analysis		X			

10.18	Document Analysis	X	X	X		
10.19	Estimation	X				
10.20	Financial Analysis	X				
10.22	Functional Decomposition	X				
10.25	Interviews	X	X	X	X	X
10.26	Item Tracking	X		X	X	X
10.27	Lessons Learned	X	X	X	X	X
10.28	Metrics and Key Performance Indicators (KPIs)					X
10.29	Mind Mapping		X		X	
10.31	Observation					X
10.32	Organizational Modelling		X	X		
10.34	Process Analysis					X
10.35	Process Modelling	X	X	X	X	X
10.36	Prototyping					
10.37	Reviews	X		X		X
10.38	Risk Analysis and Management	X	X			X
10.40	Root Cause Analysis					X
10.41	Scope Modelling	X	X			
10.43	Stakeholder List, Map, or Personas		X			
10.45	Survey or Questionnaire	X	X	X	X	X
10.50	Workshops	X	X	X	X	X

TABLE C.3 Elicitation and Collaboration techniques

Section	Technique	4.1	4.2	4.3	4.4	4.5
10.4	Benchmarking and Market Analysis	X				
10.5	Brainstorming	X	X			
10.9	Business Rules Analysis	X				
10.10	Collaborative Games	X			X	
10.11	Concept Modelling	X				
10.14	Data Mining	X	X			
10.15	Data Modelling		X			
10.18	Document Analysis	X	X	X		
10.19	Estimation	X				
10.21	Focus Groups		X			
10.24	Interface Analysis		X			

10.25	Interviews	X	X	X	X	
10.27	Lessons Learned					X
10.29	Mind Mapping	X	X			
10.31	Observation		X			
10.34	Process Analysis		X			
10.35	Process Modelling		X			
10.36	Prototyping		X			
10.37	Reviews			X	X	
10.38	Risk Analysis and Management	X				X
10.43	Stakeholder List, Map, or Personas	X				X
10.45	Survey or Questionnaire		X			
10.50	Workshops		X	X	X	

TABLE C.4 Requirements Life Cycle Management techniques

Section	Technique	5.1	5.2	5.3	5.4	5.5
10.1	Acceptance and Evaluation Criteria					X
10.2	Backlog Management			X		
10.7	Business Cases			X	X	
10.9	Business Rules Analysis	X	X			X
10.13	Data Flow Diagrams		X			
10.15	Data Modelling		X			
10.16	Decision Analysis			X	X	X
10.18	Document Analysis		X		X	
10.19	Estimation			X	X	
10.20	Financial Analysis			X	X	
10.22	Functional Decomposition	X	X			
10.24	Interface Analysis					X
10.25	Interviews			X	X	
10.26	Item Tracking			X	X	X
10.33	Prioritization				X	
10.34	Process Analysis					
10.35	Process Modelling	X	X			
10.37	Reviews					X
10.38	Risk Analysis and Management			X	X	
10.41	Scope Modelling	X				
10.47	Use Cases and Scenarios		X			

10.48	User Stories	X			
10.50	Workshops		X	X	X

TABLE C.5 Strategy Analysis techniques

Section	Technique	6.1	6.2	6.3	6.4
10.1	Acceptance and Evaluation Criteria		X		
10.3	Balanced Scorecard		X		X
10.4	Benchmarking and Market Analysis	X	X		X
10.5	Brainstorming		X	X	X
10.6	Business Capability Analysis	X	X		X
10.7	Business Cases	X	X	X	X
10.8	Business Model Canvas	X	X		X
10.11	Concept Modelling	X			
10.14	Data Mining	X			
10.16	Decision Analysis		X	X	X
10.17	Decision Modelling		X		
10.18	Document Analysis	X		X	
10.19	Estimation				X
10.20	Financial Analysis	X	X	X	X
10.21	Focus Groups	X			X
10.22	Functional Decomposition	X	X		X
10.25	Interviews	X	X	X	X
10.26	Item Tracking	X			
10.27	Lessons Learned	X	X	X	X
10.28	Metrics and Key Performance Indicators (KPIs)	X	X		
10.29	Mind Mapping	X	X	X	X
10.31	Observation	X			
10.32	Organizational Modelling	X	X		X
10.34	Process Analysis	X			
10.35	Process Modelling	X	X		X
10.36	Prototyping			X	
10.38	Risk Analysis and Management	X		X	
10.40	Root Cause Analysis	X		X	
10.41	Scope Modelling	X	X		X
10.45	Survey or Questionnaire	X	X	X	
10.46	SWOT Analysis	X	X		X

10.49	Vendor Assessment	X	X		X
10.50	Workshops	X	X	X	X

TABLE C.6 Requirements Analysis and Design Definition techniques

Section	Technique	7.1	7.2	7.3	7.4	7.5	7.6
10.1	Acceptance and Evaluation Criteria	X	X	X			X
10.2	Backlog Management						X
10.4	Benchmarking and Market Analysis					X	
10.5	Brainstorming					X	X
10.6	Business Capability Analysis	X					
10.7	Business Cases						X
10.8	Business Model Canvas	X					X
10.9	Business Rules Analysis	X					
10.11	Concept Modelling	X					
10.12	Data Dictionary	X					
10.13	Data Flow Diagrams	X					
10.15	Data Modelling	X			X		
10.16	Decision Analysis						X
10.17	Decision Modelling	X					
10.18	Document Analysis			X		X	
10.19	Estimation						X
10.20	Financial Analysis			X			X
10.21	Focus Groups						X
10.22	Functional Decomposition	X			X		
10.23	Glossary	X					
10.24	Interface Analysis	X					
10.25	Interviews				X	X	X
10.26	Item Tracking		X	X			
10.27	Lessons Learned						X
10.28	Metrics and Key Performance Indicators (KPIs)		X	X			X
10.29	Mind Mapping						X
10.30	Nonfunctional Requirements Analysis	X					
10.32	Organizational Modelling	X			X		
10.35	Process Modelling	X					
10.36	Prototyping	X					

10.37	Reviews	X	X			
10.38	Risk Analysis and Management		X			X
10.39	Roles and Permissions Matrix	X				
10.40	Root Cause Analysis	X			X	
10.41	Scope Modelling	X		X		
10.42	Sequence Diagrams	X				
10.43	Stakeholder List, Map, or Personas	X				
10.44	State Modelling	X				
10.45	Survey or Questionnaire			X	X	
10.46	SWOT Analysis					X
10.47	Use Cases and Scenarios	X				
10.48	User Stories	X				
10.49	Vendor Assessment				X	
10.50	Workshops			X	X	X

TABLE C.7 Solution Evaluation techniques

Section	Technique	8.1	8.2	8.3	8.4	8.5
10.1	Acceptance and Evaluation Criteria	X	X	X		
10.4	Benchmarking and Market Analysis	X	X	X	X	
10.5	Brainstorming				X	
10.7	Business Cases	X				
10.9	Business Rules Analysis			X		
10.14	Data Mining	X	X	X	X	X
10.15	Data Modelling					
10.16	Decision Analysis	X		X	X	X
10.18	Document Analysis				X	
10.20	Financial Analysis					X
10.21	Focus Groups	X				X
10.25	Interviews		X	X	X	
10.26	Item Tracking			X	X	
10.27	Lessons Learned			X	X	
10.28	Metrics and Key Performance Indicators (KPIs)	X	X			
10.30	Nonfunctional Requirements Analysis	X				
10.31	Observation	X	X		X	
10.32	Organizational Modelling				X	X

10.33	Prioritization				X
10.34	Process Analysis			X	X
10.35	Process Modelling			X	
10.36	Prototyping	X			
10.38	Risk Analysis and Management		X	X	X
10.39	Roles and Permissions Matrix				X
10.40	Root Cause Analysis		X	X	X
10.45	Survey or Questionnaire	X	X	X	X
10.46	SWOT Analysis				X
10.47	Use Cases and Scenarios	X			
10.49	Vendor Assessment	X			
10.50	Workshops				X

Stakeholders

The tables in this section ([Tables C.8](#) through [C.13](#)) map the business analysis stakeholders to the knowledge area tasks in which they might participate. The references being used are the knowledge area chapter and the task section numbers of the *BABOK® Guide*. An X indicates that a specific stakeholder role may participate in a particular task.

The tables map the business analyst role to every business analysis task in the *BABOK® Guide*. The business analysts' level of involvement (whether formal or informal) is not explicitly stated in the list of stakeholders for every task.

The task is identified by its chapter and section number. For example, the column header 3.1 references the first task in Chapter 3, "Plan the Business Analysis Approach (Section 1)," as part of the Business Analysis Planning and Monitoring knowledge area (Chapter 3).

For a more comprehensive view, see the Stakeholders sheet in the BABOKTechniquesMap.xlsx file, available for download at www.wiley.com/go/Sybextestprep.

TABLE C.8 Business Analysis Planning and Monitoring stakeholders

Stakeholder	3.1	3.2	3.3	3.4	3.5
Business Analyst	X	X	X	X	X
Customer		X			
Domain SME	X	X	X	X	X
End User		X			
Project Manager	X	X	X		X
Regulator	X	X	X	X	
Sponsor	X	X	X	X	X
Supplier		X			

TABLE C.9 Elicitation and Collaboration stakeholders

Stakeholder	4.1	4.2	4.3	4.4	4.5
Business Analyst	X	X	X	X	X
Customer		X		X	
Domain SME	X	X	X	X	
End User		X		X	
Implementation SME		X		X	
Project Manager	X				
Sponsor	X	X			

Tester				X	
Any Stakeholder		X	X	X	
All Stakeholders					X

TABLE C.10 Requirements Life Cycle Management stakeholders

Stakeholder	5.1	5.2	5.3	5.4	5.5
Business Analyst	X	X	X	X	X
Customer	X		X	X	X
Domain SME	X	X		X	X
End User	X		X	X	X
Implementation SME	X	X	X		
Operational Support	X	X		X	X
Project Manager	X		X	X	X
Regulator		X	X	X	X
Sponsor	X		X	X	X
Supplier	X				
Tester	X	X		X	X

TABLE C.11 Strategy Analysis stakeholders

Stakeholder	6.1	6.2	6.3	6.4
Business Analyst	X	X	X	X
Customer	X	X		X
Domain SME	X	X	X	X
End User	X	X		X
Implementation SME	X	X	X	X
Operational Support	X	X	X	X
Project Manager	X	X	X	X
Regulator	X	X	X	X
Sponsor	X	X	X	X
Supplier	X	X	X	X
Tester	X	X	X	X

TABLE C.12 Requirements Analysis and Design Definition stakeholders

Stakeholder	7.1	7.2	7.3	7.4	7.5	7.6
Business Analyst	X	X	X	X	X	X
Customer						X
Domain SME				X	X	X

End User				X	
Implementation SME			X	X	X
Operational Support				X	
Project Manager			X	X	X
Regulator					X
Sponsor			X		X
Supplier				X	
Tester			X		
Any Stakeholder	X			X	
All Stakeholders		X	X		

TABLE C.13 Solution Evaluation stakeholders

Stakeholder	8.1	8.2	8.3	8.4	8.5
Business Analyst	X	X	X	X	X
Customer	X		X	X	X
Domain SME	X	X	X	X	X
End User	X		X	X	X
Project Manager	X	X			
Regulator	X		X	X	X
Sponsor	X	X	X	X	X
Tester			X		

Deliverables

The tables in this section ([Tables C.14](#) through [C.19](#)) map the business analysis deliverables to the knowledge area tasks that use them as inputs or produce them as outputs. Some of the deliverables are not part of the *BABOK® Guide* and may be generated by the organization or by the project's technical team members during design and development. The references being used are the knowledge area chapter and the task section numbers of the *BABOK® Guide*. An *I* indicates that a specific deliverable is used by a particular task as an input. An *O* indicates that a specific deliverable is produced as an output by a task. A *GT* indicates that a deliverable is used as a guideline or tool when that deliverable is an input to a particular task.

Each task is identified by its chapter and section number. For example, column header 3.1 references the first task in Chapter 3 of the *BABOK® Guide*, “Plan the Business Analysis Approach (Section 1),” as part of the Business Analysis Planning and Monitoring knowledge area (Chapter 3).

For a more comprehensive view, see the Deliverables sheet in the BABOKTechniquesMap.xlsx file, available for download at www.wiley.com/go/Sybextestprep.

TABLE C.14 Business Analysis Planning and Monitoring inputs, guidelines/tools, and outputs

BA Deliverables	3.1	3.2	3.3	3.4	3.5
Business Analysis Approach	O	I	I	I	I
Business Analysis Performance Assessment	GT	GT	GT	GT	O
Business Policies	GT		GT	GT	
Change Strategy		GT			
Current State Description		GT	GT		
Expert Judgment	GT				
Governance Approach			O	I	
Information Management Approach				O	
Information Management Tools				GT	
Legal/Regulatory Information			GT	GT	
Methodologies and Frameworks	GT				
Needs	I	I			
Organizational Performance Standards					GT
Performance Objectives (external)					I
Stakeholder Engagement Approach	GT	O	I	I	

TABLE C.15 Elicitation and Collaboration inputs, guidelines/tools, and outputs

BA Deliverables	4.1	4.2	4.3	4.4	4.5
Business Analysis Approach	GT	GT		GT	GT
Business Analysis Information			I		
Business Analysis Information (communicated)			O		
Business Analysis Performance Assessment				I	
Business Objectives	GT				GT
Elicitation Activity Plan	O	I	GT		
Elicitation Results (confirmed)			O		
Elicitation Results (unconfirmed)		O	I		
Enterprise Limitation					
Existing Business Analysis Information	GT	GT	GT		
Future State Description					GT
Information Management Approach				GT	
Needs	I				
Potential Value		GT			
Recommended Actions					GT
Risk Analysis Results					GT
Stakeholder Engagement				O	
Stakeholder Engagement Approach	I	GT		I	I
Supporting Materials		GT			

TABLE C.16 Requirements Life Cycle Management inputs, guidelines/tools, and outputs

BA Deliverables	5.1	5.2	5.3	5.4	5.5
Business Constraints			GT		
Change Strategy			GT	GT	GT
Designs	I	I	I	I	I
Designs (approved)					O
Designs (maintained)			O		
Designs (prioritized)				O	
Designs (traced)	O				
Designs Change Assessment				O	
Domain Knowledge	GT		GT	GT	
Governance Approach			GT	GT	GT

Information Management Approach	GT	GT			
Legal/Regulatory Information	GT		GT	GT	
Proposed Change			I		
Requirements	I	I	I	I	
Requirements (approved)					O
Requirements (maintained)			O		
Requirements (prioritized)			O		
Requirements (traced)	O				
Requirements (verified)				I	
Requirements Architecture			GT	GT	
Requirements Change Assessment				O	
Requirements Management Tools/Repository	GT		GT		GT
Solution Scope			GT	GT	GT

TABLE C.17 Strategy Analysis inputs, guidelines/tools, and outputs

BA Deliverables	6.1	6.2	6.3	6.4
Business Analysis Approach	GT		GT	GT
Business Objectives		O	I	
Business Policies			GT	
Business Requirements	O	I		
Change Strategy			GT	O
Constraints				
Current State Description	O	GT	GT	I
Design Options				GT
Designs (prioritized)			I	
Elicitation Results (confirmed)	I		I	
Enterprise Limitation	GT			
Future State Description		O	GT	I
Identified Risks			GT	
Influences (internal and external)			I	
Metrics and KPIs			GT	
Needs	I			
Organizational Strategy	GT	GT		
Potential Value		O	I	
Requirements (prioritized)			I	
Risk Analysis Results			O	I

Solution Limitation	GT			
Solution Performance Goals	GT			
Solution Performance Measures	GT			
Solution Recommendations				GT
Solution Scope				O
Stakeholder Analysis Results	GT			
Stakeholder Engagement Approach		GT	I	GT

TABLE C.18 Requirements Analysis and Design Definition inputs, guidelines/tools, and outputs

BA Deliverables	7.1	7.2	7.3	7.4	7.5	7.6
Architecture Management Software				GT		
Business Objectives			GT			GT
Change Strategy					I	
Current State Description						GT
Design Options				O	I	
Elicitation Results (any state)	I					
Existing Solutions					GT	
Future State Description			GT		GT	GT
Information Management Approach				I		
Legal/Regulatory Information				GT		
Methodologies and Frameworks					GT	
Modelling Notations/Standards	GT					
Modelling Tools	GT					
Potential Value			GT			I
Requirements (any state)				I		
Requirements (specified & modelled)	O	I	I			
Requirements (traced)					GT	
Requirements (validated & prioritized)					I	
Requirements (validated)			O			
Requirements (verified)	O					
Requirements Architecture	GT			O	I	
Requirements Life Cycle Management Tools	GT	GT				
Risk Analysis Results						GT
Solution Recommendation						O
Solution Scope	GT		GT	I	GT	GT

TABLE C.19 Solution Evaluation inputs, guidelines/tools, and outputs

BA Deliverables	8.1	8.2	8.3	8.4	8.5
Business Objectives	I			GT	GT
Change Strategy	GT	GT	GT	GT	
Current State Description				I	GT
Enterprise Limitation				O	I
Future State Description	GT	GT		GT	
Implemented Solution (external)	I		I	I	
Potential Value		I			
Recommended Actions					O
Requirements (validated)	GT				
Risk Analysis Results		GT	GT	GT	
Solution Limitation			O		I
Solution Performance Analysis		O	I	I	
Solution Performance Measures	O	I			
Solution Scope	GT	GT	GT	GT	GT

Appendix D

Summary of Business Analysis Techniques

TOPICS COVERED IN THIS APPENDIX:

- ✓ Define a business analysis technique.**
- ✓ Review brief descriptions of the *BABOK® Guide* techniques.**



This appendix reviews the definition of a technique and provides a table that describes each technique in the *BABOK® Guide*. This should refresh your memory about the high-level descriptions of each business analysis technique you might see on your certification exam or use at work.

Business Analysis Techniques

The *BABOK® Guide* has 50 business analysis techniques. These techniques are the methods and best practices used by many business analysts to perform business analysis work. These techniques offer you options for how business analysis tasks might be performed.

Experienced business analysts are expected to be skilled in many of these techniques. Although you are not expected to be proficient in all of them, you should master a decent subset of business analysis techniques that work for you. Remember to apply your own experience and judgment when selecting and applying one or more techniques as part of your business analysis activities.

Quick Review of Techniques

[Table D.1](#) defines the business analysis techniques in the *BABOK® Guide*. They are defined for you in much more detail in Chapter 10 of the *BABOK® Guide*.

TABLE D.1 Business analysis techniques

Technique	Description
Acceptance and evaluation criteria	Acceptance criteria define a set of requirements that must be met for a new solution to be acceptable to its stakeholders. Evaluation criteria are metrics and indicators used to assess how an operational solution meets its objectives over time.
Backlog management	Recording, tracking, and prioritizing the remaining work that needs to be done. Prioritization of work in the managed backlog is typically done based upon the business value of the work activity.
Balanced scorecard	Measures organizational performance and value creation relative to the organization's strategic plan as a framework of objectives and performance measures
Benchmarking and market analysis	Comparing organizational practices or processes against best-in-class practices or processes of peer organizations to identify opportunities for improvement
Brainstorming	Generating creative ideas and options to solve a problem or meet a business need in a noncritical group environment
Business capability analysis	Describing the business capabilities of the enterprise relative to achieving a business goal or objective
Business cases	Justifying a course of action based upon the costs and business benefits of a proposed solution
Business model canvas	Uses nine building blocks to describe how an enterprise creates, delivers, and captures value to and from its customers

Business rules analysis	Modelling and analyzing the business principles and processes that define, constrain, and/or enable business operations and decision making
Collaborative games	Used when eliciting business analysis information to encourage participants to collaborate in building a joint understanding of a problem or a solution
Concept modelling	Developing the core concepts of a problem, defining the structure of the core concepts, and specifying the vocabulary to be used
Data dictionary	Collections of definitions used to explain the terminology used by the business and the data relevant to each business domain
Data flow diagrams	Drawings used to visually represent how information moves through a system by showing the external entities, processes, data storage, and data flow
Data mining	Using mathematical models to examine large amounts of data to find useful patterns and relationships from the data
Data modelling	Describing and diagramming the concepts relevant to a business area, the relationships between these concepts, and information associated with them
Decision analysis	Examining and modelling the possible consequences of different decisions to make the optimal decision under uncertain conditions
Decision modelling	Showing how repeatable decisions are made by combining data and knowledge
Document analysis	Eliciting the requirements for an existing system by studying available documentation and identifying any other relevant information
Estimation	Developing the possible range of costs and effort associated with business analysis work on your project
Financial analysis	Assessing the financial viability, stability, and benefit realization of a solution, solution approach, or investment
Focus groups	Collections of people used to elicit ideas and attitudes about a specific product, service, or opportunity in an interactive environment
Functional decomposition	Decomposing business processes, functional areas, or deliverables into smaller parts in order to analyze the parts independently
Glossary	Defines key terms for stakeholders so everyone uses a common business language to communicate and exchange ideas
Interface analysis	Clarifying the boundaries and interfaces between solutions and solution components and defining the requirements describing how they will interact with one another
Interviews	Systematic conversations used to elicit information from a

	person or group of people in an informal or formal setting by asking questions and documenting the responses
Item tracking	Capturing, assigning, and managing the responsibility for addressing the recorded stakeholder concerns and issues
Lessons learned	Learning about and improving a project or process by compiling and documenting successes, opportunities for improvement, failures, and recommendations for improving performance
Metrics and key performance indicators (KPIs)	Measurements used to indicate the performance of solutions, solution components, and other matters of interest to your stakeholders
Mind mapping	Using a nonlinear diagram to articulate and capture thoughts, ideas, and information about a problem or concept
Nonfunctional requirements analysis	Describing qualities and characteristics of a system or solution, such as usability and performance
Observation	Assessing needs and eliciting requirements by watching how stakeholders work within their work environment
Organizational modelling	Describing roles, responsibilities, and reporting structures that exist within an organization
Prioritization	Determining the relative importance of a set of things and determining the order in which they will be addressed
Process analysis	Assessing processes for efficiency and effectiveness and recommending improvements or changes
Process modelling	Visually modelling the sequential flow and control logic of a set of related activities or actions
Prototyping	Building a partial or preliminary version of a system or solution as part of your requirements development activities
Reviews	An organized peer review of a deliverable, looking for errors and omissions
Risk analysis and management	Assessing an identified risk and deciding on a response to that risk
Roles and permissions matrix	Using a matrix to identify roles, associate the roles with activities, and define the levels of authority associated with each role and activity
Root-cause analysis	Performing a structured examination of an identified problem to understand the underlying causes of that problem
Scope modelling	Defining the boundaries of a business domain or solution

Sequence diagrams	Drawings used to show how objects interact during a scenario and the messages they exchange with one another
Stakeholder list, map, or personas	Analyzing stakeholders and their involvement with a project using lists, matrices, or archetypes
State modelling	Drawings used to show the life cycle of a data entity or class
Survey or questionnaire	A set of written questions to stakeholders to collect responses from a large group in a relatively short period of time
SWOT analysis	An evaluation of influencing factors and how they affect a project by looking at strengths, weaknesses, opportunities, and threats
Use cases and scenarios	Diagrammed and textual stories used to describe the tasks a system or solution will perform for actors and the goals that the system will achieve for those actors
User stories	High-level, informal, and short descriptions of a solution capability for a stakeholder in one or two sentences
Vendor assessment	An evaluation of the ability of a potential vendor to meet commitments regarding providing you with a product or service
Workshops	Structured and facilitated meetings for a carefully selected group of stakeholders to collaborate and define/refine requirements

Appendix E

Summary of Business Analysis Outputs

TOPICS COVERED IN THIS APPENDIX:

- ✓ Define a business analysis output.
- ✓ List and briefly describe the *BABOK® Guide* outputs.



Appendix E reviews the definition of a business analysis output and provides a table briefly describing each output in the *BABOK® Guide*. This should refresh your memory about the high-level descriptions of each business analysis output that you might see on your certification exam or use back at work.

Business Analysis Outputs

The *BABOK® Guide* recommends and defines a set of outputs that you can tailor and use when planning for, defining, and managing your project's business analysis efforts. These outputs are not always documents; they can also be information sets that you use to measure business analysis performance, take action, and make the right decisions at the right time. These outputs evolve over the project life cycle and are often reviewed and updated as the project and its associated business analysis efforts progress.

[Table E.1](#) through [Table E.6](#) list and define the outputs produced by the tasks in the *BABOK® Guide* knowledge areas. It also provides the knowledge area and task where each output is produced. Outputs used as task inputs, guidelines, or tools that are produced outside of the scope of the *BABOK® Guide* and its tasks are not addressed here.

TABLE E.1 Summary of Business Analysis Planning and Monitoring outputs

Output	Brief Description	Task
Business analysis approach	Defines the set of processes, templates, techniques, and activities used to perform business analysis on a project or initiative	Plan business analysis approach.
Business analysis performance assessment	Compares planned versus actual estimates for business analysis activities to determine the level of effort required to complete the work	Identify business analysis performance improvements.
Governance approach	Identifies stakeholder decision-making responsibility and authority for business analysis work	Plan business analysis governance.
Information management approach	Defines how business analysis information will be stored, accessed, and used, both during the project and after the proposed change is complete	Plan business analysis information management.
Stakeholder engagement approach	Lists stakeholders and their characteristics, roles, and responsibilities for the project or proposed change	Plan stakeholder engagement.

TABLE E.2 Summary of Business Analysis Elicitation and Collaboration outputs

Output	Brief Description	Task
Elicitation activity plan	Contains planned elicitation activities, any associated logistics, selected techniques, and supporting materials	Prepare for elicitation.
Elicitation results	Captured business analysis information in	Conduct

(unconfirmed)	a format specified by the elicitation activity	elicitation.
Elicitation results (confirmed)	Integrated business analysis information provided by the stakeholders and agreed upon as correct	Confirm elicitation results.
Business analysis information (communicated)	Business analysis information that stakeholders understand	Communicate business analysis information.
Stakeholder engagement	Willingness from stakeholders to engage in business analysis activities and interact with the business analyst	Manage stakeholder collaboration.

TABLE E.3 Summary of Business Analysis Requirements Life Cycle Management outputs

Output	Brief Description	Task
Requirements (traced)	Requirements with clearly defined relationships to other requirements or designs within the solution scope	Trace requirements.
Designs (traced)	Designs with clearly defined relationships to other requirements or designs within the solution scope	Trace requirements.
Requirements (maintained)	Requirements formatted for long-term use by the organization	Maintain requirements.
Designs (maintained)	Designs formatted for long-term use by the organization	Maintain requirements.
Requirements (prioritized)	Requirements prioritized relative to one another based on relative importance to stakeholders and the organization	Prioritize requirements.
Designs (prioritized)	Designs prioritized relative to one another based on relative importance to stakeholders and the organization	Prioritize requirements.
Requirements change assessment	Recommends whether or not to approve, modify, or deny a proposed change to requirements	Assess requirements changes.
Designs change assessment	Recommends whether or not to approve, modify, or deny a proposed change to one or more design components	Assess requirements changes.
Requirements (approved)	Requirements agreed to by stakeholders and ready for use in subsequent business analysis activities	Approve requirements.
Designs (approved)	Designs agreed to by stakeholders and ready for use in subsequent business analysis activities	Approve requirements.

TABLE E.4 Summary of Business Analysis Strategy Analysis outputs

Output	Brief Description	Task
Current state description	Provides the “as is” state of the enterprise relative to scope, capabilities, resources, performance, dependencies, and infrastructure	Analyze current state.
Business requirements	Defines the problem, opportunity, or constraint based upon the current state	Analyze current state.
Business objectives	Points to the desired direction the business will take to achieve the future state	Define future state.
Future state description	Defines the “to be” state of the enterprise and the potential value expected from the future state	Define future state.
Potential value	Value that may be realized when the future state is implemented	Define future state.
Risk analysis results	Contains identified risks associated with the future state and strategies to address those risks	Assess risks.
Change strategy	Describes the approach the organization will follow to guide change	Define change strategy.
Solution scope	Defines the set of capabilities that must be delivered to meet the business need and the effect the capabilities will have on business and technology operations and infrastructure	Define change strategy.

TABLE E.5 Summary of Business Analysis Requirements Analysis and Design Definition outputs

Output	Brief Description	Task
Requirements (specified and modelled)	Contains any combination of requirements and/or designs as text, matrices, and diagrams	Specify and model requirements.
Requirements (verified)	Requirements of sufficient quality to allow further work	Verify requirements.
Requirements (validated)	Requirements that deliver value to stakeholders and align with business goals and objectives	Validate requirements.
Requirements architecture	Contains requirements, the interrelationships between them, and contextual information	Define requirements architecture.
Design options	Describe various options for satisfying the solution approach as well as potential	Define design options.

	improvement opportunities each option provides	
Solution recommendation	Identifies the suggested solution with maximum enterprise value based upon evaluating all design options	Analyze potential value and recommend solution.

TABLE E.6 Summary of Business Analysis Solution Evaluation outputs

Output	Brief Description	Task
Solution performance measures	Provide information on how well a solution is performing or could perform	Measure solution performance.
Solution performance analysis	Contains analysis results of collected measurements and recommendations to solve performance gaps and leverage opportunities	Analyze performance measures.
Solution limitation	Describes current limitations of the solution including constraints and defects	Assess solution limitations.
Enterprise limitation	Describes the current limitations of the enterprise and how solution performance impacts it	Assess enterprise limitations.
Recommended actions	Recommendations that guide solution improvements	Recommend actions to increase solution value.

Appendix F

Answers to Review Questions

Chapter 1: Foundation Concepts

1. C. A solution is a set of changes to the current state of an organization made in order to enable the organization to meet a business need, solve a problem, or take advantage of an opportunity. It is the basis for the project scope that implements the solution and its components.
2. A. Strategy Analysis contains pre-project or early project activities such as assessing feasibility and building a business case for a potential business initiative.
3. D. The business analyst is responsible for understanding the business problems and opportunities in the context of the requirements.
4. B. One definition for a requirement is a condition or capability needed by a stakeholder either to solve a problem or to achieve an objective.
5. D. Transition requirements describe capabilities that a solution must have to facilitate transitioning from the current to the desired future state. They are not needed once the transition is complete and cannot be created until both the current and new solutions have been defined.
6. B. The project manager has primary responsibility for achieving the project objectives.
7. D. Inputs represent information and preconditions necessary for a task to begin. They are produced externally by a single task.
8. C. Business analysis is a set of tasks and techniques used to identify business needs and determine solutions to business problems.
9. C. Knowledge areas define what a business analyst needs to understand and the tasks they need to perform. They do not define a methodology or indicate project phases as tasks may be done in any order as long as their inputs are available.
10. D. The deliverables produced by the Strategy Analysis tasks that make up the business requirements include the business need, the required capabilities, the solution scope, and the business case.
11. B. Building a business case is typically done as part of Strategy Analysis activities. The next most logical knowledge area applied after Strategy Analysis is completed would be Business Analysis Planning and Monitoring where requirements-related resources and tasks are defined.
12. B. Requirements Planning and Monitoring is not a knowledge area. The six knowledge areas are Business Analysis Planning and Monitoring, Elicitation and Collaboration, Requirements Life Cycle Management, Strategy Analysis, Requirements Analysis and Design Definition, and Solution Evaluation.
13. D. The approved requirements are agreed to by stakeholders and ready for use in subsequent business analysis or implementation efforts.
14. C. Business Analysis Planning and Monitoring defines requirement-related

resources and tasks throughout the requirements development process.

- 15. D. Requirements gathering or requirements collecting activities are also known as *requirements elicitation*.
- 6. B. Inputs are the information and preconditions necessary for a business analysis task to begin. They may be generated outside of the scope of business analysis or generated by a business analysis task.
- 17. A. Problem solving involves measuring alternatives against objectives and identifying trade-offs to determine which possible solution is best.
- 8. D. The business analysis approach defines the methodology used for business analysis work on the overall project and each of its phases. It includes team roles, deliverables to be produced, how and when tasks are performed, techniques to be used, and other aspects of the high-level business analysis process.
- 9. B. The business analyst is responsible for ensuring the feasibility of proposed requirements when defining, describing, and refining the characteristics of an acceptable solution as part of Requirements Analysis and Design Definition activities.
- 10. A. Solution requirements describe the capabilities and qualities of a solution that meets the stakeholder requirements. Functional requirements, a subset of the solution requirements, could also be a correct answer to this question, although they were not one of the potential answers provided.

Chapter 2: Controlled Start: Business Analysis Planning and Monitoring

1. B. The Business Analysis Planning and Monitoring knowledge area contains tasks for planning and monitoring of business analysis activities throughout the project, including reporting on and identifying performance improvements.
2. A. Predictive business analysis approaches are used when most of the business analysis work occurs at the beginning of the project or during one single project phase.
3. D. The 15 techniques that can be used when determining the business analysis approach are: brainstorming, business cases, document analysis, estimation, financial analysis, functional decomposition, interviews, item tracking, lessons learned, process modelling, reviews, risk analysis and management, scope modelling, survey or questionnaire, and workshops.
4. B. The project manager is responsible for ensuring that the business analysis plan is compatible with the project plan.
5. A. Needs, or more specifically business needs, are the key input used when planning the business analysis approach for a project. The business need defines the problem or opportunity faced by the organization.
6. C. The acronym RACI stands for Responsible, Accountable, Consulted, and Informed. This is a technique used when conducting stakeholder analysis.
7. C. Urgency is the requirements attribute that indicates how soon the requirement is needed. This attribute is usually specified separately from priority when you have an implementation deadline to meet.
8. B. Stakeholder analysis is performed as soon as a business need is identified and is an ongoing activity as long as business analysis work is being done on a project. It is typically conducted prior to (not during) the project phase it applies to because the business analysis team needs to know the key stakeholders in order to plan effectively for that phase.
9. D. The tasks in the Business Analysis Planning and Monitoring knowledge area are planning the business analysis approach, planning the stakeholder engagement approach (which includes stakeholder analysis), planning business analysis governance, planning business analysis information management, and identifying business analysis performance improvements.
10. C. The business analyst is a key stakeholder for all business analysis tasks on a project.
11. B. Metrics and key performance indicators (KPIs) is the technique that allows you to determine the metrics used for measuring performance and determining how those metrics may be tracked as part of identifying business analysis process improvements.

- .2. B. The stakeholder engagement approach describes how, when, and why the business analyst will work directly with stakeholders relative to any business analysis task.
- .3. B. The six elements of planning business analysis information management are as follows: organization of business analysis information, level of abstraction, plan traceability, plan reuse, storage and access, and requirements attributes.
- .4. B. A metric is a quantitative measure of a process or product describing what is to be measured.
- .5. C. The business analysis performance assessment is an input or guideline for all tasks found in the Business Analysis Planning and Monitoring knowledge area.
- .6. B. The functional decomposition technique is used when planning business analysis activities to decompose the products of your project (a solution breakdown structure) or to decompose project tasks (a work breakdown structure).
- .7. B. The *BABOK® Guide* recommends business analysts begin their planning efforts by building their business analysis approach, defining the business analysis methodology to be used across the project life cycle. Concurrently, the business analysis team also identifies, analyzes, and categorizes the business analysis stakeholders with which they will be working as part of the stakeholder engagement approach.
- .8. B. The Business Analysis Approach deliverable that is built as part of the Business Analysis Planning and Monitoring knowledge area defines the project's approach to traceability.
- .9. C. Requirements that are potential candidates for reuse include regulatory requirements, contractual obligations, quality standards, service level agreements, business rules or processes, and product requirements.
- .10. C. The business analysis governance approach defines the components of a request for change, including the cost and time estimates of the requested change, its associated benefits and risks, and the recommended course of action for the change.

Chapter 3: Controlled Start: Strategy Analysis

1. B. All of the Strategy Analysis tasks are governed by the business analysis approach created as part of the Business Analysis Planning and Monitoring knowledge area.
2. B. The Strategy Analysis task “Define change strategy” produces the solution scope as an output. Option D is a tempting choice, but “Define solution scope” is not an actual task in the Strategy Analysis knowledge area.
3. D. Strategy Analysis tasks develop the business requirements for the project by defining the business need, business case, solution scope, and required capabilities.
4. A. The solution is the outcome of a change that allows an enterprise to satisfy a need.
5. D. The business need defines the problem for which the business analyst is trying to find a solution.
6. C. Industry structure might present constraints, dependencies, or drivers on the current state of the enterprise. This area is a source of external influencers found when analyzing the current state.
7. B. The change strategy contains the results of the business analyst assessing the capability gaps between the existing and new capabilities of the organization.
8. B. The five elements that are part of the assess risks task are unknowns, constraints/assumptions/dependencies, negative impact to value, risk tolerance, and recommendations.
9. D. The four dimensions of a balanced scorecard are learning and growth, business process, customer, and financial.
10. C. When building a change strategy, decision analysis can be used to compare the costs of implementing a proposed solution against the benefits to be gained.
11. C. Analyzing the current state and its capabilities has eight elements: business needs, organizational structure and culture, capabilities and processes, technology and infrastructure, policies, business architecture, internal assets, and external influences. The scope of decision making at different levels in the organization is part of the policies element.
12. B. The sponsor typically approves the business case and authorizes funding for the resulting project.
13. B. The document analysis technique allows the business analyst to leverage existing materials to analyze the current state of the enterprise relative to a business need during Strategy Analysis.
14. B. During Strategy Analysis, two tasks (analyzing the current state and defining the future state) are usually completed before the business analyst

assesses the risks and builds the change strategy and defines the solution scope.

- 15. A. The change strategy contains the preliminary analysis of solution alternatives or options to determine how and whether each option can provide an expected business benefit.
- 16. B. Business objectives describe the specific and measurable ends that an organization is seeking to achieve.
- 17. B. Defining a business need from the bottom up occurs when you are looking at the current state of an existing system and trying to figure out how to improve the efficiency of that system.
- 8. D. When defining solution scope, the implementation SME participates in allocating capabilities to solution components and determining what is required to deliver these new capabilities.
- 9. C. During Strategy Analysis, functional decomposition is used to break down business goals into achievable objectives and measures.
- 10. A. The solution scope and change strategy have been defined when the Strategy Analysis knowledge area activities are complete. Other key deliverables and outputs from this knowledge area include business requirements and business objectives.

Chapter 4: Overarching Tasks: Requirements Life Cycle Management

1. C. The approve requirements task may result in approval and sign-off on the requirements or designs.
2. D. The governance approach determines how to communicate with stakeholders and provides a basis for meeting and communication expectations.
3. C. The project manager is responsible and accountable for the project scope, assessing the solution scope in order to define the project scope as part of the Requirements Life Cycle Management knowledge area.
4. C. The BACCM™ states that the business analyst is responsible for extending value beyond the current initiative they are working on by maintaining requirements and designs for reuse.
5. A. The solution and stakeholder requirements on a project must be traceable to a business requirement.
6. D. The three business analysis deliverables are inputs to several Requirements Life Cycle Management tasks used to influence and guide the business analyst in managing requirements are the governance approach, the change strategy, and the information management approach.
7. A. Making sure that the business analysis team traces the relationship between functional requirements and the solution components that implement those requirements is an example of the Satisfy traceability relationship.
8. C. The tasks in the Requirements Life Cycle Management knowledge area are performed to ensure that all stakeholders have a shared understanding of the nature of a solution and to ensure that those stakeholders with approval authority are in agreement as to the requirements that the solution shall meet.
9. C. The four techniques that may be used when tracing requirements include business rules analysis, functional decomposition, process modelling, or scope modelling.
- o. B. The requirements output from the Requirements Life Cycle Management knowledge area include approved, prioritized, maintained, and traced requirements.
11. A. Structured walkthroughs are organized peer-level or team reviews of project deliverables, such as requirements. Attendees are looking for errors or omissions in the requirements.
2. B. Requirements that are intended for reuse reflect the current state of the organization.

- 3. C. The stability prioritization factor takes into account the likelihood that a requirement will change, because either it needs further analysis or there is a lack of stakeholder consensus.
- 4. D. The requirements architecture is used during requirements prioritization to understand the relationship with other requirements and work products.
- 5. B. The business analyst typically receives input from the implementation SME regarding the impacts of technical dependencies on a specific stakeholder requirement.
- 6. C. Requirements tracing may be done at the individual requirement level, at the model level, at the package level, or at the feature level.
- 7. A. The requirements life cycle begins with the representation of a business need as a requirement and ends when a solution representing the requirements is retired.
- 8. D. When assessing a proposed change to a set of project requirements for an adaptive development approach with iterative and incremental implementation techniques, the resulting impact analysis may be informal.
- 9. C. The solution scope is the basis for requirements management during a project, ensuring that proposed requirements support business goals and objectives.
- 10. A. The four elements of the approve requirements task are understand stakeholder roles, conflict and issue management, gain consensus, and track and communicate approval.

Chapter 5: Controlled Middle: Elicitation and Collaboration

1. A. Elicitation knowledge area tasks include prepare for elicitation, conduct elicitation activity, document elicitation results, and confirm elicitation results.
2. D. Document analysis results in improved requirements coverage as long as the documents being reviewed are up-to-date (current) and valid.
3. B. Brainstorming involves preparing, conducting, and wrapping up. This is true for all 10 techniques used to elicit requirements.
4. C. When conducting an active observation, the business analyst or observer should take detailed notes and ask probing questions about why certain tasks are being done.
5. C. Evolutionary prototypes allow designers and developers to learn about user interface needs and evolve the system requirements.
6. A. Any stakeholder can participate in requirements elicitation activities.
7. A. Closed-ended questions elicit a single response, such as yes or no.
8. B. Stakeholder engagement is defined as the willingness of stakeholders to actively work and interact with the business analysis team.
9. B. Observation assesses the individual's work environment to document details about current processes.
10. A. Active, or visible, observation is when the business analyst observes the individual performing their job and asks questions and talks with the worker while they are performing the work.
11. C. The Elicitation knowledge area focuses on eliciting business, stakeholder, solution, and transition requirements.
12. D. Brainstorming promotes creative thinking, producing a broad or diverse set of options for a specific topic or problem.
13. A. Document analysis elicits requirements of existing systems by reviewing available documentation and leveraging existing materials to discover or confirm requirements. It is also used when SMEs for existing systems are no longer available.
14. B. Heterogeneous individuals have diverse backgrounds and offer different perspectives during a focus group.
15. B. Interface types include user interfaces, external application interfaces, and interfaces with external hardware devices.
16. A. Prototyping for requirements elicitation targets uncovering and visualizing the interface needs before an application is designed or developed.

- 17. C. A survey or questionnaire provides an effective method for eliciting requirements information from many people in a short period of time.
- 8. A. The nonjudgmental environment of a brainstorming session for requirements elicitation enables creative thinking.
- 9. C. Unstructured interviews are where the business analyst has no predefined questions but sits with the interviewee to discuss what the business expects from the target system.
- 10. C. Affinity maps, fishbowls, and product boxes are all collaborative games that may be used to encourage stakeholders to develop a joint view of a problem or potential solution.

Chapter 6: Controlled Middle: Requirements Analysis and Design Definition

1. C. Requirements analysis tools and techniques are used to develop the stakeholder and solution requirements.
2. A. Requirements validation ensures that all requirements support the delivery of value to the business by ensuring that stakeholder, solution, and transition requirements align to the business requirements.
3. B. Consistent requirements do not contradict or conflict with one another.
4. D. Data flow diagrams show how information flows through the system.
5. D. A model serves as an abstraction representing some or all of the proposed solution.
6. C. A process is defined as a sequence of repeatable activities executed in an organization.
7. B. Decision modelling is an example of rationale-focused models used in requirements analysis.
8. C. Entities in an entity-relationship diagram are the things about which data is needed. They are contained in the labeled rectangle of the diagram.
9. A. The six tasks of requirements analysis are specify and model requirements, verify requirements, validate requirements, define requirements architecture, define design options, and analyze potential value and recommend solution.
10. B. Activity flow models show how the system behaves over the course of time through executing business processes or resulting from events that occur inside the solution scope.
11. C. The requirements architecture is the structure for all of the requirements of a proposed change.
12. B. Constraints impose limitations imposed on the solution that do not support the business or stakeholder needs.
13. D. Improvement opportunities include increasing efficiency, providing better access to information, and identifying capabilities beyond what is required.
14. B. Nonfunctional requirements define quality attributes, design, and implementation constraints, and external interfaces the product must have. They are a type of solution requirement.
15. D. Atomic requirements are self-contained and capable of being understood independently of other requirements or designs.
16. C. Scope modelling organizes requirements based on the solution components to which they are related.

- 7. A. Specified and modelled requirements are the output from the task “specify and model requirements.”
- 8. C. The four main components of an entity relationship diagram are the entities, their attributes, unique identifiers for each occurrence of an entity, and relationships between the entities. Attributes are individual pieces of information that describe an entity.
- 9. A. Verification is a quality check performed after a requirement is analyzed. Verification activities are typically performed iteratively throughout the requirements analysis process.
- 10. B. Assumptions and constraints are defined and clarified as requirements are understood and documented with their associated attributes such as date identified, owner, impact, and any associated risks.

Chapter 7: Controlled End: Solution Evaluation

1. C. Solution Evaluation tasks can be performed on solutions in different stages of development. A pilot or beta release is the name given to a solution component that is part of a limited implementation that is not fully released.
2. B. Business objectives provide you with the measurable result that the enterprise wants to achieve.
3. B. The item tracking technique is used to ensure that issues identified by assessing enterprise limitations are resolved.
4. D. According to the BACCM™, a business analyst may recommend a change to either a solution or to the *enterprise* to realize the potential value of a solution.
5. B. Determining the most appropriate response to identified problems in a delivered solution is an element of the assessing solution limitations task.
6. C. “Do nothing” is the best recommendation to make when the value of a change from a current state is low relative to the effort required to make that change.
7. D. To evaluate solution performance, the solution must exist in some form and be *in use*.
8. B. The project sponsor is responsible for approving the potential value of a solution.
9. D. Allocated requirements are associated with a solution component that will implement them.
10. A. You are making decisions about replacing or retiring a solution. One factor you consider is the money/effort that has already been committed to this current initiative, which is the sunk cost.
11. C. The implemented solution is a solution that exists in some way.
12. C. Requirements allocation typically begins early in the project life cycle (as soon as the solution approach can be determined) and continues to be performed until all valid requirements are allocated, typically through design and construction of the solution.
13. B. Transition requirements are defined after the solution has been designed.
14. A. During solution validation, the root-cause analysis technique can be used to ensure that the underlying reason for a defect is identified, rather than simply correcting the output that may be a symptom of a deeper underlying problem.
15. A. Investigating how a solution affects a particular stakeholder group (or stakeholder assessment) is an element of the assessing enterprise limitations task in the Solution Evaluation knowledge area.
16. B. When assessing enterprise limitations using the risk analysis and

management technique, be sure to address technology, financial, and business risks.

- 17. B. Transition requirements define capabilities needed to support the transition from the old system to the new solution, including employee training, conversion of existing information, and user acceptance testing.
- 8. C. The *BABOK® Guide* recommends using metrics and KPIs when measuring solution performance.
- 9. C. Inputs for the Analyze Performance Measures task include the solution performance measures and the potential value. Additional guidelines and tools used as inputs are the change strategy, future state description, risk analysis results and solution scope, the deployed solution, any identified defects, and the business requirements.
- 10. C. The business analyst knows the business environment and can assess how each proposed solution would affect the environment. Business analysts are also responsible for ensuring that the stakeholders fully understand the solution requirements and that implementation decisions align with those requirements.

Chapter 8: Underlying Competencies

1. B. Business principles are those characteristics that are common to all organizations with a similar purpose and structure, whether or not they are in the same industry. Examples include organizational functions such as HR and finance.
2. D. Influence skills enable you to get things done.
3. A. Organization knowledge is the understanding of the business architecture of an organization, including business models, organizational structure, business unit relationships, and people in key stakeholder positions.
4. D. Visual methods involve providing learners with a visual representation, such as a graphical model of a business process or a solution.
5. C. These are Tuckman's four stages of group development in the order they occur. You will not find this specific information in the standard. Several business analysis tasks require you to manage teams, and this is a well-known model for group development.
6. A. Confrontation is considered to be the best method for conflict resolution with the highest likelihood of reaching a permanent solution. It involves addressing the conflict using a problem-solving method by analyzing the facts. You will not find this specific information in the standard.
7. A. The process of gaining knowledge or skills is also known as *learning*.
8. C. Organization and time management skills assist you in effectively managing tasks and information. One measure of organization and time management is effective use of your time, which requires prioritizing, eliminating procrastination, and clarifying goals and objectives.
9. A. Problem solving involves measuring alternatives against objectives and identifying trade-offs to determine which possible solution is best. Evaluating trade-offs and measurements is part of decision making.
- o. C. Diagramming tools support rapid drawing and documentation of a model by providing a set of templates for a particular notation, and they are generally low-cost and easy-to-use. The resulting diagrams can often be integrated into a word-processing document.
11. B. Knowledge management and collaboration tools that may be used to capture and distribute knowledge throughout an organization include document repositories that link with office productivity software, wikis allowing easy creation and linking of web pages, discussion forums, or other web-based tools.
2. C. Cognitive conflicts are based on disagreements on matters of substantive value or impact on the project or organization. Resolution of cognitive conflict requires the team to focus on examining the premises, assumptions, observations, and expectations of the team members.

3. B. Effective leadership requires that a business analyst be able to develop a vision of a desired future state that people can be motivated to work toward and the interpersonal skills needed to encourage them to do so.
4. A. Expectancy theory links the expectancy and likelihood of a reward to behavior.
5. B. Analytical thinking and problem-solving skills are divided into five more detailed areas: creative thinking, decision making, learning, problem solving, and systems thinking.
6. D. Effective problem solving is a combination of problem definition, alternatives identification, and decision making.
7. C. One aspect of effective verbal communications is your ability to use your active listening skills. Active listeners maintain a focus on the speaker in order to understand, interpret, and evaluate what is being said in a calm, systematic fashion. Often, active listeners paraphrase statements to the speaker to ensure that the listener understands what is being said.
8. B. Theory X says people are inherently lazy and need to be threatened in order to be motivated. In contrast, Theory Y states that people seek out responsibility and respond to proper expectations in the workplace.
9. A. Confronting a problem is considered to be the best method for conflict resolution with the highest likelihood of a permanent solution. This involves laying the problem and any related information out on the table and getting the involved parties to discuss what is going on and reach a resolution.
10. C. The storming stage of the Tuckman model is characterized by confrontations as team members vie for position and control within the group. Everyone is jockeying for status within the group, and things can be a bit chaotic.

Chapter 9: Five Perspectives on Business Analysis

1. C. The five common perspectives addressed by the *BABOK® Guide* include agile, business intelligence, information technology, business architecture, and business process management.
2. B. The false statement is “Knowledge areas are applied the same way regardless of the perspective being used.” Knowledge areas are typically modified and customized for each perspective. This can result in different techniques, frameworks, and reference models being used as part of the initiative.
3. D. Business analysis work is performed *continuously* throughout an agile initiative and relies heavily on *interpersonal* skills.
4. A. On agile projects, a kanban backlog list is used to manage the ongoing refinements and redefinition of the project scope. The backlog list is continually reviewed and reprioritized.
5. C. The sponsor is the key stakeholder that you need to have involved with the project from the beginning, providing continuous feedback to the team and adjusting the product as needs change.
6. C. One or a combination of the following roles can perform business analysis activities on agile teams: a business analyst working on the team, the customer representative or product owner, or distributing the business analysis activities throughout the team members.
7. A. The focus of business intelligence is the transformation of data into *value-added* information to support business decision making.
8. B. One focus of a business intelligence project is customer engagement, targeting a strategic process level of decision making. Other strategic process examples include market analysis and product development.
9. D. The business analyst’s primary role on a business intelligence initiative is as a liaison between business intelligence stakeholders and solution providers. Additional activities may include designing ad hoc queries, designing specialized presentations, and modelling decisions or enterprise data.
10. A. A process modeller captures and documents as-is and to-be business processes on business process management projects.
11. C. Predictive analytics applies statistical analysis methods to historical data to identify patterns and make predictions about future events. The focus is on pattern recognition through data mining, predictive modelling, forecasting, and condition-driven alerts.
12. D. Business analysts working in an information technology environment consider their tasks in light of three factors: solution impact, organizational maturity, and change scope.

3. C. The waterfall life cycle model is an example of the predictive solution development methodology where each phase of the process or sequence is completed before advancing to the next phase.
4. C. The four information technology methodologies a business analyst may encounter are homegrown/organization specific, requirements engineering (RE), structured systems and design method (SSADM), and the unified process (UP). SSADM is a predictive development methodology focusing on established logical modelling and the separation of requirements from solutions.
5. B. In addition to the techniques identified in the Elicitation and Collaboration knowledge area, three methods can be of great benefit in the information technology discipline. They are investigation, simulation, and experimentation. Simulations use statistical methods and mockups as part of the elicitation effort.
6. A. Business architecture provides architectural descriptions and views, called blueprints, to provide a common understanding of the organization for the purpose of aligning strategic objectives with tactical demands.
7. D. For each blueprint provided, business architecture may define the current state, future state, and one or more transition states that are used to transition to the future state. This provides insight and understanding of how well the organization aligns to its strategy and is a *trigger* for change.
8. C. There are several factors central to successful business architecture. They include support of the executive business leadership team, integration with clear and effective governance processes, and integration with ongoing initiatives and access to senior leadership.
9. C. The business process management perspective focuses on how the organization performs work to deliver value across multiple functional areas to customers and stakeholders.
10. C. The business process management life cycle generally includes the following four activities: designing, modelling, execution/monitoring, and optimizing. Execution/monitoring is where data is collected from the actual business process flow.

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