Eight Things Your Business Analysts Need to Know

A Practical Approach to Recognizing and Improving Competencies



An ESI International White Paper

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Abstract

Each year, organizations across the globe face astronomical project failure rates, often wasting millions of dollars per failed project. This paper examines the roots of project failure and centers in on the elusive, often undefined role of the business analyst. In response to research showing that many organizations have not set concrete requirements and job descriptions for their business analysts, this paper provides eight essential competencies necessary for success in this job function. It explores the essential skills, knowledge and abilities inherent to each competency and during each stage of a business analyst's career. The paper concludes with practical tips for using these competencies as guidelines for improving the efficiency of business analysts within your organization.



"Most organizations have come to accept project failure—along with a loss of money, time and functionality—as a given."

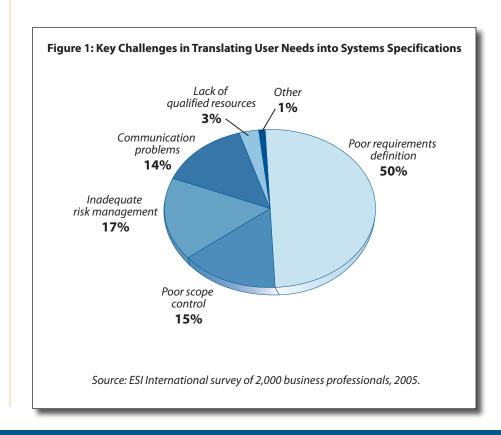
Introduction

A Standish CHAOS Chronicles report states that only 28% of software projects were expected to finish on time and on budget. Only 52% of completed projects met their proposed functionality. Based on a study of more than 13,000 U.S. projects, the Standish Group reported that successful projects made up "just over a third or 34 percent of all projects...." Estimates of the lost value for these projects in 2002 was \$38 billion, with another \$17 billion in cost overruns, for a total project waste of \$55 billion against \$255 billion total in project spending.

Unfortunately, poor project performance has become a way of life. Failure statistics like those above have ceased to even shock us. Most organizations have come to accept project failure—along with a loss of money, time and functionality—as a given. With constantly improving technology, exponential resources and a concrete project management methodology, how does this continue to happen? It's time for our questioning to go beyond, "Are projects failing?" Now it's time to ask why.

Why Are Projects Failing?

The data in Figure 1 was collected in an online poll of 2,000 business professionals. It asked the question, "What are the key challenges in translating user needs into systems specifications for mission critical projects?"

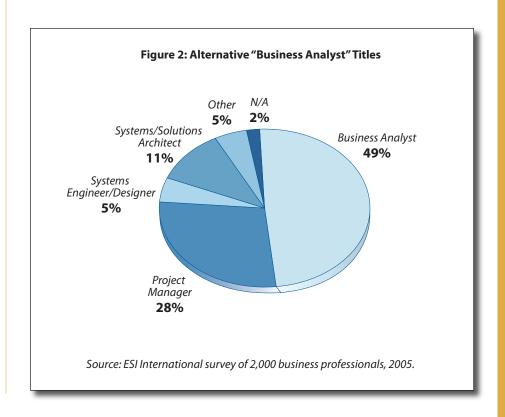


If a project fails, it's often assumed to be the project manager's fault. More and more, however, research is showing that this is not the case. In the survey mentioned on page 4, an overwhelming 50% of respondents cited poor requirements definition as their biggest challenge, thus raising a new question. When projects fail, most organizations are quick to blame the project manager. But what about the business analysts? What role do they play? More importantly, what role *should* they play?

The Role of the Business Analyst

In many organizations, the competencies necessary for a successful business analyst simply haven't been differentiated from those of a subject matter expert (SME) or a project manager. And yet each of these three positions have very distinct responsibilities during the project life cycle. It's no wonder so many projects are failing. How can a business analyst—or anyone in any job—be expected to perform at a top level when his or her required competencies have not been clearly defined?

The answer is simple: They can't. Yet organizations worldwide are operating without defined competencies for their business analysts. For many organizations, in fact, even the title of the person performing "business analysis duties" can vary widely. According to a recent poll, there are several titles used for those performing the "business analyst" role, as illustrated in Figure 2.



"Functional competencies refer to an individual's ability to perform a given set of activities based on their particular job." We know what business analysts do—essentially. At the most basic level, a business analyst acts as a translator or liaison between the customer or user and the IT person or group attempting to meet this user's needs. But what about the specifics? According to the International Institute of Business Analysis, business analysts are "responsible for identifying the business needs of their clients and stakeholders, to determine solutions to business problems." As a translator, he or she "elicits, analyzes, validates and documents business, organizational and/or operational requirements" (www.iiba.com).

Additionally, what processes are business analysts using to elicit, analyze, validate and document these requirements? Most organizations do not have set processes in place. And if they do, one needs to ask, "What competencies does a business analyst need to accomplish these tasks successfully?"

Defining Competencies

There are generally two distinct types of competencies. Both categories should describe employees' behaviors—descriptions of how they might be expected to perform given a particular task at hand. First, there are those competencies that address organizational success. Such competencies are common across many jobs and demonstrate the key behaviors required for success regardless of position within the organization. For example, leadership, communication skills, vision, innovation and collaboration might be considered organizational competencies. All employees, regardless of function or role, must be accomplished in these areas in order to contribute to the success of the overall organization.

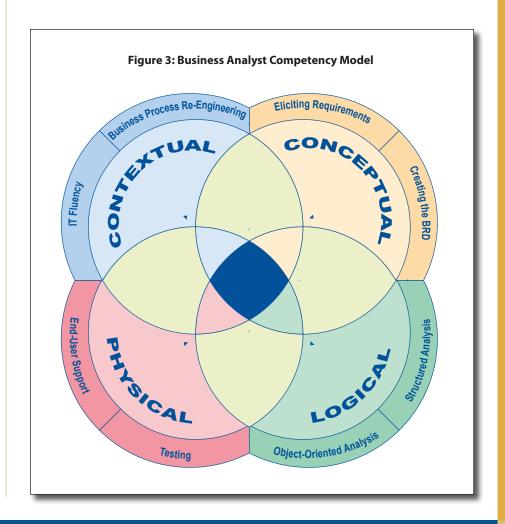
Second, there are those competencies that address success for a certain job. Functional competencies refer to an individual's ability to perform a given set of activities based on their particular job. These functional competencies are specific and necessary to an individual's success. For instance, functional competencies for a network administrator might include the ability to install a new server or troubleshoot network performance issues. These competencies are required for successful performance.



Setting Concrete Competencies

To combat this substantial issue of the undefined business analysis role, eight essential competencies have been determined. Additionally, to aid in the organizational implementation of these competencies, this paper introduces the "Business Analyst Competency Model" as illustrated in Figure 3. This model, which breaks down each competency as conceptual, logical, physical or contextual, takes into consideration all tasks and activities performed by a business analyst. The model takes a fairly traditional approach, basing divisions on research conducted in countless organizations. The competency model is a practical and straightforward aid to apply solid guidelines for the business analysts in your organization—at all levels. The model is, fundamentally, a description of a competent business analyst.

By definition, a competency is made up of three components: knowledge, skill and ability. Knowledge considers "what is being measured?" Skill looks at "how is it done?" Ability, lastly, examines "to what degree can it be done?" Each of the competencies outlined in this paper is broken down into these three components.



Clearly there are different responsibilities during each stage of a business analyst's career. For each of the eight competencies, this paper designates the specific tasks a competent business analyst should perform at the senior, intermediate and junior levels.

For the purpose of this paper, we have defined typical levels of ability as follows:

Table 1: Business Analyst Levels and Proficiency

Typical Level	Degrees of Proficiency
Senior	Can do complex versions of task(s) at hand with minimal coaching
Intermediate	Can do simple versions of task(s) at hand with some coaching
Junior	Can perform tasks with help

Additionally, it is important to take into consideration the level of ability to which each business analyst performs. Very often it is assumed that all business analysts—junior, intermediate or senior—should be performing at 100 percent accuracy. Very rarely is this the case. To combat this misconception, we have included an "ability" column for each competency. This simply sets a guideline for those in each role to strive for in terms of accuracy.



"Requirements can be conditions, functionality, products or services for internal or external use."

Competency #1: Eliciting Requirements

On the most basic level, we know that a big part of a business analyst's job is to gather and document user requirements. Requirements can be conditions, functionality, products or services for internal or external use. They are needed by a user or client to solve a business problem or achieve a business activity, and they are tied to the needs of business, rather than the constraints imposed by technology. This means that the business analyst's job has more to do with identifying the desired results than the actions or resources required to reach these results—that's someone else's job. The purpose of gathering requirements is to provide an understanding of the problem or opportunity before trying to propose the solution.

The techniques necessary to capture requirements are often referred to as elicitation. Depending on the level of competency an individual demonstrates, the types of techniques should be considered carefully when applying them to any given situation. Table 2 illustrates the ideal knowledge, skill and ability levels of business analysts for this particular competency.

Table 2: Competency I	Breakdown for	r Eliciting Requirements
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	Knowledge What is being measured?	Skill How is it being done?	Ability To what degree can it be done?
Senior	Anticipates, quantifies and resolves problems and issues with requirements	 ✓ Identification of source of requirements ✓ Risk management ✓ Development of priority matrix 	Within 5-10% accuracy
Intermediate	Employs facilitation techniques in discussing requirements with clients and users Uses specific group and collaborative methods for collecting requirements	 ✓ Brainstorming ✓ JAD sessions ✓ RAD sessions ✓ Nominal group technique ✓ Structured walkthrough 	Within 10-25% accuracy
Junior	Assists in requirements gathering using a variety of basic techniques	✓ Interviews ✓ Surveys ✓ Historical data	Within 25-50% accuracy

Competency #2: Creating the Business Requirements Document

A business requirements document (BRD) is an exhaustive written study of all facets of regulatory, business, user, functional or non-functional requirements and provides insight into both the as-is and to-be states of the business area. It is a detailed profile of primary and secondary user communities. It comes directly from the requirements the business analyst has already gathered. It only makes sense, then, that the BRD should be written by the business analyst. After the document is completed, the business analyst and the client or user meet for a formal review and for approval of the BRD. The document is then shared with the rest of the development team, including the project manager.

In creating the BRD, it is very likely that a senior business analyst would be largely responsible for defining not only the various sources for requirements, but also the placement and relevancy of these requirements. For example, senior business analysts may identify such items as the project charter and vision, business case, requirements work plan, vendor request documents and, potentially, business contract documents. They may also work with the project manager to define the project and product scope. Any requested changes to any area of the BRD—before or after work has begun—must be carefully reviewed by the senior business analyst. An intermediate business analyst, however, might work with the client or user, discussing changes necessary to gain approval. When it comes to the BRD, the junior business analyst is expected to assist the intermediate and senior business analysts with the organization and the actual documentation.

Table 3: Competency	v Breakdown for Creati	na the Business Re	quirements Document

	Knowledge What is being measured?	Skill How is it being done?	Ability To what degree can it be done?
Senior	Publishes, distributes and ensures sign-off of the business requirements document Performs impact analysis on requested changes to requirements	 ✓ Risk management ✓ Development of priority matrix ✓ Formal reviews with client acceptor 	Within 5-10% accuracy
Intermediate	Controls changes to the requirements baseline	✓ Documentation and analysis through a formalized change request	Within 10-25% accuracy
Junior	Analyzes, classifies and documents requirements	✓ Using the BRD outline to manage the requirements according to their source	Within 25-50% accuracy

"The most common types of business analysis models include business models, process models, data models and workflow models."

Competency #3: Structured Analysis

Structured analysis refers to the art of modeling. In business analysis, modeling is used to support and enhance text-based requirements, help identify and validate requirements, document and communicate requirements and, finally, organize information into coherent ideas. The most common types of business analysis models include business models, process models, data models and workflow models.

When it comes to the modeling competency, junior business analysts should be able to easily identify a variety of modeling techniques. They should also be able to create simple models based on information given to them by their intermediate or senior counterparts. For example, a junior business analyst might be expected to create such diagrams as organizational charts or business interaction models. An intermediate business analyst may begin to develop such models as entity relationship diagrams, functional decomposition diagrams and the ever popular use case models.

The senior business analyst takes the models from the junior and intermediate business analysts and examines the as-is state in order to create the ideal to-be state. When looking at models created by the intermediate business analyst, the senior team member is looking to find problems and opportunities that will change the process or the deliverable.

lable 4: Competency	/ Breakdown f	or Structured	Analysis

	Knowledge What is being measured?	Skill How is it being done?	Ability To what degree can it be done?
Senior	Analyzes and determines problem/opportunity/ solution resolution	✓ Identification of "as-is" state vs. "to-be" state using a variety of applicable tools and techniques depending on the project and its complexity	Within 5-10% accuracy
Intermediate	Communicates with clients using data and process models to clarify and validate requirements	 ✓ Use-case diagramming ✓ ERD diagramming ✓ Functional decomposition ✓ Data flow 	Within 10-25% accuracy
Junior	Identifies and clarifies requirements using basic conceptual and logical process/data modeling techniques	✓ Business process✓ Data flow✓ Workflow✓ Object oriented	Within 25-50% accuracy

"Object-oriented analysis requires a clear understanding of both the process and data modeling techniques, including functional decomposition."

Competency #4: Object-Oriented Analysis

Within a business context, an object model is an abstract representation of the process and data requirements of a system, based on decomposing the system into units called objects. Each object encompasses the data and operational characteristics of one business item. Object-oriented analysis is particularly important to business analysts as a business planning tool to depict the hierarchy of business functions, processes and sub-processes within an organization.

Generally speaking, individuals embarking on the quest to master object-oriented analysis should be competent in structured analysis. Object-oriented analysis requires a clear understanding of both the process and data modeling techniques, including functional decomposition.

It's likely that junior business analysts may get involved in the functional decomposition of the as-is state of a project, including, perhaps, forming a simple model of this state. From this model, an intermediate business analyst may consider developing activity diagrams to further clarify requirements. With diagrams in hand, a senior business analyst is likely to begin designing the to-be state during one-on-one interviews, group interviews and the documentation process. Essentially, each of these processes involved in object-oriented modeling ensures that the requirements are properly communicated to the developers and administrators.

Table 5: Competency Breakdown for Object-Oriented Analysis			
	Knowledge	Skill	Ability
	What is being measured?	How is it being done?	To what degree can it be done?
Senior	Communicates with the technical team using object-oriented analysis models and communicates with clients using simplified object-oriented analysis models to clarify requirements	 ✓ Facilitation of one-on-one interviews ✓ Facilitation of group interviews to help develop a consensus about the requirements ✓ Documentation to communicate with the developers 	Within 5-10% accuracy
Intermediate	Uses basic object-oriented analysis modeling techniques to identify requirements	 ✓ Activity diagrams ✓ Use case diagrams ✓ Decision tables and trees 	Within 10-25% accuracy
Junior	Uses object-oriented analysis tools at an introductory level	 ✓ Functional decomposition diagrams ✓ Development of entity relationship diagrams (static diagrams) ✓ Simple use case diagrams 	Within 25-50% accuracy

Black Box Testing:

Black box is, essentially, the "checks and balances" of testing. In this process, the structure of the item being tested is not visible. Testing is done on the requirements or objectives determined by the business need. Black box testing shows us what the deliverables are supposed to accomplish and to what extent they can be accomplished.

For example, if we were creating a Travel and Expense Management Tool, black box testing might look at the amount of time required to a) fill in a report, b) have a report approved or rejected, and c) be reimbursed. Black box testing in this scenario would *not* look at the intricacies of the actual system—only the results.

See the side bar on page 14 to read about the opposite of black box testing—glass box testing.

Competency #5: Testing

When it comes to testing in business analysis, the first thing to understand is that the term applies to several different levels of work. First, business analysts are looking to test the products to validate whether the requirements have been met. They develop test scripts, test plans and test scenarios based on the as-is state as well as the to-be models. Testing requirements should be done in iterative stages to ensure that, by following the requirements, the desired deliverables will be met.

The second level of testing is more familiar. This is testing the functionality of the physical product—testing lines of code and user testing of graphical appeal, speed and functionality. Black box testing and glassbox testing fall into this category. As with the first type of testing, this testing also makes sure we reach the desired state, but it is based on user acceptance.

In a testing situation, junior business analysts may not always be heavily involved. Their role is often to assist. The intermediate business analyst might take on the role of designing test cases and reviewing some or all of the results from these scenarios. The senior business analyst acts as an overseer in the testing phase. His or her job is to see the project to fruition and manage quality.

	Knowledge What is being measured?	Skill How is it being done?	Ability To what degree can it be done?
Senior	Monitors user acceptance testing and responses to problems	✓ Using test plans to ensure that all business requirements and their integrity are maintained through to user acceptance testing	Within 5-10% accuracy
Intermediate	Designs user acceptance test plans and test cases	✓ Using ERD diagrams and use case diagrams to develop test plans	Within 10-25% accuracy
Junior	Demonstrates knowledge of test strategies, plans and execution	✓ Setting up a requirements coverage matrix	Within 25-50% accuracy

Glass Box Testing:

The opposite of black box testing is glass box testing. This type of testing allows the business analyst to see "under the hood" of the product or deliverable. In an IT-related project, such as software development, glass box testing would allow for a view and assessment of the design, code and architecture of information.

For example, in using the same Travel and Expense Management Tool discussed on page 13, glass box testing would examine such details as:

- Does the tool integrate with our payroll system?
- Does it integrate well with our credit card vendors?
- Has the tool taken into consideration the currency exchange aspect?
- Is the downloading and uploading of information automated?
- Is the execution seamless and performed in a timely fashion?
- Does the code in place ensure that these tasks are completed?

Competency #6: End-User Support

It's a common misconception among project teams that the project ends when the deliverable is completed. Not so. Business analysts, specifically, should be aware that end-user support after the product is delivered is almost as important. It should be stated, too, that the role of the business analyst is *not* to act on behalf of the training team, but to complement the training team's efforts with their knowledge of the business requirements. Much of the documentation created in the process of identifying the deliverables is invaluable to the development of training needs and end user support, including user manuals and reference materials.

Ideally, a junior business analyst may work with end-users in the post-deployment phase to clarify any high-level questions that need to be addressed. An intermediate business analyst would work closely with training managers and facilitators to define requirements to deliver the training supporting the business needs. A senior business analyst would assess and evaluate all feedback from his or her team members, those individuals involved in the deployment of the product and any pilot or "test" groups to ensure that the requirements necessary to correct any issues are addressed in future releases, iterations or versions of the product.

Table 7: Competency Breakdown for End-User Support

	Knowledge What is being measured?	Skill How is it being done?	Ability To what degree can it be done?
Senior	Collects and analyzes feedback from end-users to create requirements for next release of solution	 ✓ Analysis of help desk requests ✓ Reviews via surveys, interviews and audits 	Within 5-10% accuracy
Intermediate	Develops end-user training content for use in instructor-lead and technology-based training	✓ Working with training managers and documented requirements	Within 10-25% accuracy
Junior	Provides day-to-day support of end users	✓ Help desk support	Within 25-50% accuracy

"Just because an individual is fluent in a given technology does not automatically qualify him or her as a business analyst."

Competency #7: IT Fluency

How much knowledge is enough for a business analyst? With regards to IT knowledge, this has been a long-standing debate. In reality, the answer is as varied as it would be for any other professional. The amount of necessary IT knowledge is truly based on the project. The IT background for a competent business analyst depends entirely on the environment and possibly the industry vertical he or she works within. It's important to remember that IT fluency is just one of eight competencies that a successful business analyst must have. Also, just because an individual is fluent in a given technology does not automatically qualify him or her as a business analyst. This is a mistake many organizations are guilty of making. In theory, a great business analyst should have the wherewithal to understand which resources would be appropriate to help define and validate both requirements and specifications within a given project and product scope.

In examining the different stages of a business analyst, a person at the junior level would need to have a clear understanding of the IT products and tools necessary for the business to function. An intermediate business analyst may understand interconnectivity and relationships between the tools, and perhaps, system architecture and information architecture. A senior business analyst will demonstrate his or her IT fluency across an industry vertical. He or she may also have a very clear understanding of how different IT products are related, interface with and connect to each other, as well as the positive or negative impact they may have in a given situation.

	Knowledge What is being measured?	Skill How is it being done?	Ability To what degree can it be done:
Senior	Understands the societal impact of information and information technology	✓ Evaluating and assessing the impact of one solution and product on the rest of the organization	Within 5-10% accuracy
Intermediate	Displays to peers, technology staff and clients a basic understanding of IT concepts	✓ Working with developers and administrators to develop as-is and to-be states of products from a code and systems perspective, including anything from security layers to integration with other systems	Within 10-25% accuracy
Junior	Demonstrates basic understanding of technology and applications within own enterprise	✓ Structured walkthroughs at an end-user level — specifically, familiarity with the products interface, and possibly some administrative aspects of the product	Within 25-50% accuracy

"BPR is a competency in which all levels of business analysts must be highly skilled."

Competency #8: Business Process Re-Engineering

Considered the "big-picture thinking" of business analysis, business process re-engineering (BPR) is a rapidly growing part of business analysis. In fact, lately many companies have been grouping business analysts around this specialty and developing teams of process analysts. This is the phase in which business analysts seek out both problems and opportunities. BPR uses a variety of modeling techniques in order to look at the bigger picture, but still think tactically.

BPR is a competency in which all levels of business analysts must be highly skilled. The junior business analyst's responsibility is often to identify, using various modeling techniques, possible areas of improvement. The intermediate business analyst might have the job of walking the client or user through each step of the process, examining individual tasks that could potentially be improved. The senior business analyst begins to actually make suggestions for improvements.

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	Knowledge What is being measured?	Skill How is it being done?	Ability To what degree can it be done?
Senior	Recommends improvements to business processes	✓ Ensuring business goals are met by considering all tangible and intangible costs	Within 5-10% accuracy
Intermediate	Participates in workflow analysis and other business process analysis to identify and clarify requirements	✓ Conducting structured walkthroughs with client using workflow diagrams	Within 10-25% accuracy
Junior	Identifies which business modeling tools are appropriate given the task at hand	 ✓ Use-case modeling techniques ✓ Workflow modeling ✓ Business process modeling 	Within 25-50% accuracy

More ways to add to your business analysis repertoire:

In addition to the eight competencies discussed in this paper, certain ways of thinking are crucial to the job:

- Strategic (Vision)—A good business analyst should be able to clearly demonstrate the idea of vision.
- Systems (Sustainable Innovation)—A good business analyst should constantly be thinking innovatively: How are we going to do it better? How can we be more creative with this solution?
- Self (Communication)—
 Business analysts can't get far without excellent communication skills.
- Social (Collaboration)—
 The center of the business analyst's job is really the idea of collaboration.

 As such, they must have the ability to help two groups work together to accomplish a common goal.

Developing the Eight Competencies to Improve Your Organization

In the beginning of this paper (Figure 1), we discussed the key challenges organizations face in translating user needs into systems specifications. Any of these challenges can ultimately lead to project failure. After outlining the eight critical business analysis competencies, however, we can begin to see how these challenges can be combated. As your business analysts become more and more capable in well-defined roles, they are better armed to overcome such recurring challenges.

For instance, poor requirements (50%) were cited as the biggest challenge to organizations. As business analysts at the junior, intermediate and senior levels begin to understand their role in the elicitation process, the work performed is inevitably more centered and accurate. Inadequate risk management (17%) was cited as the second most-common challenge. Several competencies—creating the BRD, object-oriented analysis and structured analysis—will help business analysts perform more effective risk management. IT fluency and business-process re-engineering can help improved project scope control, which was cited by 15% of respondents as a key challenge. The challenges associated with communication problems (14%) and the lack of qualified resources (3%) will also lessen once the business analysts in your organization are better versed in the standards and best practices of their specific job functions. Ultimately, all of these *challenges* become, simply, daily tasks that your business analysts are prepared to handle as experts in their field.

Though comprehensive, the competency model alone is not enough to improve business analysis practices within your organization. Implementing these competencies as organizational guidelines is essential. Once this is accomplished, organizations must then develop the competencies in their individual business analysts.



Next steps:

- 1) Develop and document iob functions
- 2) Assess/baseline knowledge
- 3) Provide the training your business analysts need in order to develop the competencies outlined in this paper

The first step in ensuring that your organization's business analysts have the knowledge, skills and abilities necessary for success is to develop job functions and detailed descriptions based on this competency model. After these have been determined and approved, it's essential that organizations "take inventory," so to speak, of the competencies their business analysts already possess. There are specific assessments to test these competencies. Such tools will establish the knowledge level of individuals in each competency area and of the team as a whole. If knowledge isn't baselined, improvement will be virtually impossible to track. The competency model is an ideal reference point for such an assessment.

After you have established the business analysis knowledge and ability levels within your organization, you must implement training to improve any competencies that may be lacking.

The competency model can also serve as a validation tool for such training. It can be used to ensure that the performance improvement program is comprehensive, and that no behaviors or competencies are missed.

However, until business analysis competencies are dramatically improved within organizations, we will continue to see the same problems we've grown so accustomed to seeing. Keeping in mind the eight competencies, as well as all of the people, processes, tools and technology available to your organization, will put you on the path to better business analysis and, ultimately, more successful projects.



The ESI Solution

ESI International can help you improve the capabilities of your business analysts. We understand the unique needs of organizations like yours working to define the business analyst role. We have developed a skills-based Business Analysis curriculum that provides comprehensive, actionable training in each of the competencies described in this paper. Our academic partner, The George Washington University, has endorsed this curriculum by awarding a Professional Certificate in Business Analysis, and ESI has taken the additional step of conferring the prestigious Certified Business Analyst (CBA) credential to those who complete the program. Additionally, ESI offers BA*Appraise*®, a powerful online tool for measuring individual and team knowledge of business analysis and establishing a baseline for improvement before training.

ESI, the leading provider of business analysis, project management and contract management training, has helped some of the world's most successful companies build talent and drive results. ESI has served Fortune Global 500 companies and nearly every major U.S. government agency. Since 1981, more than 800,000 professionals from 100 countries have benefited from ESI's performance improvement programs.

Glenn R. Brûlé, an expert in the business analysis industry, was instrumental in the production of this paper.

For more information about how ESI can help your organization, call (877) 766-3337 or visit our Web site at www.esi-intl.com.



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