

# **Foundation Certificate in Business Analysis**

**BAFOUND v3.2**

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# How to use this workbook



## Activity

Alongside this icon you will find details of a group/individual activity or a point for everyone to discuss.



## Definition

Where a word with a very specific definition (or one that could be described as jargon) is introduced, this will highlight that a definition is provided.



## Expansion materials

This manual contains examinable materials. The QA++ symbol contains further information. Skip over these during class. They are not needed for the examination.



## Helpful hint

This icon guides you to tips or hints that will help you avoid the standard pitfalls that await the unwary practitioner or to show you how you might increase your effectiveness or efficiency in practising what you have learned.



## Important idea or concept

Generally this icon is used to draw your attention to ideas that you need to understand by this point in the course. Let your trainer know if you do not understand or see the relevance of this idea or concept.



## Key point

This icon is used to indicate something that practitioners in this field should know. It is likely to be one of the major things to remember from the course, so check you do understand these key points.



## Reference material

When we have only touched briefly on a topic this icon highlights where to look for additional information on the subject. It may also be used to draw your attention to International or National Standards or Web addresses that have interesting collections of information.



## Reinforcement

From time to time, there will be places within the course where it is useful for you to reinforce your understanding. This might be in the form of a question to ponder or a short end-of-chapter test.



## Useful tool

This icon indicates a technique that will help you put what you have learnt into action.



## Warning

This icon is used to point out important information that may affect you and your use of the product or service in question.

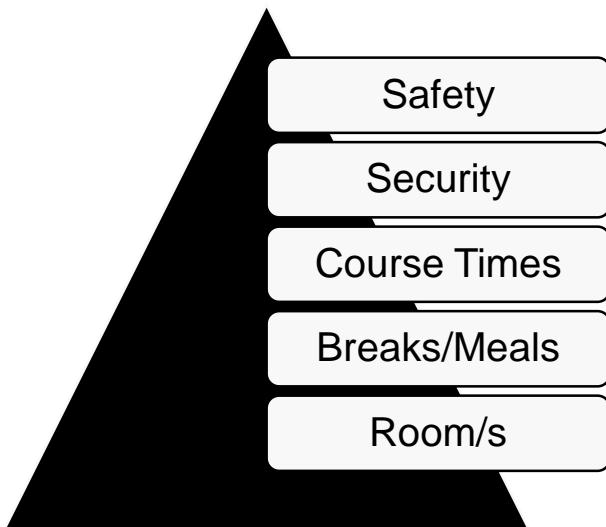
# Foundation Certification in Business Analysis

## Introduction

Welcome to QA's Foundation Certificate in Business Analysis course! During the next few days, you will learn the skills, techniques and knowledge required to pass the BCS examination in this subject. Full details of the syllabus can be found on the BCS website at [www.bcs.org.uk](http://www.bcs.org.uk)

## Course Administration

Before we begin the course, your instructor needs to take you through a number of administrative points as shown below.

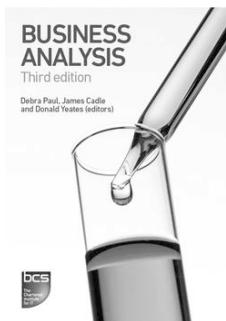


# Course Materials

## Pre-course Reading

You should have been sent a document entitled 'Pre-course Reading' prior to the course. This document is a summarised version of the BCS book and will be a useful reference guide in your revision.

## BCS Course Book: Business Analysis



Throughout this course, you will be using the BCS Business Analysis book, 3<sup>rd</sup> edition (2014).

The syllabus for this course is based on this and should be considered the main text book.

Page numbers are referenced to allow you to follow the book, if you wish, using the following format:

Pg 6



## Delegate Manual

This manual contains the slide deck and additional notes.

## Delegate Exercise and Revision Workbook

A workbook has been provided for you to enhance your revision and to use as reference when undertaking exercises and activities.

The workbook is in two sections. You will use section one during the course:

- **Section one** contains all in session exercises, sample solutions, the case study, and for evening work there are two quizzes and a practice exam paper.
  - It is recommended that you spend at least an hour per evening on reading and revision materials (such as the daily quiz and completing the practice paper)
- **Section two** contains a series of questions based on chapters 1 – 12. The intention is that you use the questions to check your own knowledge and use the materials to find the answers.
  - **This section is not a mandatory component for the course.**

# BCS Course Objectives

Holders of the BCS Foundation Certificate in Business Analysis should be able to demonstrate knowledge and understanding of business analysis principles and techniques.

Key areas are:

- The role and competencies of a business analyst
- Strategy analysis
- Business system and business process modelling
- Stakeholder analysis
- Investigation and modelling techniques
- Requirements engineering
- Business case development

# Course Content

In order to achieve the objectives, the syllabus covers the following topics:

## Day 1

- Introduction to Business Analysis
- Competencies of a Business Analyst
- Strategy analysis
- Business analysis process model
- Investigation techniques
- Stakeholder analysis and management

## Day 2

- Stakeholder analysis and management (cont.)
- Modelling business processes
- Defining the solution
- Making a business and financial case
- Establishing the requirements

## Day 3

- Documenting and managing requirements
- Modelling requirements
- Delivering the requirements
- Delivering the business solution
- Exam

# BCS Business Analysis Foundation Exam

- Closed book
- Multiple choice
- 40 questions
- 4 options per question
- 65% to pass (26/40)
- BCS administered
- PHOTO ID

**60 minutes' writing time**

## BCS International Diploma in Business Analysis

Core	Knowledge-based Specialism	Practitioner Specialism
Business Analysis Practice	Commercial Awareness	Modelling Business Processes
Requirements Engineering	Foundation Certificate in IS Project Management	Systems Modelling Techniques
	<b>Foundation Certificate in Business Analysis</b>	Systems Development Essentials
	Foundation Certificate in Business Change	Benefits Management and Business Acceptance
Both of the above plus	1 of the above and	1 of the above

# BCS Oral Examination

An Oral Examination is required to complete the Solution Development or Business Analysis Diploma

- Can be booked once all required written exams have been passed
- Must be taken within 12 months of the written notification of passing the final exam

2 BCS Examiners,  
50 minute interview

- Questions range over the latest BCS syllabus for the relevant oral exam. Each Oral has its own syllabus, and so may cover topics additional to those covered in the written examination modules taken.\*

Review BCS  
'Candidate Guidelines'

- Review the 'Candidate Guidelines' available from the BCS covering the Oral Examinations

Oral Preparation Workshops

- Attendance at a Preparation Workshop covering all the relevant syllabus topics from an 'oral examination' perspective is recommended, but not mandatory

\* See <http://certifications.bcs.org>

# 1. What is Business Analysis?

## Chapter 1: What is Business Analysis?

Page 1

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1 Target Question (Weighting 2.5%)



Topics

The origins of business analysis

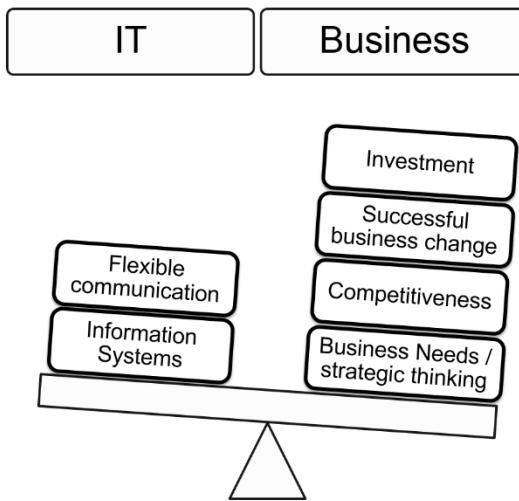
The development of business analysis

The scope of business analysis work

Taking a holistic approach

The role and responsibilities of a business analyst

# Origins of the BA Role



Pg 2 - 5



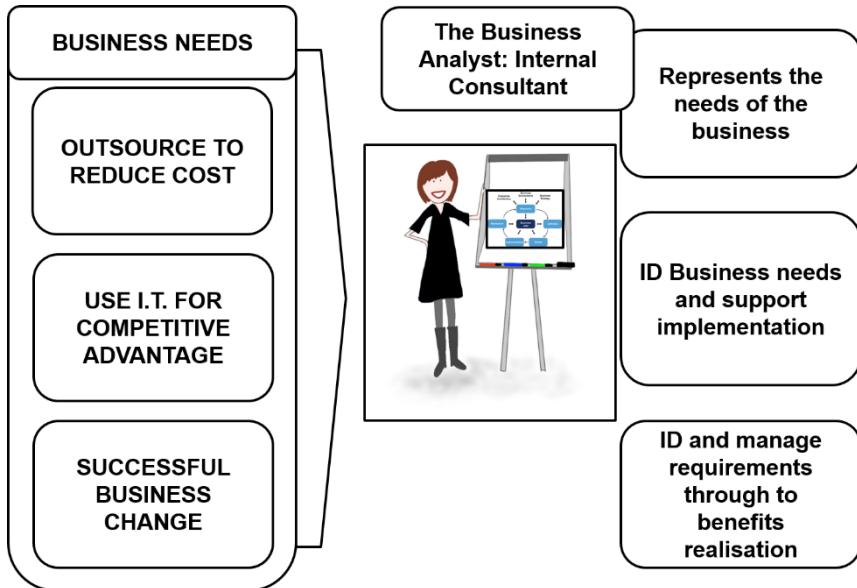
IT has enabled businesses to improve communications to the customer as well as provide a way to maximise their core business operations and processes through provision of information systems.

But this is no longer enough. Nowadays businesses must also be competitive and their infrastructure must support service delivery and business growth.

Businesses are no longer satisfied with the support provided by IT, are disappointed with where their investments in IT are going and are often faced with escalating budgets.

The perception from the business is that information systems are not delivering on predicted benefits the IT investments are created to provide.

# The Development of Business Analysis



Pg 3 - 5



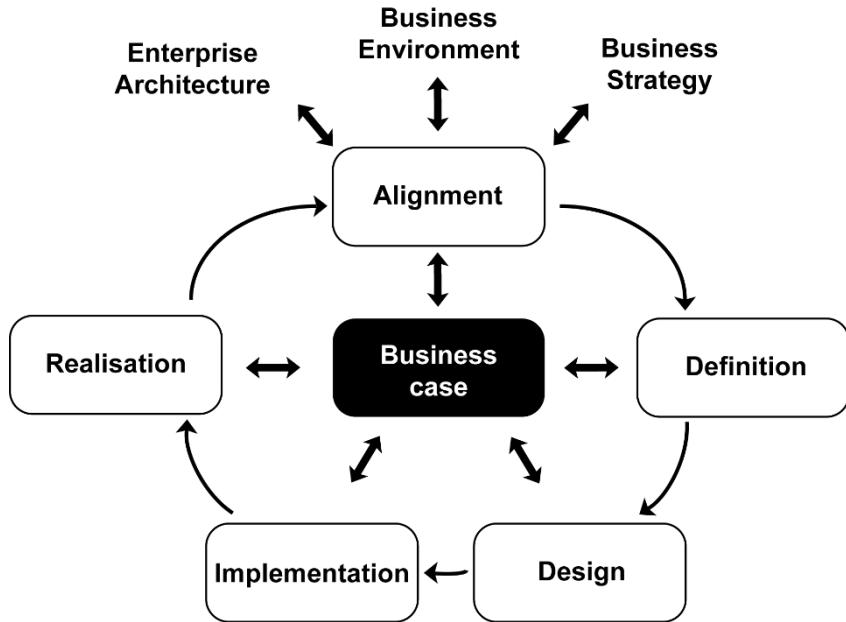
Over the last few years, many organisations have recognised that IT projects are not the answer to their changing business needs; what they need are business change programmes, which may incorporate IT projects.

With these programmes, there is the need for skills and roles to enable the successful delivery of business change.

The BA can represent the needs of the business, help identify and manage these needs through to implementation and ID and manage requirements from elicitation to benefits realisation (where applicable).



# Successful Business Change



Pg 4, 5



The early part of the lifecycle, Alignment and Definition, shown above is concerned with the analysis of the organisation and its business needs, in order to determine more effective and efficient ways of working.

Later activities are about change design and development, business acceptance testing and, following implementation, benefits review and realisation. Extensive analysis is required throughout the lifecycle and the nature of this work is clearly within the role of the business analyst.



## **Exercise 1: What do Business Analysts do?**

Refer to Exercise 1 in your Exercise and Revision Workbook

# The Role and Responsibilities of a Business Analyst

Core responsibilities:

- Investigate business systems
- Evaluate actions required to improve operation of business systems
- Document and elaborate business requirements

Additionally:

- Strategy implementation
- Business case production
- Benefits realisation
- IT requirement specification

Pg 12 - 13



Although different organisations define the role differently, there does seem to be common ground where most business analysts work:

- Investigation of business systems, taking a holistic view of the situation. This may include examining elements of the organisation structures and staff development issues as well as current processes and IT systems
- Identifying actions required to improve the operation of a business system. Again, this may require examining the organisational structure and staff development needs to ensure that they are in line with any proposed process redesign and IT system development
- Documenting the business requirements for IT system support using appropriate standards

# The Agile Approach

## How does this work for a BA?

- Support business users
- Define, elaborate and prioritise business requirements
- Collaborative, iterative approach to solution requirements
- Impact analysis of functionality against the business needs and strategic direction

Pg 10



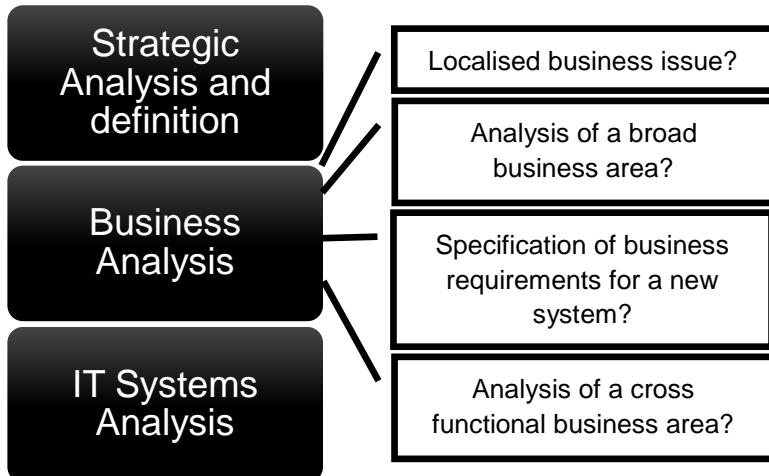
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Agile emerged in late 1990s from Rapid Application Development (RAD) and the Dynamic System Development Method (DSDM).

It was formed as a reaction to Waterfall's linear approach, which caused issues in implementing business change. These issues were primarily based around the length of time it took to deliver the project. Agile as a methodology is designed to be incremental and elaborate requirements using techniques such as prototyping.

The Agile Manifesto is on Pg 11 of the BA book.

# The Scope of Business Analysis Work



Excludes:

- Project management
- Planning techniques
- IT Service or infrastructure management

Pg 6 - 8



Business analysis has many guises and the actual work carried out will often depend on what the business needs from the analysis role.

Although strategic analysis is outside the remit of most BA jobs, it may be undertaken by some senior BAs in conjunction with senior management and strategy consultants.

Most BAs will have a role to play in supporting this activity, and will need to have access to and understand their organisation's business strategy, as their work will need to support the achievement of this.

Systems analysis is about analysing and specifying requirements for IT systems so that the organisations can evaluate software packages or develop bespoke IT systems to support their business processes. It will

involve the use of techniques such as data modelling and process or function modelling.

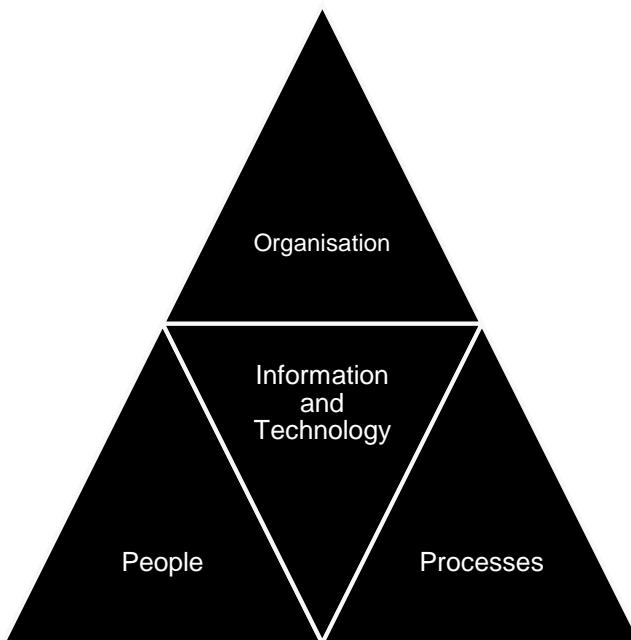
Some organisations may consider that this work is technical in nature and therefore outside the scope of the BA role, but many organisations do not have a clear distinction; which has led to many and varied job titles with "analyst" in them.

Whether the BA gets involved with the systems analysis or not, they need to have an awareness of the IT systems as they exist to meet business requirements.

Beyond the core responsibilities, there are others that may apply where the business analyst is in a more senior role or has chosen to specialise, as follows:

- Strategy implementation, where the business analysts work closely with senior management to help define the most effective business systems to implement elements of the business strategy
- More senior business analysts may produce business cases, typically with assistance from finance specialists
- Involvement in post-implementation reviews to evaluate whether the benefits claimed in the business case have been achieved
- Specifying IT requirements using standard modelling techniques

# Taking a Holistic Approach



**Mnemonic – POPIT™**

Pg 9 -10



The BA needs to consider all aspects to effectively improve the business system.

**PROCESSES** – are they well defined and communicated?

**PEOPLE** – do they have the required skills for the job?

**ORGANISATION** – is there a supportive management approach?

**INFORMATION** – Can the work be conducted effectively? Can decisions be made via relevant and accurate management information?

**TECHNOLOGY** – a supporting function for business change (not the central focus)

# The Business Analyst Role Definition

The Business Analyst acts as an internal consultant in:



*"An advisory role which has the responsibility for investigating and analysing business situations, identifying and evaluating options for improving business systems, elaborating and defining requirements, and ensuring the effective implementation and use of information systems in line with the needs of the business"*

*Business Analysis (BCS, 2014 p.12)*

Pg 12



## Role and Responsibilities

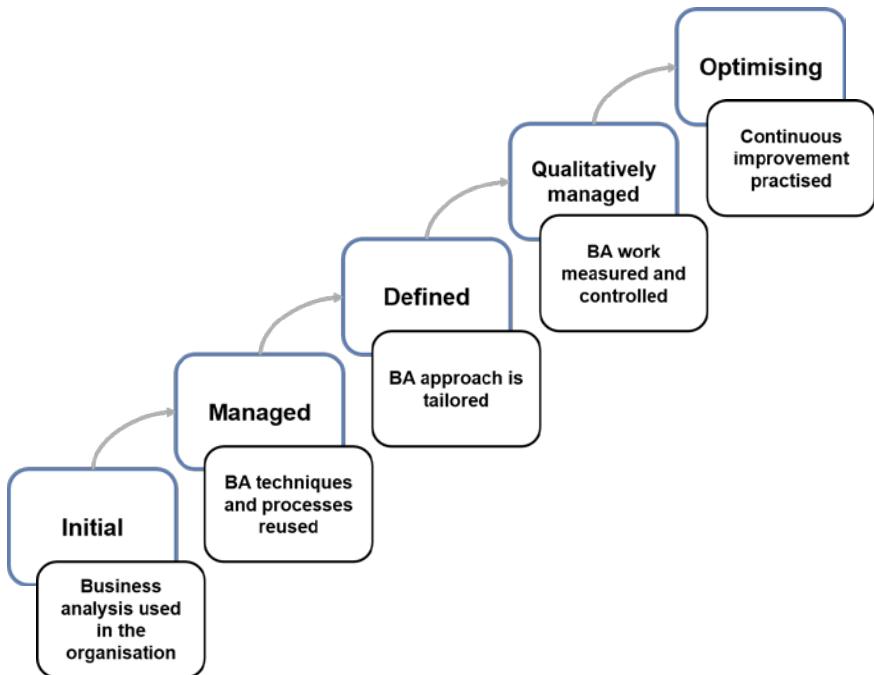
Guiding principles (the rationale) for business analysis:

- Root causes, not symptoms
- Business improvement, not IT change
- Options, not solutions
- Feasible, contributing requirements, not meeting all requests
- Entire business change lifecycle, not just requirements definition
- Negotiation, not avoidance

Pg 13



# The Capability Maturity Model Integration (CMMI)



Pg 13 - 15



## CMMI

- Developed by Software Engineering Institute (SEI)
- Approach to process improvement
- Assesses the level of maturity of an organisation at 5 levels (see above)

## BAMM

- Developed by Assist KD
- Represents the development and maturity of business analysis

# 2. The Competencies of a Business Analyst

## Chapter 2: The Competencies of a Business Analyst

Page 19



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1 Target Question (Weighting 2.5%)

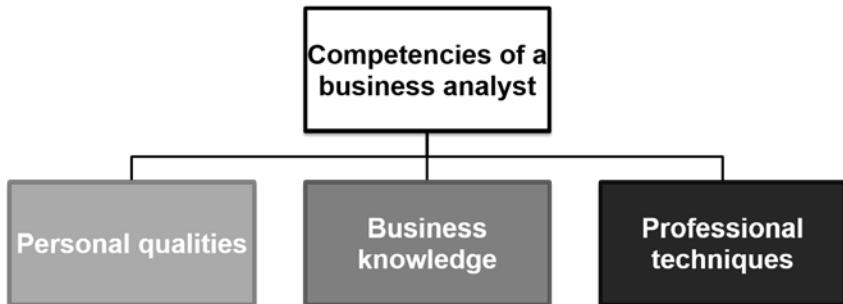
Personal qualities

Business knowledge

Professional techniques

Developing competencies

# Competencies of a Business Analyst



Pg 19



Mnemonic – PBP

## Personal Qualities

- Communication
- Relationship building
- Influencing
- Team-working and political awareness
- Analytical skills and critical thinking
- Attention to detail
- Problem-solving
- Leadership
- Self-belief
- Professional development

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## Business Knowledge

- Business finance and the economy
- Business case development
- Domain knowledge/subject matter expertise
- IT principles
- Organisation structures
- Supplier management
- Business Architecture

Pg 24 - 27



## Professional Techniques

- Project management
- Strategic analysis
- Stakeholder analysis and management
- Investigation techniques
- Requirements engineering
- Business and data modelling
- Gap analysis
- Facilitation techniques
- Portfolio management
- Benefits management
- Agile thinking

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**Supplier Management:** the Procurement team tend to manage supplier relations but there's no reason why the BA should not be aware of the contractual arrangements that are available:

- **Time and materials** – the contracted party is paid on the basis of time worked and is based on effort.
- **Fixed price delivery** – the contracted party is paid based on an agreed price.
- **Risk and reward** – the contracted party agrees to bear some of the risk in the project in order to achieve a potential reward.

## How Can I Develop My Skills?

- Training
  - BCS Professional Certifications
- Self-study
  - Reference books
  - Business publications
  - Internet
- Workplace experience
- Industry engagement
  - BCS
  - International Institute of Business Analysts (IIBA)/ Certified Business Analysis Professional (CBAP)

Pg 31 - 32



## Skills Framework for the Information Age (SFIA)



*SFIA* and *SFIAplus* –frameworks for the definition of skills and competencies in the information systems industry

- SFIAplus provides more detail than SFIA and should be treated as a standard,
- SFIA may be tailored to an organisation's needs

Pg 32 - 33

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SFIA is a not-for-profit organisation and is represented by BCS, eSkills UK, IET, IMIS and ISMF.

Several levels are defined for each skill:

1. Follow
2. Assist
3. Apply
4. Enable
5. Ensure, advise
6. Initiate, influence

See also appendix 2a and 2b (pages 36 and 37) in the book for more information relating to the BA skill levels and skill set.

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## Notes

# 3. Strategy Analysis

## Chapter 3, Strategy Analysis

Page 38



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3 Target Questions (Weighting 7.5%)

### Topics

- The context for strategy
- The definition of strategy
- Strategy development
- External environment analysis
- Internal environment analysis
- SWOT analysis
- Executing strategy

# The Context - What is Strategy?

Military origins

Businesses must deal with:

- The goal or mission of the business – where are we headed?
- The time frame – business specific definition – long term
- Organisation of resources – makes the business competitive
- The environment in which the business operates

*"Strategy is the direction and scope of an organisation over the long term, which achieves advantage in a changing environment through its configuration of resources and competences with the aim of fulfilling stakeholder expectations"*

*Johnson, Scholes and Whittington (2008)*

Pg 39 - 40



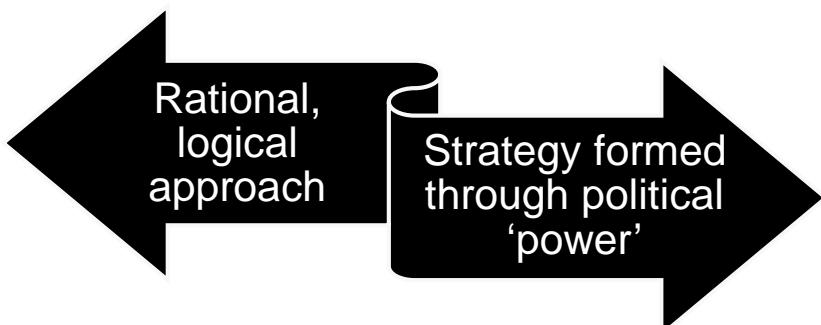
## **What is your organisation's strategy?**

Have you considered how the direction of the business you work in influences the decisions made about what to change?

The difficulty a BA faces is that it's hard to create a strategic direction when there are so many variables. If the future is so unpredictable then we have a tough job on our hands!

# Strategy Development

- Where to start?
- Where does strategic development originate?
- What kind of strategy do we develop?

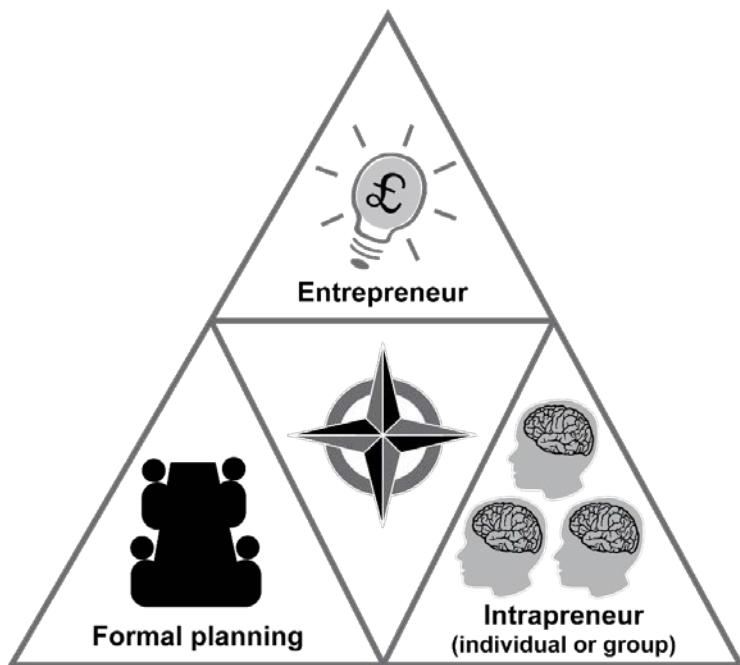


Pg 41



Within organisations strategy tends to be driven from two main influences as shown above.

# Rational, Logical Approach to Strategy



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Strategy can come from the following:

- An entrepreneurial individual – perhaps the founder of the business
- From experienced internal managers who input and evolve the strategy
- From innovation from within the organisation – the strategy emerges from the work of the organisation
- From formal planning – the use of planning and data to derive a long-term strategy

# Strategy Formed Through Internal Political Power

Strategy formed through the exercise of political 'power':



Pg 41 - 42



Strategy is derived through a prominence of a politically powerful source within the company.

- Dependency – control of resources, for example HR
- Financial resources – who controls the budgets?
- Position – is there a hierarchical organisation structure?
- Uniqueness – the group with the power is unique
- Uncertainty – the ability to best cope with the challenges

# A Written Statement of Strategy

Once the strategy is developed it is important to write it down. A written statement of strategy provides:

- Focus
- Framework
- Guide to innovation
- Performance measures
- Guidance for the outside world (communication)

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# Strategic Analysis Techniques

## External

- PESTLE
  - Scenarios
- Porter's 5 Forces
- SWOT: Opportunities and threats

## Internal

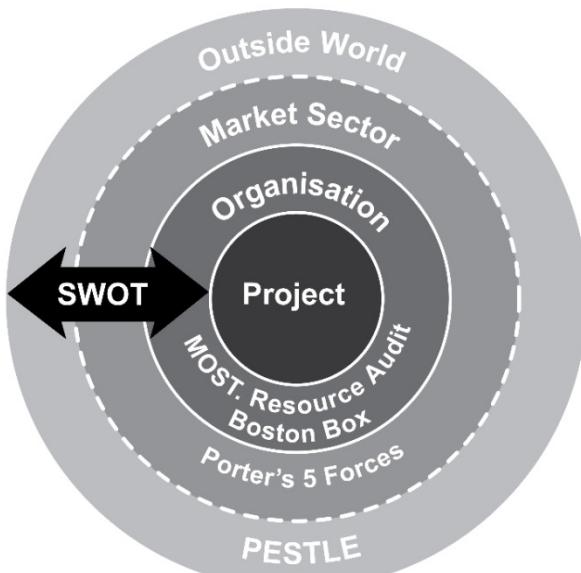
- MOST analysis
- Resource audit
- Boston box
- SWOT: Strengths and weaknesses

## Strategic Execution

- McKinsey 7-S model
- Balanced business scorecard
  - CSFs and KPIs

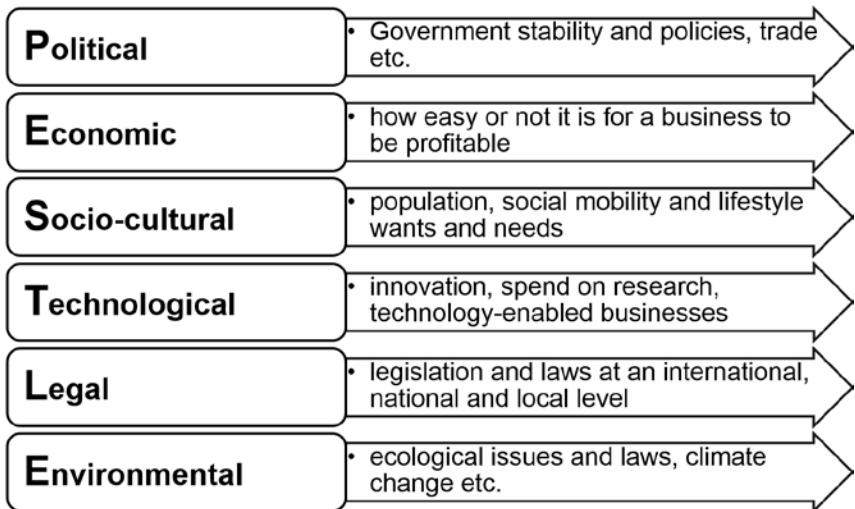
## The Business Domain

Any organisation can be affected by various external, as well as internal, factors. We can use a number of industry standard approaches to try to understand the external world.



# External Analysis – PESTLE

Factors that affect the organisation but are outside its control:



Pg 43 - 44



External factors are factors beyond the direct control of the business, but which affect the business' conduct in some way.

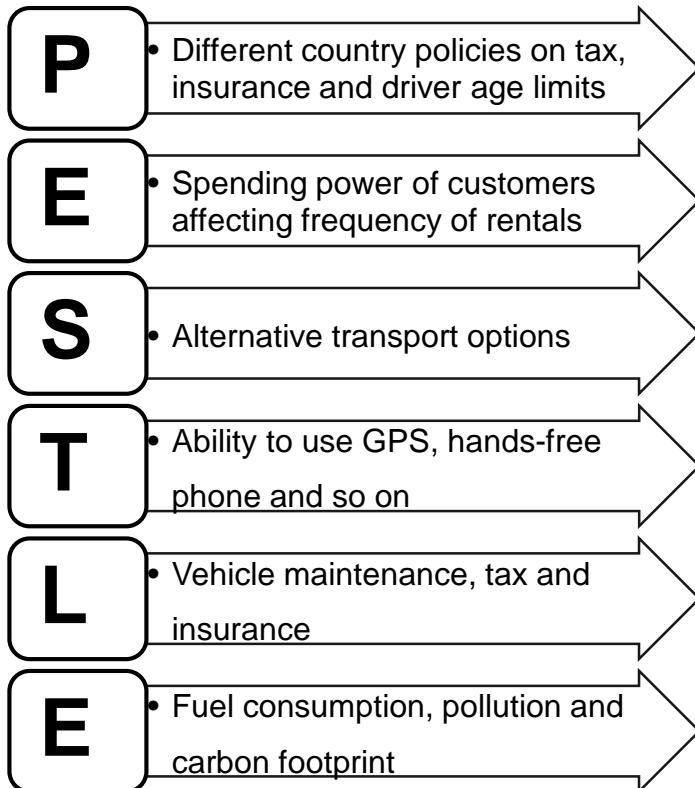
An example of an 'Economic' factor might be Central Bank Interest Rates, if the business has loans or is seeking to obtain loans in the long term.

These factors may represent Threats and/or Opportunities, when we consider them within SWOT.

There are many different ways to represent an external analysis of this type, sometimes you may see PESTEL, PEST and STEEPLE (with an extra 'E' for Ethics) but the idea is always the same – to examine different factors which may influence the external business environment.

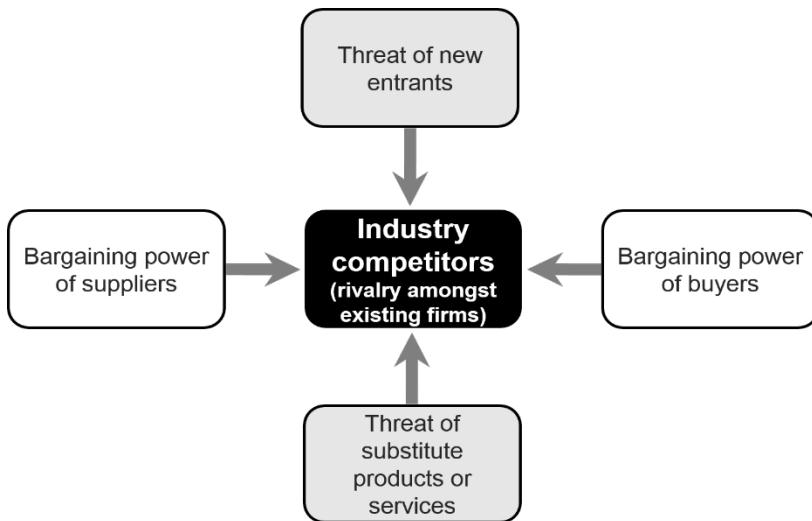
# External Analysis - PESTLE Example

Vehicle Rental Company:



# External Analysis – Porter's 5 Forces

A framework for business management to determine the attractiveness of a marketplace.



Pg 45

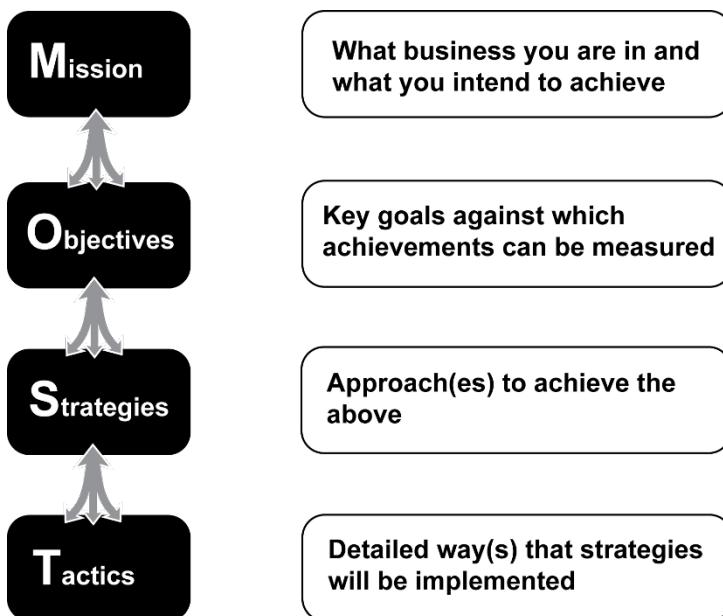


The Porter 5 forces analysis is a framework for business management developed by Michael Porter in 1979, to determine the attractiveness of a marketplace.

This framework can help to identify strategic targets. For example, if suppliers are powerful, then our strategy should be to reduce this power – for example, by acquiring the suppliers involved (vertical integration).

What could be done about strategic threats from the other forces?

# Internal Analysis – MOST



Pg 47 - 48



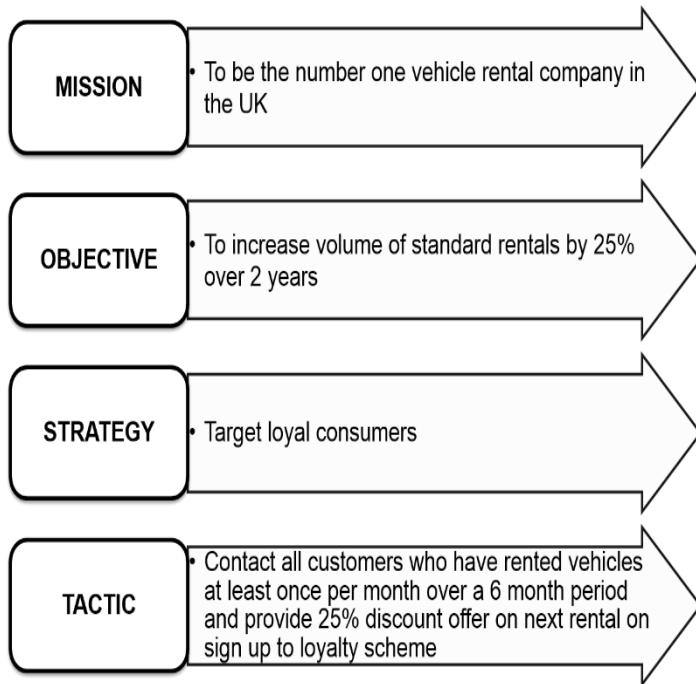
 One of the key tools used in exploring corporate strategy and Strategic Planning is the MOST Analysis. This helps to clarify what business the organisation is in and what it intends to achieve (Mission), the key goals which will help to achieve this (Objectives), the approach that is going to be taken to achieve these (Strategies) and how these strategies are going to be put into action (Tactics).

Businesses fall into many traps by attempting to tackle strategy only internally:

- Getting distracted from moving the business forward by day-to-day actions or demands from customers, suppliers and competitors
- Failing to clarify where it wants to get to and in what timescale
- Omitting to get board and management agreement to this mission

- Not clarifying the key objectives that need to be reached (and in what timescale) for the mission to be successful
- Not getting external and objective assistance in analysing the strategic options available to satisfy the key objectives
- Missing out the strategy stage altogether by going straight from objectives to tactics which leads to a lot of 'dead ends'
- Not ensuring that everything done at tactical level helps to ensure success of the strategies
- Failing to properly define timescales, responsibilities, monitoring and control procedures to ensure that implementation moves forward at the necessary speed

## MOST Example



Note that there will only be one Mission, but this may lead to several Objectives, each of which may lead to several Strategies, each of which may lead to several Tactics.

# Internal Analysis – Resource Audit

‘Inside-out’ approach

Competitiveness – *the ability to create new products and services from core competences*

Competency resource audit

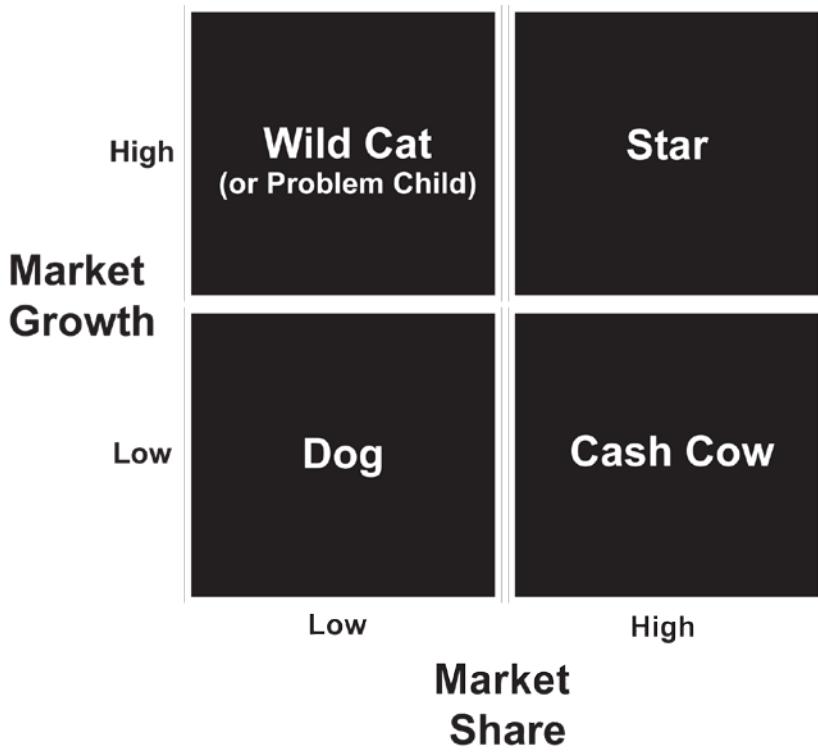
- Tangible resources
  - **Physical** (buildings, plant, equipment, land)
  - **Financial** (cash-flow, investment, market fluctuations)
  - **Human** (people, expertise, adaptability, motivation)
- Intangible resources
  - **Know-how** (use of technology or resources specific to business)
  - **Reputation** (brand image)

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## Internal Analysis – Boston Box



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Also known as portfolio analysis or a portfolio matrix.

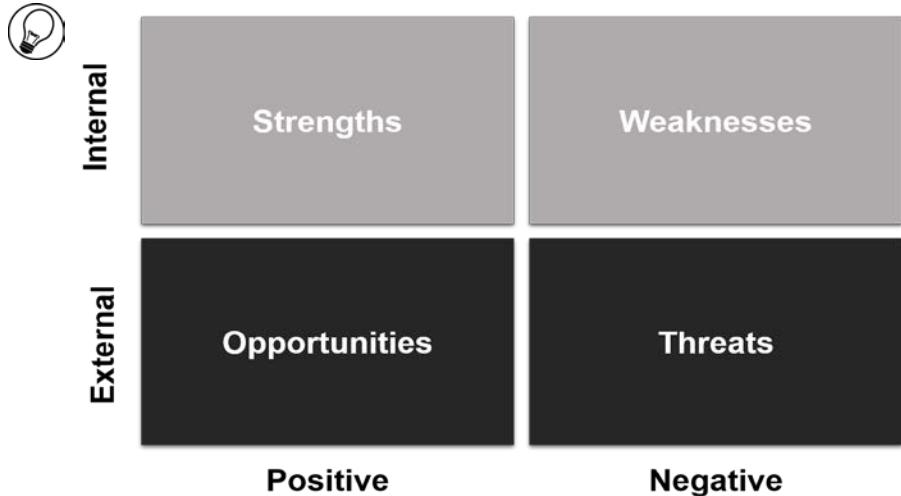
**Wild cat** = new entrant

**Star** = growth

**Cash cow** = mature

**Dog** = decline

# SWOT Analysis



Pg 49 - 50



SWOT is a technique for bringing together the results of investigating both the internal and external environments.

There are four lists initially – Strengths, Weaknesses, Opportunities and Threats.

Internal:

- Strengths: what we already do well
- Weaknesses: what we need to improve

External:

- Opportunities: external things we can exploit
- Threats: external things we need to be aware of



## **Exercise 2: Carry out a PESTLE and a SWOT**

Refer to Exercise 2 in your Exercise and Revision Workbook

# Executing Strategy

The context for strategy execution: five key issues

- **Time:** how quick?
- **Scope:** how big is the change?
- **Capability:** change process in place?
- **Readiness:** responsiveness?
- **Strategic leadership:** is there a strategic leader?

## Tools

- McKinsey 7-S model
- Balanced Business Scorecard
  - Critical Success Factors and Key Performance Indicators

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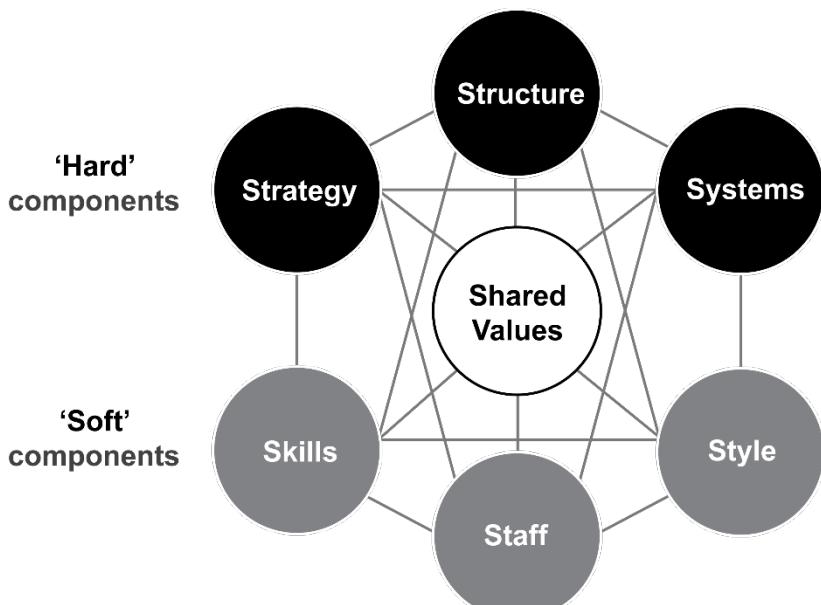


## A note on strategic leadership

When we talk about a strategic leader in this context we are talking about someone who has a key role in the change. Someone who:

- Challenges the status quo
- Established and communicates a clear vision
- Models the way – gets stuck in and shows everyone how it's done
- Empowers people
- Celebrates success

## McKinsey 7-S

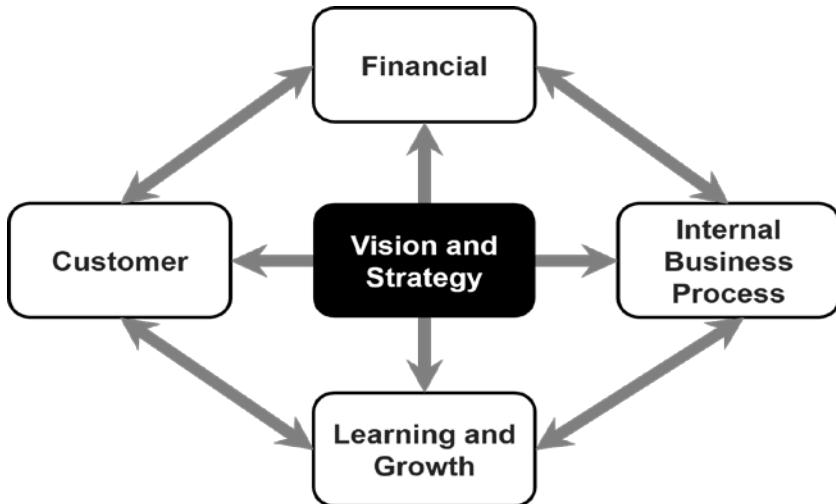


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This tool helps to understand the impact of changes by viewing the organisation as seven components all connected to each other. They can be seen as levers.

# The Balanced Business Scorecard (BBS)



The BBS helps us ensure we consider more than just financial components of a strategy – components are interlinked.

It is a framework for identifying CSFs and KPIs.

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## Mnemonic – CLIF



Balanced Business Scorecard is a method and a tool which includes:

- A strategy map where strategic objectives are placed over four perspectives in order to clarify the strategy and the cause and effect relationships that exists among them.
- Strategic objectives which are smaller parts of the strategy, are interlinked by cause and effect relationships in the strategy map.
- Measures directly reflecting strategy. Their prime purpose is to measure that the desired change or development defined by strategic objectives actually takes place.
- Strategic initiatives that constitute the actual change as described by strategic objectives.

The scorecard drives implementation of strategy using the four perspectives shown above.

Specific measures are chosen based upon the organisation's goals. Typically organisations "get what they measure" so care in creating measures and revisiting the measures regularly is recommended by most practitioners.

The method helps separate creation of strategy from strategy implementation, which can push power downwards while making the leaders' jobs easier. It can also help detect correlation between activities. For example, the process objective of implementing a new telephone system can help the customer objective of reducing response time to telephone calls, leading to increased sales from repeat business.

Companies are using the scorecard to:

- Clarify and update budgets
- Identify and align strategic initiatives
- Conduct periodic performance reviews to learn about and improve strategy

# Critical Success Factors and Key Performance Indicators

CSF – the things an organisation must be good at in order to succeed

- For example, 'excellent customer service'



KPI – the things an organisation measures to find out how well it is doing

- For example, Customer Satisfaction rating of 85% or higher each month



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## Notes

# 4. Business Analysis Process Model

## Chapter 4, The Business Analysis Process Model

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2 Target Questions (Weighting 5%)

### Topics

An approach to creative problem-solving

The Process Model stages

Objectives of the Process Model

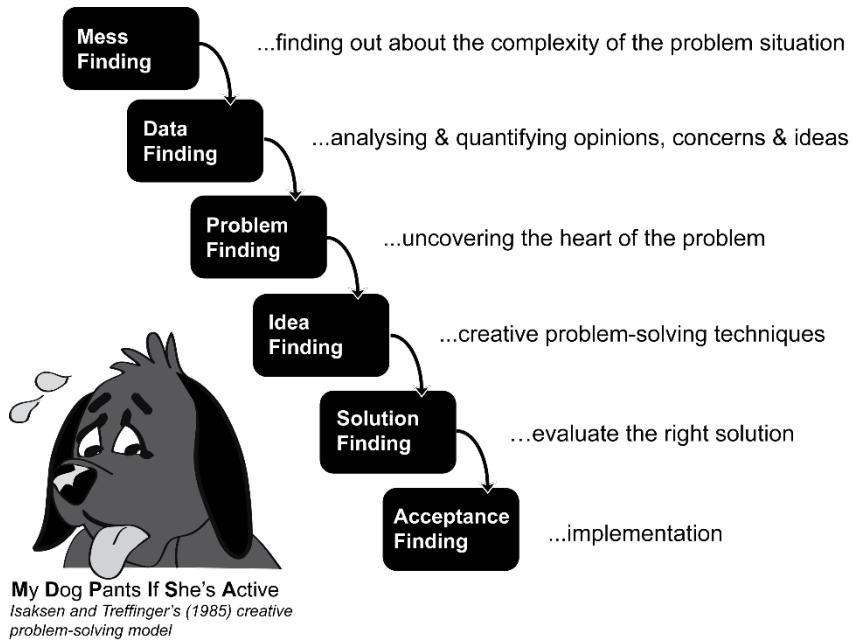
Procedures and Techniques used



### **Exercise 3: Consider the problems with change projects**

Refer to Exercise 3 in your Exercise and Revision Workbook

# An Approach to Creative Problem-solving



Pg 56 - 58



One of the issues faced by BAs is that we must (and indeed, are expected to) examine the entire problem area to provide a thoughtful, and often, creative approach to problem solving.

Business analysts need to have an understanding of the entire business area (and beyond), so that they can effectively understand the business problem and develop innovative ideas to cater for the business needs (as established in the strategic analysis/alignment phase).

Isaksen and Treffinger's problem solving model allows us to frame the approach by first understanding the issues and related complexities. This should prevent us from jumping to conclusions which may not be correct.

(This links back to the Business Analysis rationale criteria ‘options not solutions’ and ‘root causes, not symptoms’)

- The first three stages are about finding out.
- The next two are about developing solutions.

**Mnemonic – My Dog Pants If She's Active**



# Contextualising the Business Analysis Work

## Terms of Reference / Project Initiation Document

The Terms of Reference (TOR) helps to provide a framework for the project. It is useful to the Business Analyst as it helps to define what needs to be done.

A useful structure for the TOR, which helps to clarify the context, is OSCAR:

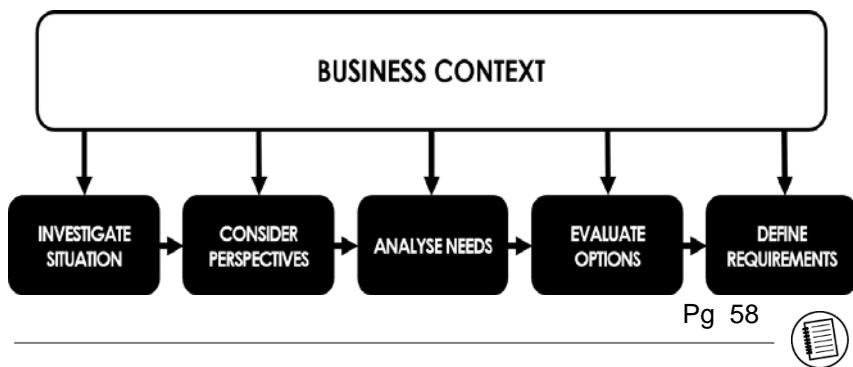
- Objectives
  - The Business Objectives and the Project Objectives
  - Must be SMART
- Scope
  - What is IN SCOPE for the project (i.e. within the project boundary)
  - What is OUT OF SCOPE for the project (i.e. outside the project boundaries)
- Constraints
  - Any constraints that will impact the project, timescales, geographical needs etc.
- Authority
  - Who is responsible for signing off and making decisions with regards to the project?
- Resources
  - Who will carry out the project?

Sometimes you will see BOSCARD used to describe the TOR instead of OSCAR (B=Background, D=Deliverables).

The Project Initiation Document (PID) or similar, is usually seen as the document which forms the contract for the project and is a project management artefact.



# Business Analysis Approach



The model shown above sets out key stages for a business analysis project with each stage representing areas/challenges that may need to be considered.

Note that not all projects will require all stages.

One of the most important aspects of a business analysis project is to decide what the focus is and what areas need investigation.

This is usually achieved through planning and estimation.

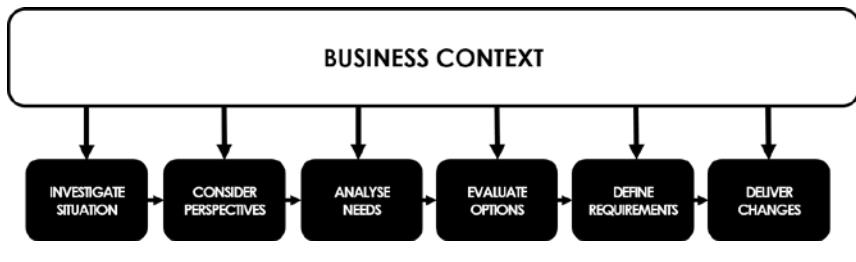
## Objectives of the BA Process Model

Each stage has an objective and these are covered in the chapters we will follow for the remainder of the course:

- **Investigate Situation** – uncover issues and problems, define scope for the investigation via a ToR (OSCAR) – see chapter 5
- **Consider Perspectives** – analysing stakeholders and understanding their perspectives – see chapter 6
- **Analyse Needs** – In this stage we need to undertake a gap analysis. We analyse where the improvements are required and look at activities and business processes – see chapter 7 (and for further information chapter 8)
- **Evaluate Options** – With the information gathered so far we must consider what is possible, that is, assess the feasibility and create a business case to document the options and gain agreement – see chapter 9
- **Define Requirements** – this stage considers the areas of the business relevant to the POPIT model – see chapters 10, 11 and 12 (some information around this subject is also covered in chapter 7)

## Extended BA Process Model

- **Deliver Changes** – this stage is about implementation of the changes and, as it is often not solely the responsibility of the Business Analyst, it is covered as an extension of the Business Analysis Process Model – see chapters 13 and 14



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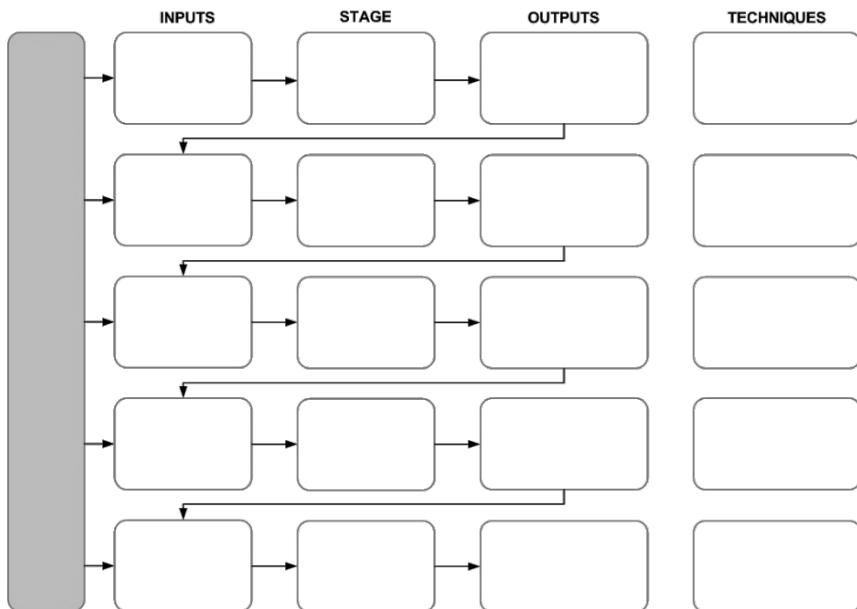


# Procedures and Techniques for the BA Process Model Stages

As we go through each of the stages in the chapters referenced in the previous page, we will look at the procedures used to meet the objectives of each stage and look at the tools and techniques that will facilitate this process.

You will find a revision aid (see below for the format) in the Exercise Workbook which you can fill in as we encounter each stage.

## Revision Aid



I Call All Elephants Dumbo



# 5. Investigation Techniques

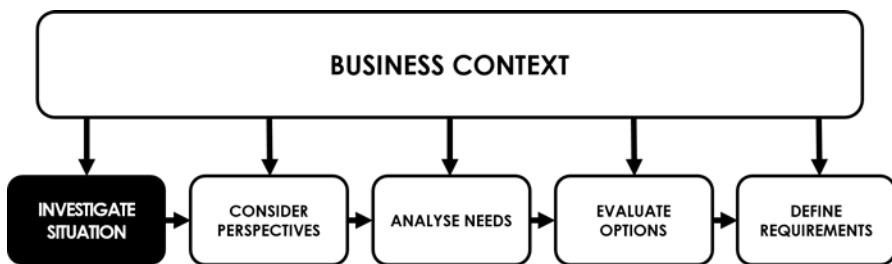
## Chapter 5, Investigation Techniques

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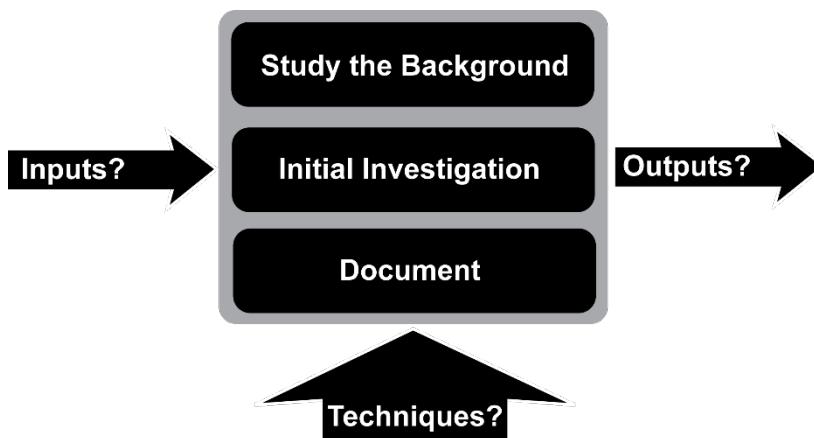


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6 Target Questions (Weighting 15%)



Topics



# Study the Background

Research the business area!

Lots of areas available to us:

- The Company website/competitor/supplier websites
- Company reports
- Procedure manuals and documentation
- The Organisation Chart

Even social media nowadays.

Different investigation techniques available:

- Qualitative
- Quantitative

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There are a large number of investigative techniques available for business analysts.

**Qualitative** techniques include Interviewing, workshops, focus groups etc.

Scenarios and prototyping are particularly appropriate for uncovering details of processing and data requirements.

Observation may be formal, protocol analysis, shadowing or ethnographic study.

**Quantitative** techniques include questionnaires, special purpose records, activity sampling and document analysis

# Key Investigation Techniques

## Interviews

**A structured discussion between the analyst and a stakeholder to elicit facts and information about the business situation and their role in it.**

Usually a one-to-one meeting

- Building rapport
- Yielding important information
- Confidentiality



- Time consuming
- Information must be verified
- Right people interviewed
- Asking the right questions



### Preparation

- Who? (STOP)
- Why?
- What?
- When? And where?



### Conduct

- Open
- Body of the interview
- Close



### Follow up

- Write up notes
- Distribute and check

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Interviewing is an excellent elicitation technique and a key analysis skill. The analyst uses the interview as a technique for gathering information for requirements and to quickly build a rapport with the stakeholders. The interview is especially useful when trying to understand the business area under investigation in order to understand the problems and elicit the requirements.

Among the advantages of using an interview is that it enables us to build a working relationship with key stakeholders as we are in a confidential, one-on-one setting with them. If we were to rely exclusively on interviews, it would be very time consuming, and each interview only gives us one stakeholder's point of view.

## Interviewing Technique

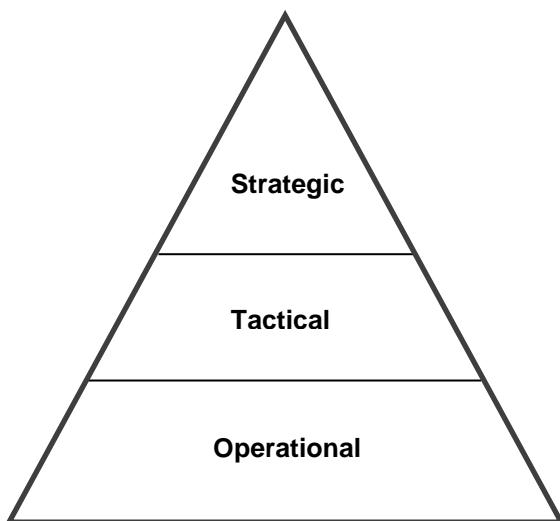
Interviewing guidelines:

- Develop an overall interview plan
- Obtain approval to talk to the users
- Plan to make effective use of time
  - Who are we going to talk to (STOP)?
  - Why do we need to talk to them?
  - What are we going to say?
  - When and where?
- Determine what the user is interested in
- Use an appropriate interviewing style
- Consider possible forms of resistance during an interview



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## Observation

**Watch what people do either by formal agreement or informally by just 'wandering about'**

- Better understanding of problems
- Seeing the task in the user's environment
- Uncovering tacit knowledge

- Users may feel self-conscious
- You may not see everything you need to see...

### Formal Observation

Watch a task

Needs prep

Suited to manual tasks

### Protocol Analysis

Describing each step for a task

Can uncover tacit information

E.g. Learning to drive

### Shadowing

Following a user

Uncovers tacit knowledge

### Ethnographic Studies

Extended period of time

Can unravel complexity



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Watching people actually carrying out the tasks rather than just asking about them is a very useful way of getting information about the work practices and environment.

This can be done in a number of ways. If you are going to carry out observation it is important to get the agreement of those being observed to avoid possible industrial relations problems.

Formal:

This involves watching staff carrying out specific tasks. It is important for the staff to be prepared for your observation, and to emphasise that you

are watching to gain an understanding of the tasks and not assess performance.

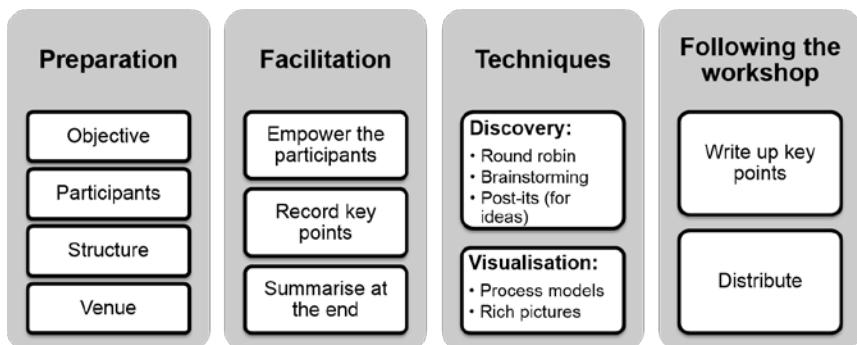
There is a danger that staff may perform the tasks "by the book" rather than how they would normally if they think you have been sent by management.

## Workshops

**A structured meeting in which a group of appropriately knowledgeable and motivated people are moderated by an impartial facilitator to achieve an agreed objective and gain consensus**

- Gain a broad view of area
- Increase speed
- Obtain buy-in and acceptance
- Gain consensus

- Time-consuming
- Needs careful facilitation
- Participants need required level of authority



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A facilitated workshop is a team-based information gathering and decision-making technique designed to accelerate business planning and development. It is an interactive communication technique involving experienced and empowered personnel working in one or more sessions run by an independent facilitator.

A workshop is a process to be implemented when there is a requirement to make decisions, explore ideas and exchange knowledge to solve a business problem. Facilitated workshops are an excellent forum for requirements analysis and negotiation.

The strength of the facilitated workshop technique is that it enables the exchange of information between key individuals and enables them to reach decisions that are mutually acceptable. A workshop provides a forum for exchanging views and achieving consensus decisions in a structured framework across and within areas of the business. Clear deliverables are produced during the workshops enabling all attendees to review decisions taken by the group.

Badly planned and conducted workshops could be a complete waste of everyone's time.

The symptoms of a bad workshop include: A vague, ambiguous statement of the objectives, a lack of clear focus and direction, a lack of consensus and commitment to the solutions, time-wasting, side discussions, arguments etc.

## Hothouse Workshops and Focus Groups

### Hothouse workshops

- Focus on a specific business problem
- Lean and Agile principles used
- Intense, iterative approach
- Prototype-driven
- Typically geared towards innovation
- Often at executive level

### Focus Groups

- Business and market research
- Common interest, sample group
- Attitudes and opinions on a specific topic
- Findings need to be assessed after the focus group
- Not aiming for consensus

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## Scenarios

### Tell a 'visual' story of a task or transaction

- Traces from trigger to outcome based on pre-defined 'control' conditions
- Can help discover alternative paths

- All steps included
- Tacit knowledge is uncovered
- Top down approach
- Can be used for developing prototypes and test scripts



- Time-consuming
- Can become overly complex



### Process

ID task

ID steps and sequence

Define control conditions

ID exceptions

### Documenting

Use Case Descriptions (from UML) are popular

Storyboards

Activity diagrams

Task modelling/decision trees

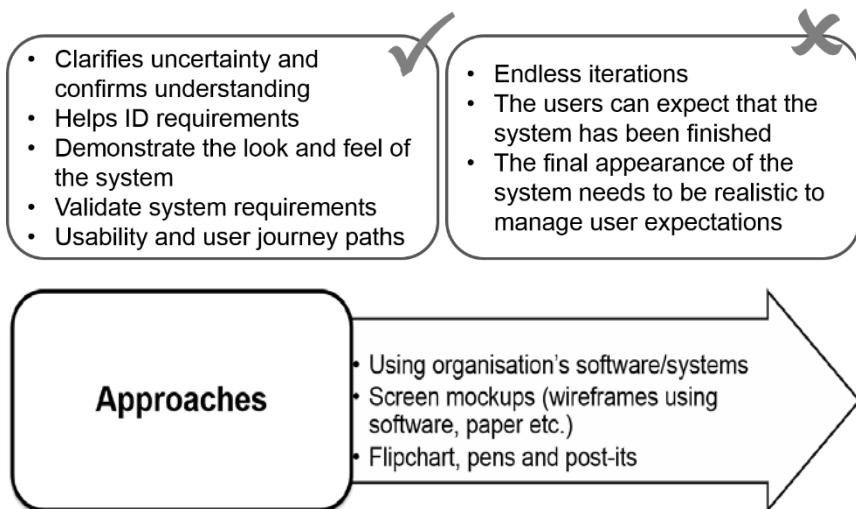
Pg 87 - 90



## Prototyping

**Creating a 'demonstration system' to help clarify vague requirements and/or to enable stakeholders to visualise their business needs**

Closely linked to scenarios

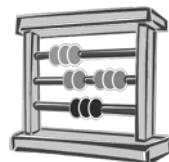


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## Quantitative approaches

- **Questionnaires or Surveys**
  - More effective than interviews if there are many people
  - Care needed with the design
    - Heading (purpose)
    - Classification section (user category)
    - Data section
  - Response rate can be low
- **Special-purpose records**
  - 'Five-bar-gate' tally chart etc.
  - Self-observation for users
  - Requires buy-in from the ones doing it
  - Must be realistic to do during the working day
- **Activity sampling**
  - More quantitative form of observation
  - How are people spending time?
  - How they apportion time to different activities
  - Five steps:
    1. Identify what activities to record
    2. Decide frequency and timings
    3. Visit and record what happens
    4. Record the results
    5. Analyse the findings
- **Document analysis**
  - Reviewing and analysing source documentation such as forms, screen layouts and reports
  - Helps to uncover information:
    - How it is completed
    - Who uses it
    - When it is used
    - How many are used/produced
    - Document retention
    - Details included



Pg 92 - 96



## Suitability of Techniques

Investigation technique	Understanding the situation	Waterfall	Agile
Interview	✓✓	✓✓	✓✓
Observation	✓✓	✓✓	✓
Shadowing	✓✓	✓✓	✓
Workshop	✓✓	✓✓	✓✓
Hothousing	✓	✗	✓✓
Scenarios	✓	✓✓	✓✓
Prototyping	✓	✓✓	✓✓
Questionnaires	✓✓	✓✓	✗
Special Purpose Records	✓✓	✓✓	✗
Activity Sampling	✓✓	✓✓	✗
Document Analysis	✓✓	✓✓	✗

### Key

- ✓✓ Excellent technique for this purpose
- ✓ Pretty good
- ✗ Not good at all

Suitability of techniques for:

- Gaining an understanding of the situation
  - Waterfall requirements elicitation
  - Agile requirements elicitation

# Documenting the Current Situation

Once investigated, findings need to be recorded

- Written reports for formal documentation

Graphical techniques are quicker to produce. Examples are:

- Rich pictures
- Mind maps
- Also useful, but not in the syllabus (see QA++ in Appendix 5.1):
  - Business process models
  - Spaghetti maps
  - Fishbone (Ishikawa) diagrams
  - Business needs log

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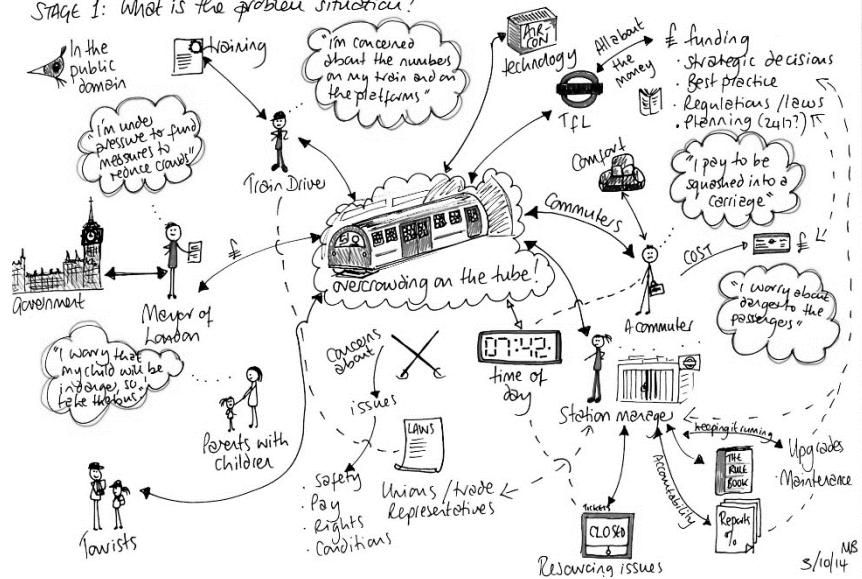
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## Rich Pictures – Example



STAGE 1: What is the problem situation?



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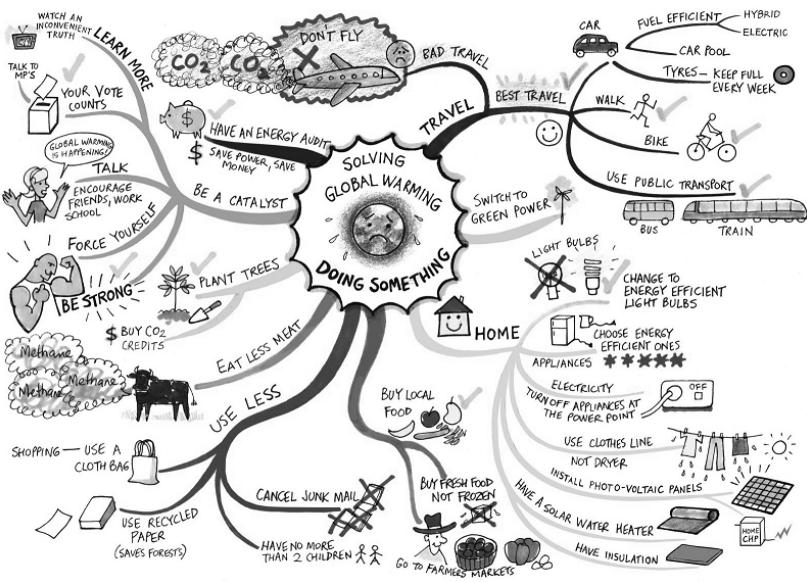
Checkland recommends a rich picture to represent the current business situation, but mind maps, fishbone diagrams and other tools can be used instead. However, techniques from hard systems such as data flow diagrams or object models are not sufficiently versatile or 'rich'.

One of the problems with investigating business situations is that they are rarely clear cut. Although some of the structured modelling techniques provide a clear view of one perspective (for example, data or process), they are not able to show the range and variety of issues that may be uncovered. Interpersonal, political and cultural issues are rarely documented, even if they are evident. If such issues are not taken into account then recommendations may be rejected and the implementation of solutions may be deeply problematic. Rich pictures provide a free-format approach to allow analysts to document whatever is of interest or significance. This often includes details of processes, stakeholders, issues raised and the culture inherent in the situation.

## Elements of a rich picture

- Structure
  - Include only enough structure to allow you to record the process and concerns. Include all the people who will use or be affected by the new system
- Process
  - Do not attempt to record all the intricacies of process; a broad brush approach is usually all that is needed
- Concerns
  - Caricature the concern in a thought bubble
- Use the language of the people depicted in it
  - To make the rich picture comprehensible to the people involved
- Use any pictorial/textual device that is suitable
  - There is no single way of drawing a rich picture. An analyst may find different styles useful in different situations

## Documenting Techniques – Mind Maps



Pg 99



A mind map is a tool for summarising a lot of information in a simple visual form that highlights connections between different ideas and topics.



## Appendix 5.1

### Documenting techniques

Pg 99 - 101

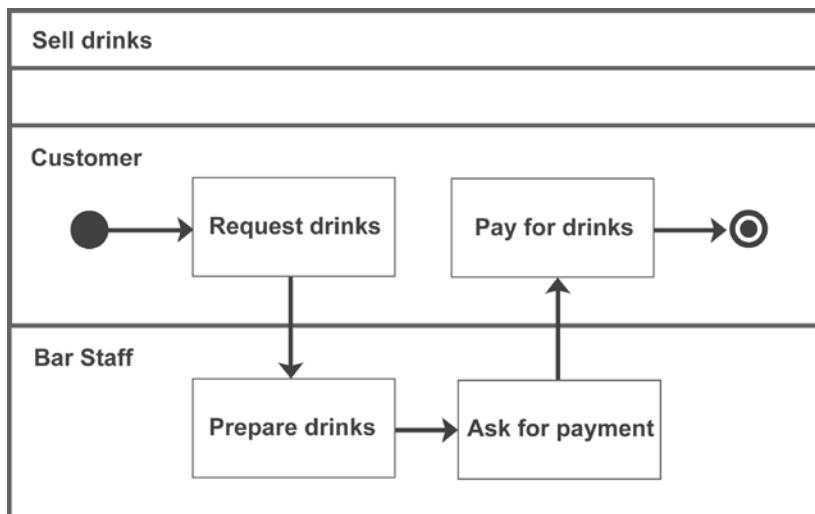


These are not listed as requirements in the syllabus but are nonetheless useful for documenting.

- Business process models – swim lane diagrams, covered in chapter 7
- Spaghetti maps – show stakeholder movements when performing tasks
- Fishbone diagrams
  - Also known as an Ishikawa diagram
  - Also known as root cause analysis
    - Start with the problem
    - Work from right to left, adding possible areas for causes of the problem

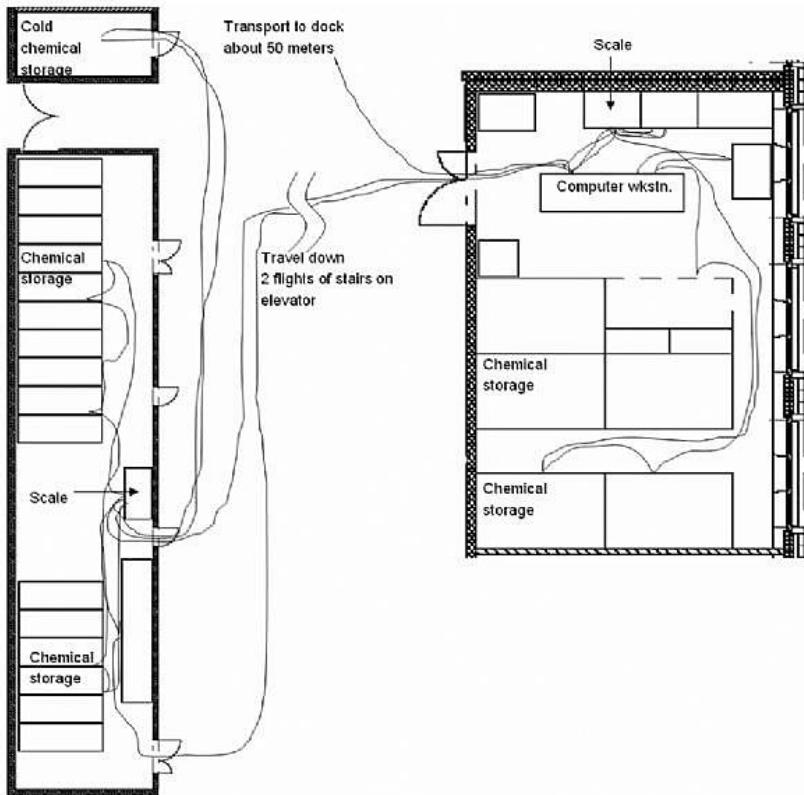
#### Business process models

Swim-lane diagrams show actors, tasks and flow



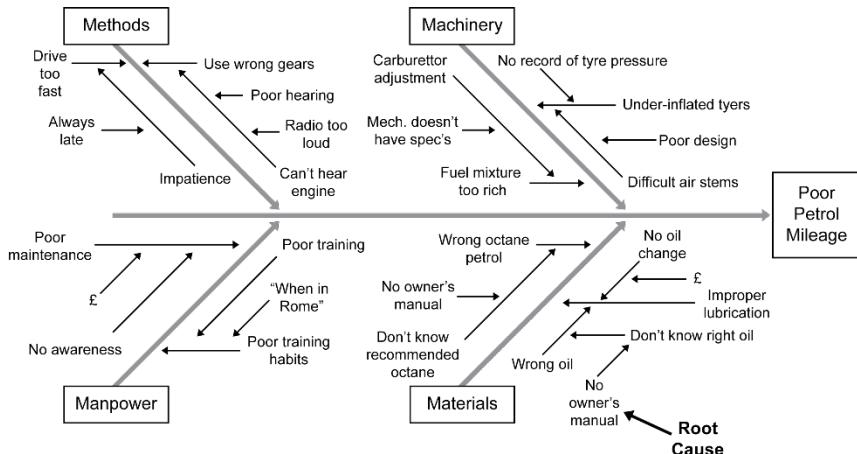
*Business process modelling is covered in detail in the Modelling Business Processes course but we will look at a high level in chapter 7.*

## Spaghetti maps



*Based on the movements and interactions of the stakeholders with their environment. So called because the resulting lines which represent the movement resemble a plate of spaghetti at the end! Often used in warehouses, factories and kitchen design.*

## Fishbone diagram



An Ishikawa diagram can be helpful to get the group to think in a structured way about issues

The fishbone is built up by asking the question 'Why' after each contribution, to gain fuller understanding.

## Business needs log

- Business needs include:
  - Key business aims that must be met
  - High-level requirements for IT functionality
  - Issues to be addressed
  - New facilities that the solution must provide

<b>Business need</b>	<b>Source</b>	<b>Comment</b>
Drinks must be charged for accurately	Landlord	Current estimates based on cash flow indicate that drinks are being undersold by an average 10%

*Once the causes of problems have been identified, we can start thinking about how we will address these problems. These early findings can be documented on a Business Needs Log so that they do not get lost or forgotten in the later, more detailed analysis and requirements engineering stages. The log could include the business aims of the new process/system, high-level functional requirements for any IT solution, issues and new facilities required.*

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## Notes

# 6. Stakeholder Analysis and Management

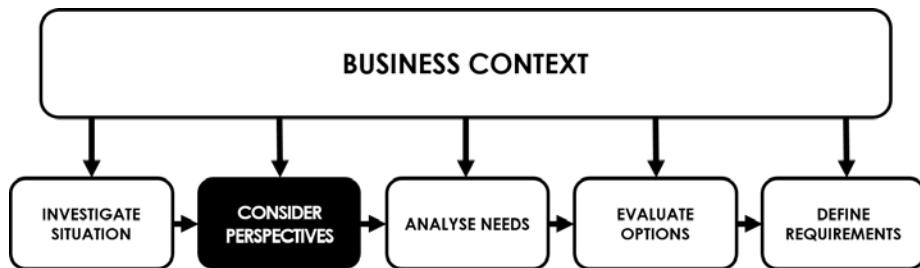
## Chapter 6, Stakeholder Analysis and Management

Page 103

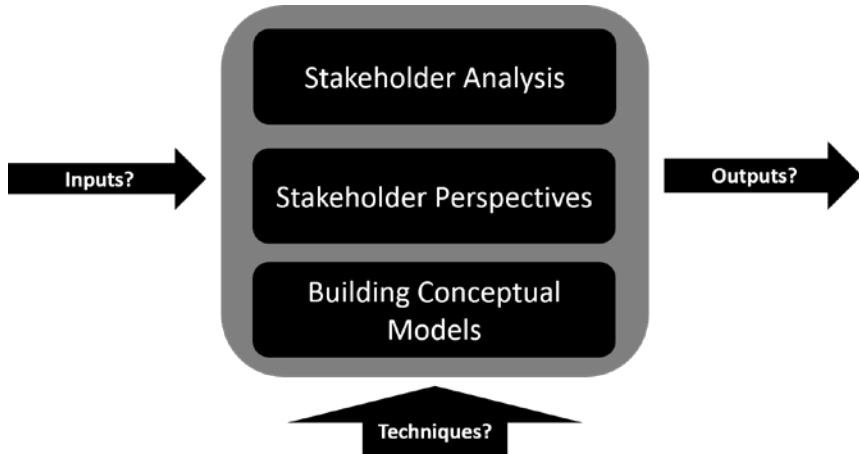


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4 Target Questions (Weighting 10%)



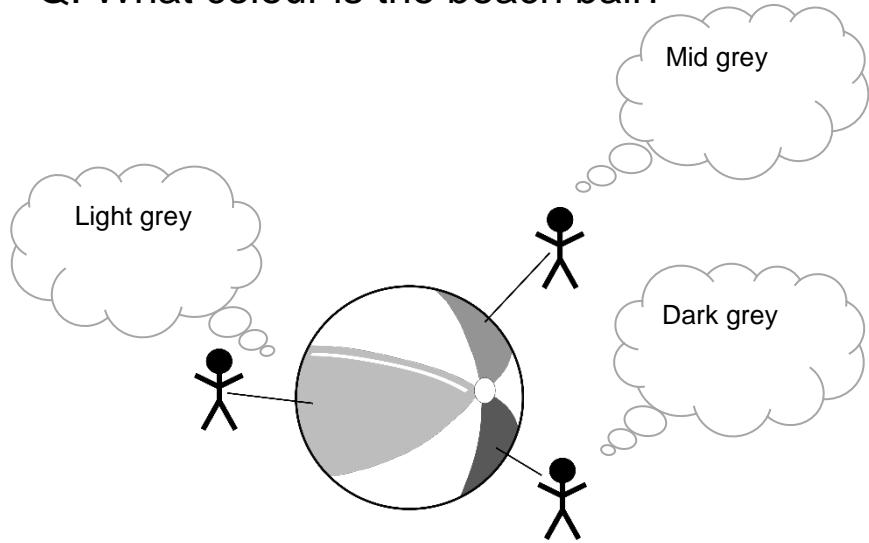
Topics



# Stakeholder Analysis and Management

- Stakeholder categories and identification
- Analysing stakeholders
- Stakeholder management strategies
- Managing stakeholders
- Understanding stakeholder perspectives
- Business activity models

Q: What colour is the beach ball?



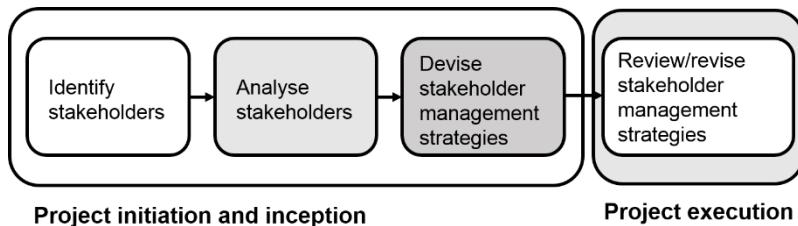
# Stakeholder Identification

*"Stakeholders are those who have an interest in, or may be affected by, the issue under consideration. They may be internal to an organisation or operate externally to the organisation."*

Pg 103 - 104



# Stakeholder Management in the Project Lifecycle



Pg 103



Many change programmes fail because stakeholders are viewed as being internal only, but changes can affect suppliers, customers, local business, transport systems, etc.

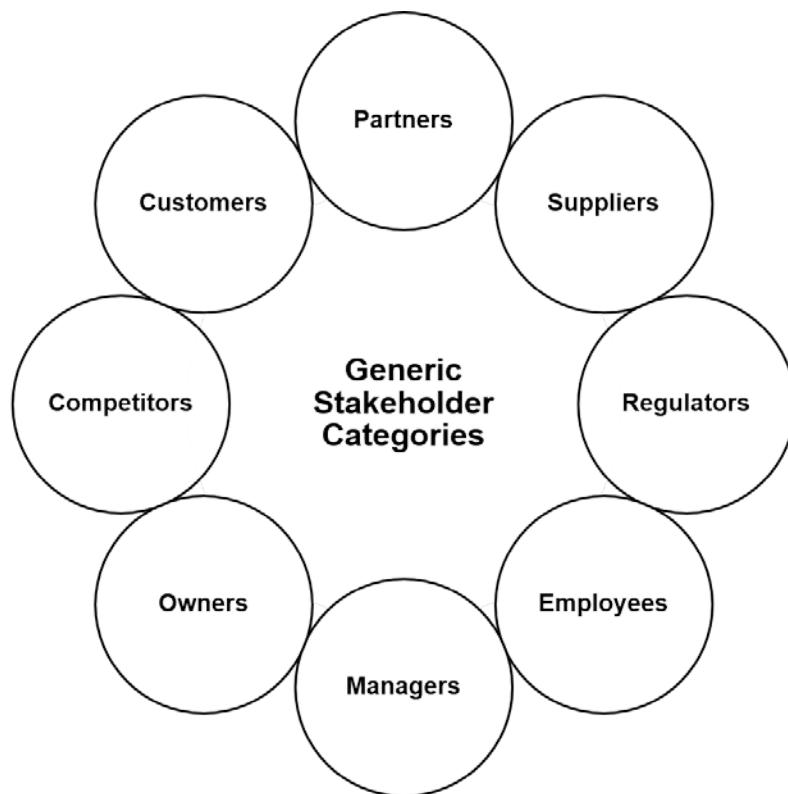
Partners are other organisations that provide services on our behalf, for example, call centre services.



Suppliers are other organisations that provide our organisation with the goods and services we need.

Owners may be those who directly own the organisation or, as in the case of a plc, proxy owners such as fund managers in pension companies.

# The Stakeholder Wheel



Pg 104 - 106



*Partners:* Other organisations that work with ours to deliver complementary or supplementary products and services.

*Suppliers:* External organisations that provide products or services to our organisation.

*Regulators:* External bodies that set and enforce regulations to which our organisation is subject.

*Employees:* Operational staff who deliver our products or services.

*Managers:* Senior and middle management who run the organisation, monitor progress and deliver results required by the owners.

*Owners:* Depending on which sector our organisation is in, could include shareholders, trustees or government ministers.

*Competitors:* Other organisations that deliver their version of products or services to the same target customers.

*Customers:* Recipients of our organisation's products or services.

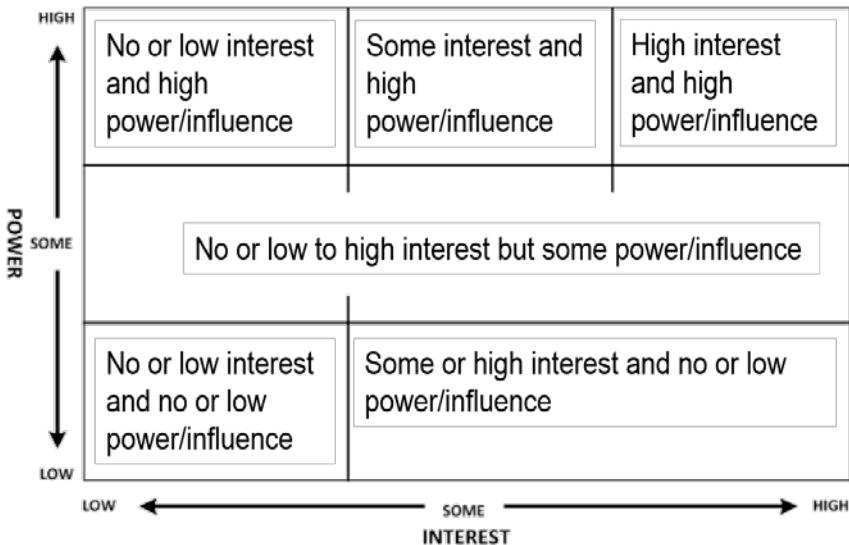
*Other stakeholders:* Of course there may be other stakeholders in your organisation and you may not include all of the generic stakeholders shown on the wheel.

The important point is to identify as many stakeholders as you possibly can for the area under consideration.

# Analysing Stakeholders

## Stakeholder Power/Interest Analysis (or Power Interest Grid)

- Important to plot where they are, not where you want them to be
- Helps to assess the effort needed to manage each stakeholder

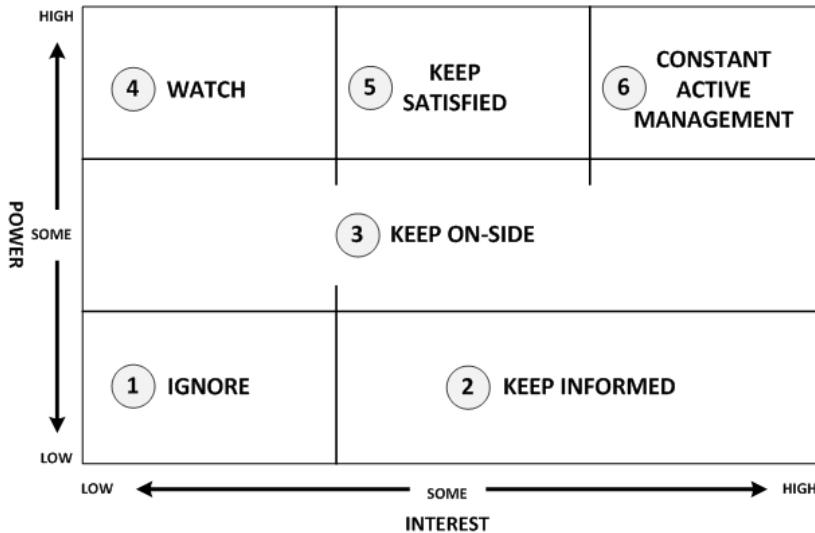


Pg 106 - 110



# Stakeholder Management Strategies

- Used to help identify the communications strategy
- Management strategies to be tailored for each



Pg 110 - 111



# Stakeholder Attitudes

## Champion

- Will actively work for the success of the project

## Supporter

- Generally in favour but will not actively promote the project

## Neutral

- Has expressed no opinion for or against

## Critic

- Not in favour but not actively opposed

## Opponent

- Will actively work to disrupt or impede the project

## Blocker

- Will obstruct progress, maybe for reasons outside the project

Pg 111, 112



You now need to know more about your key stakeholders.

You need to know how they are likely to feel about and react to your project. If they are not likely to be positive, what will win them around to support your project?

If this is not possible, how will you manage their opposition?

## Managing Stakeholders

Stakeholders will change during the plan

Creation of a new product – stakeholder plan

Name of Stakeholder	Customer	Sales Reps	Manufacturing	Director	3rd Party Vendor
Current power/influence	Some	Some	Some	High	Low
Current interest	Some	High	Low	Some	Low
Issue & interests					
Current attitude	Neutral	Supporter	Blocker	Critic	Neutral
Blocker					
Opponent					
Critic					
Neutral					
Supporter					
Champion					
Desired Support	Champion	Champion	Supporter	Champion	Supporter
Desired Role					
Desired Actions					
Messages to convey					
Actions & communications	Use Sales to work-on Mfg		Constant Active Mgt; sell benefits		



The analysis of stakeholders' power, interest and attitude enable the creation of a stakeholder plan.

We want to understand the desired support, role, actions and what message we want to convey to the stakeholders to gain their support. This then enables us to identify how we will communicate to them, when and how frequently.

## Managing Stakeholders – Other strategies

### RACI or RASCI Charts

- Responsible
- Accountable
- (Support)
- Consulted
- Informed

As seen in this chapter, it is useful in any Business Analysis project to consider the tasks and deliverables that will be involved and how tasks will be divided up between team members.

Task	Sponsor	PM	BA	Tester	Dev
<b>Business case</b>	A	C	R	I	
<b>Create project plan</b>	A	R	C	C	C
<b>Create PID</b>	A	R	C	C	C
<b>Requirements catalogue</b>	I	A	R	C	C
<b>Workshop prep</b>	C	A	R		

It is also extremely useful when trying to establish division of roles and responsibilities of stakeholders in an operational environment.

RACI and RASCI charts provide very useful tools for getting to grips with who does what. RACI is the more commonly used tool and a brief example is shown below.

Note that tasks and accountabilities versus responsibilities are dependent on the project framework of the organisation.

## Social media

Research on sites such as LinkedIn

Twitter and Facebook for communication

Pg 112 - 114





## **Exercise 5: Stakeholder Identification and Analysis**

Refer to Exercise 5 in your Exercise and Revision Workbook

# Understanding Stakeholder Perspectives

Soft Systems Methodology (SSM)

Business perspectives (CATWOE)

Business activity models (BAM)

Contrasting perspectives

Activity threads

Pg 115 - 120



# Soft Systems Methodology

Soft Systems Methodology (SSM) was created to help deal with the complexities of real-world situations. It acknowledges that often there is a great deal of uncertainty about what a problem situation actually is.

- Created by Peter Checkland and others in the 1980s
- Based on a 'learning for action' approach
  - (i.e. learning about the ideas and viewpoints concerning the problem)
- Example of a holistic, systemic approach

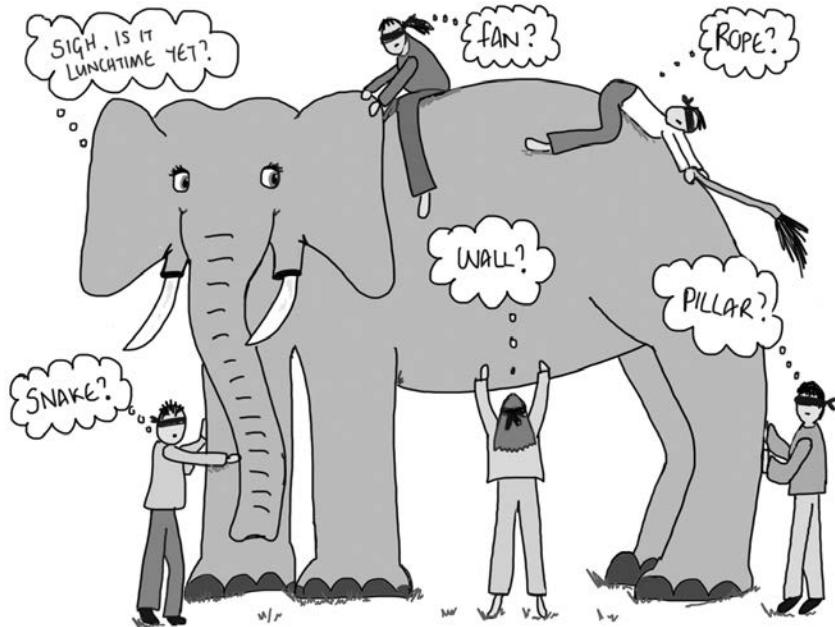
The idea of SSM is that the stakeholders will all have different views on what the problem is, so they may also have different ideas about how the problem should be solved. In this case:

- Having first class IT products is never enough
- The context of the problem (i.e. what we know individually and how we shape our analysis), culture and people issues in general must be understood and taken into account
  - If not, there is a real risk of failure as the solution may only solve part of the problem, or may have the wrong focus altogether

Pg 115

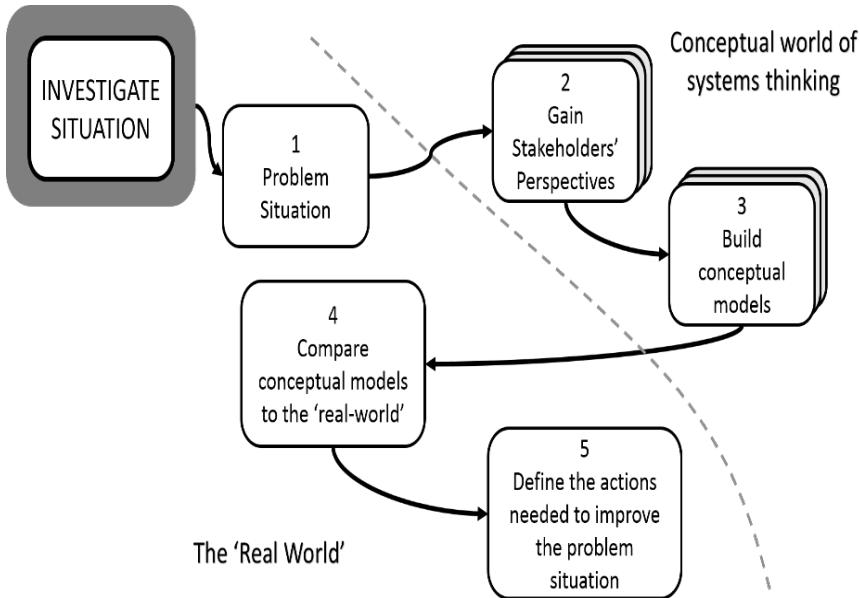


## Understanding Stakeholders' Perspectives



The above is based on an old tale about blind men encountering an elephant for the first time and each having their own idea of what this strange object is.

# The 5 'Stages' of SSM



Pg 115



Step 1: SSM begins with an investigation into a real world situation of concern and Checkland proposed we use a 'rich picture' to document it.

Step 2: The different 'world view' of each stakeholder is then developed using a *CATWOE* and formalised as a sentence, known by Checkland as a 'root definition', but we prefer the term 'business perspective'.

Step 3: From each business perspective a model of the stakeholder's desired business system is produced, then the differences between these conceptual models are considered and the models are brought together in one consensus model, which represents the desired future system.

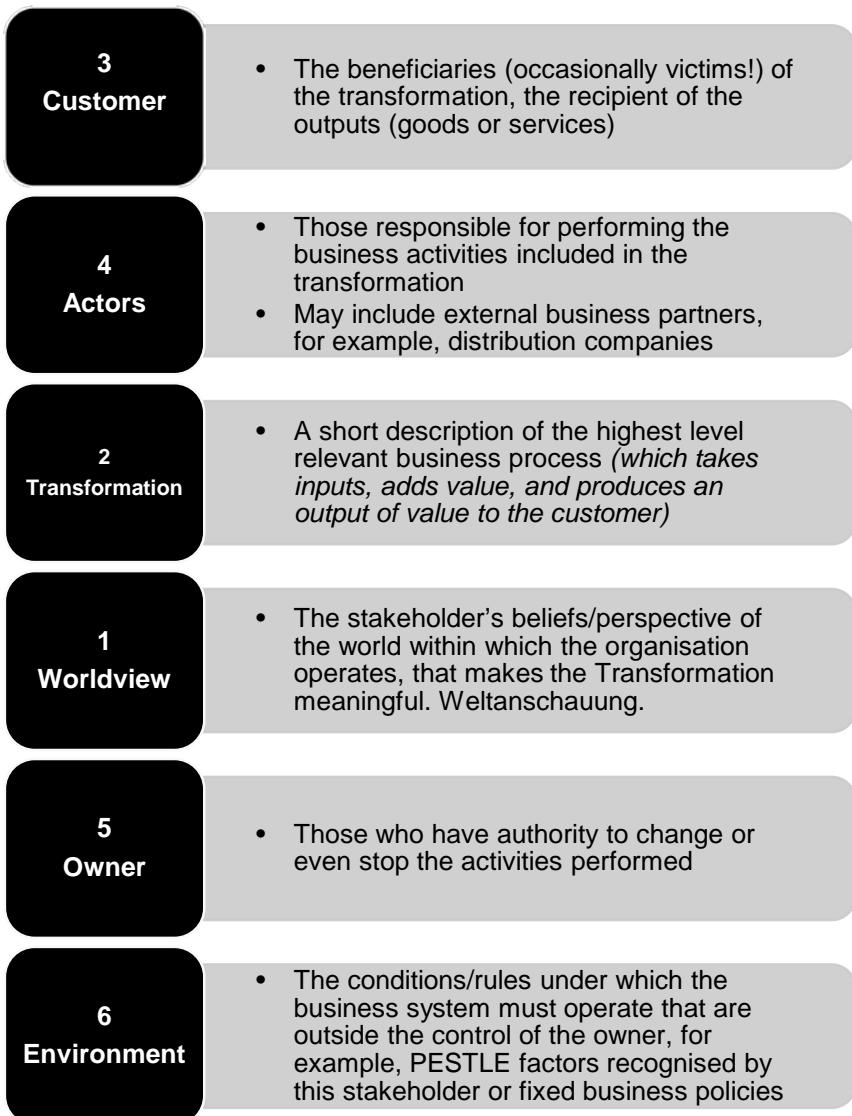
Step 4: This model is then compared to real world models, including the rich picture we produced earlier.

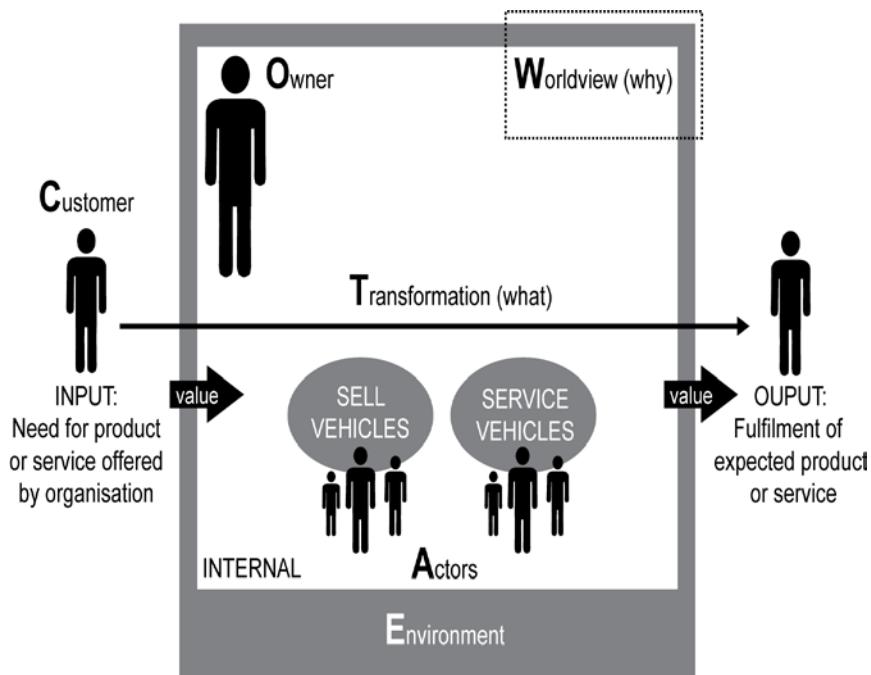
By comparing the conceptual model with what we perceive in the real world we can identify feasible, desirable changes that need to be made to the existing business system.

Step 5: This leads us to taking action to improve the problem situation, and could involve changes to the People, Organisation, Processes and Technology.

Note Wittgenstein's duck rabbit – to show that individuals view the world differently – can you see both the duck and the rabbit?

# CATWOE – Components of a Business Perspective





Pg 116, 117



The above is a visual version of how the CATWOE is laid out

# A Business Perspective: the MD of 'Drive'

## **W – Worldview**

The manager of the vehicle rental business believes that future success for the business lies in the prestige side of the business, renting luxury vehicles, often long term, to wealthy customers spending time in multiple residences across the UK.

## **T – Transformation**

Turning inputs into outputs; identifying self-drive customers and setting up contracts, delivering and collecting luxury vehicles for short term and long term

## **C – Customers**

Customers seeking high quality, short to long term luxury vehicle hire.  
Customers wishing to hire prestige vehicles.

## **A – Actors**

Customer Service Agents, Prestige Account Managers, Vehicle delivery and collection staff, vehicle maintenance team

## **O – Owner/s**

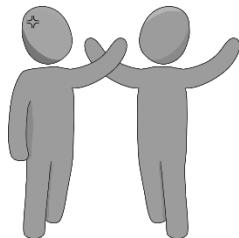
MD of Drive

## **E – Environment**

Tax and insurance on prestige vehicles, customer desire to rent long term, rather than purchase or use a chauffeur-driven service, concerns about the environment

# Contrasting Perspectives

- Individual business perspective
- Differences in opinion
- Provides a rounded view; a holistic view



Later on, these conflicts are considered through the activities they represent on the BAM

Ultimately, we are seeking consensus as to what the problem is and how to fix it (if indeed it needs fixing)

Pg 117



The process of learning about the problem through the stakeholder's perspective is exactly how Checkland and his team expect this methodology to be most effective.

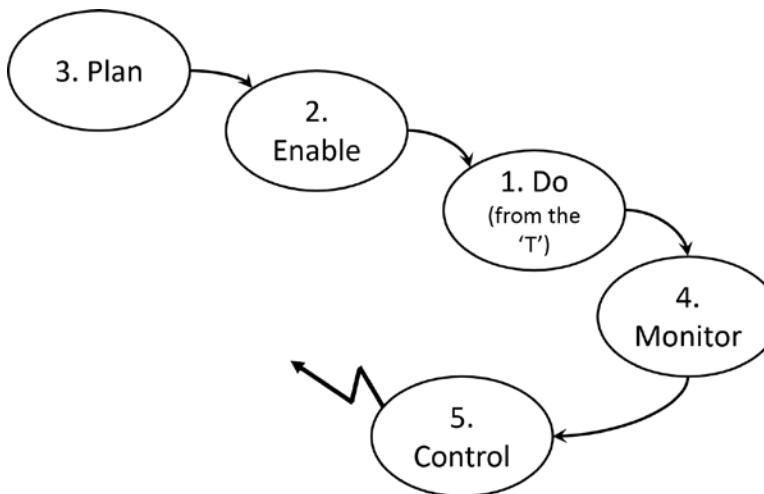
## Contrasting Perspectives - Example

	Perspective of MD	Perspective of Sales Director
C	Customers seeking high quality, short to long term luxury vehicle hire. Customers wishing to hire prestige vehicles	Loyal, repeat customers benefitting from discounts and offers on any popular grade of vehicle
A	Customer Service Agents, Prestige Account Managers, Vehicle delivery and collection staff, vehicle maintenance team	Customer Service Agents, Marketing Team, Vehicle Management Team
T	Identifying self-drive customers and setting up contracts, delivering and collecting luxury vehicles for short term and long term rentals	Adding customers to the loyalty scheme, offering discounts and incentives and renting popular grade vehicles
W	Success for the business lies in the prestige side of the business, renting luxury vehicles, often long term, to wealthy customers spending time in multiple residences across the UK.	Success for the business lies with gaining and maintaining a loyal customer base and relying on good quality, well maintained popular grade vehicles for rent
O	MD of Drive	
E	Tax and insurance on prestige vehicles, customer desire to rent long term, rather than purchase or use a chauffeur-driven service, concerns about the environment	Tax and insurance costs, maintenance costs, customers preferring alternative transport means, lack of spending power, lack of desire to become loyalty member

See also page 117 in the textbook for another example.

# Illustrating the Perspectives: Business Activity Models

- A conceptual model
- One for each business perspective
- Overlaid to form a consensus model
- Aids analysis and improvements
- Does not show who carries out the activities or where they are carried out



Pg 119



In the Business Activity Model, an arrow connecting two activities is a logical dependency.

It means "in order for the activity at the head of the arrow to be going on, the activity at the tail of the arrow must also be going on".

The arrow does not imply a trigger or an information flow (although, in some instances, that is what occurs in reality).

The 'Z' flows which do not point at other activities represent temporary dependencies on control activities – a control activity can affect any or all other activities within its scope in order that performance objectives are met.

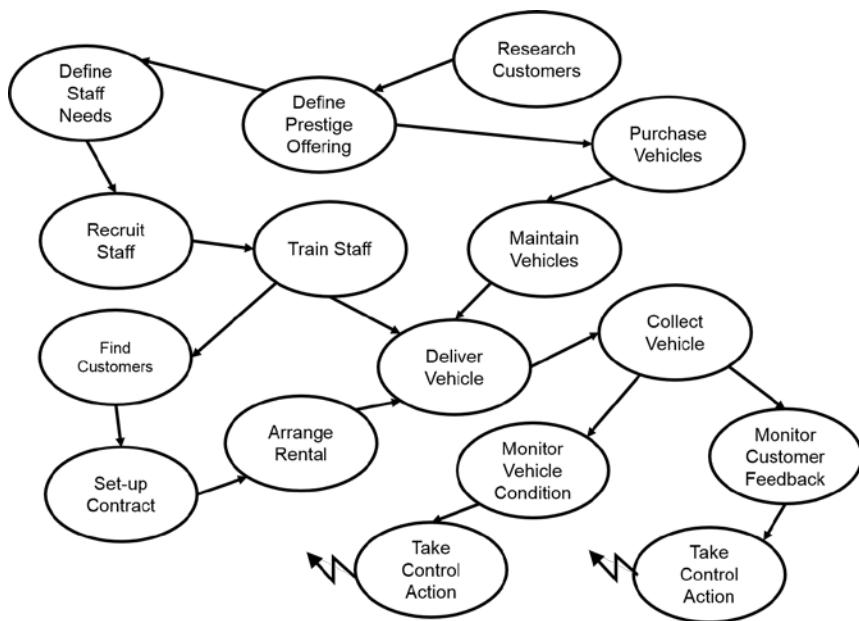
## Developing a Business Activity Model

- Business **planning** activities
  - Resources, constraints and performance targets (for example, scheduling, capacity management, demand management, marketing)
- **Enabling** activities
  - Things that need to be in place (for example, sales, recruitment, raw material, infrastructure)
- **Doing** activities
  - Activities which transform inputs into outputs, 'primary task'
- **Monitoring** activities
  - Performance measurement (KPIs), for example, customer satisfaction
- **Controlling** activities
  - How the organisation is geared to take action if the performance expectations not met, audit, legal

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## Example Business Activity Model



A Business Activity Model is derived formally from its business perspective, and only from its business perspective. It should not include any real-world activities that are not represented in the business perspective.

Another example can be found on page 119 in the book.

## BAM: Next Steps

Consolidated view of all stakeholder perspectives

Negotiations may be needed to reach agreement between stakeholders

Owner should be accountable

Consensus BAM

- A model of what the system **should** look like and what it **should** be doing
- Provides a basis for considering what **opportunities** exist for improvement
- Can be further expanded to consider how the activities are or **should** be carried out

Pg 120



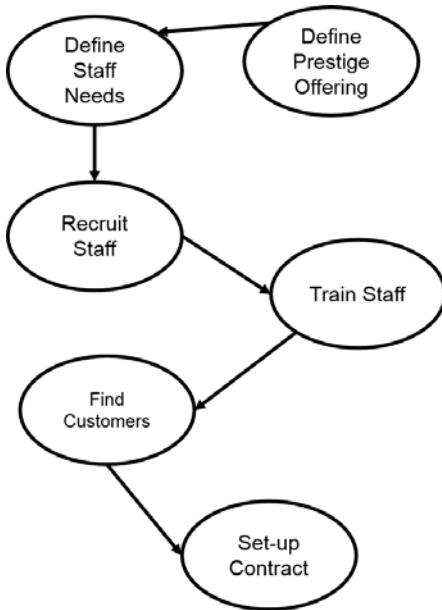
The consensus BAM feeds into the analysis of the current situation and can be a valuable input into gap analysis.

## BAM: Activity Threads

Grouped 'threads' of related activity

Can help to identify process/people issues in the 'real world'

Example shows the Prestige Scheme setup, recruitment and finalisation of the customer contract



Pg 121





## **Exercise 6: Modelling the Business System: CATWOE and BAM**

Refer to Exercise 6 in your Exercise and Revision Workbook

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## Notes

# 7. Modelling Business Processes

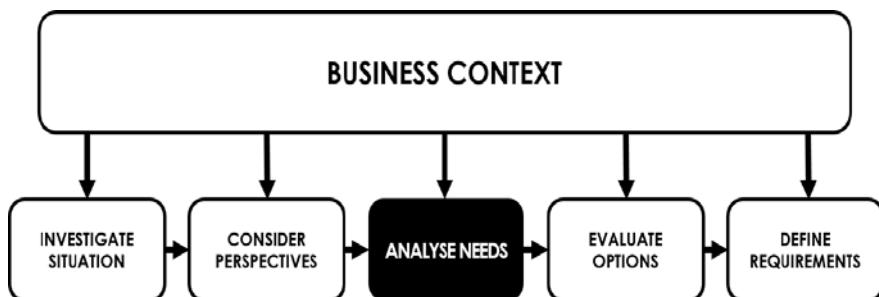
Chapter 7. Modelling Processes

Page 123

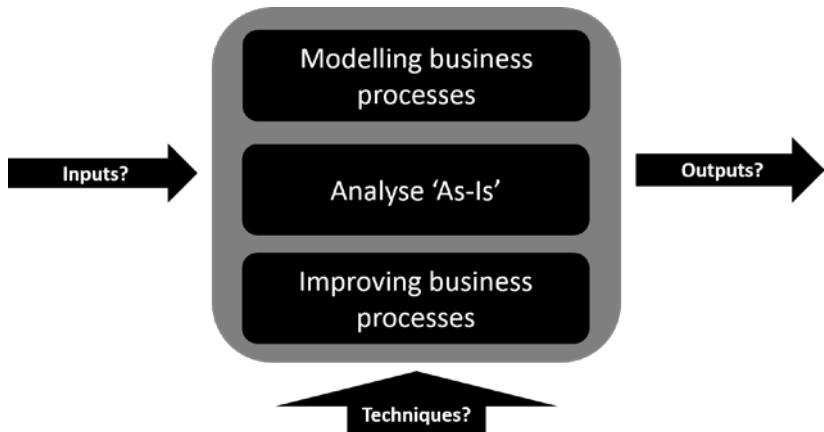


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4 Target Questions (Weighting 10%)



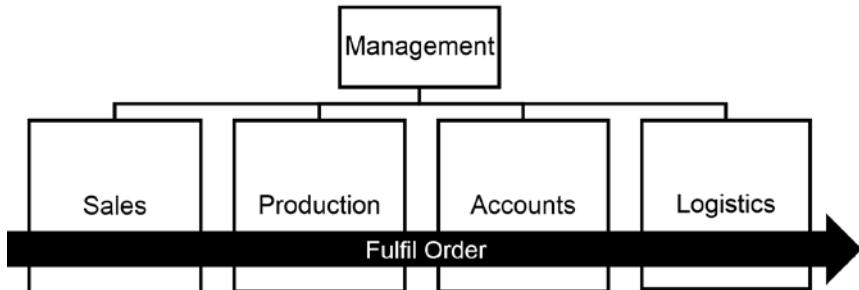
Topics



# Modelling Business Processes



# Organisational Context – Functional View



- Processes can, and often do, transcend departmental/ functional boundaries – they are internally oriented
- They are *horizontal* rather than *vertical*
- 'Silo' effect makes ownership problematic

The **process view** focuses on what we are in business to do from our customer's perspective

Pg 124



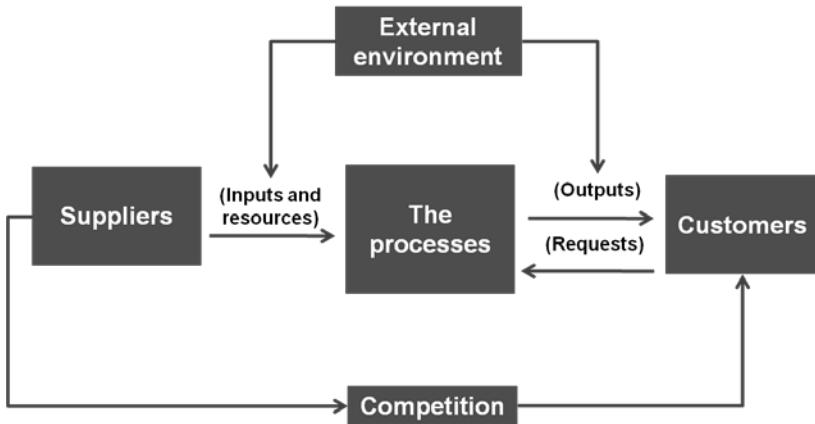
A significant problem for businesses is process identity and above all process ownership. If sufficient care is not taken, the investment in improvements is localised to functional areas, and what seems to be an improvement in a part of the process may cause a deterioration in performance elsewhere.

Processes are independent of organisation structure – structure defines how the people in the business are organised to carry out the processes.

Essentially, the business needs both views – i.e. a holistic view of process (for example, using the process map) and a view of organisation structure.

# An Alternative View of an Organisation

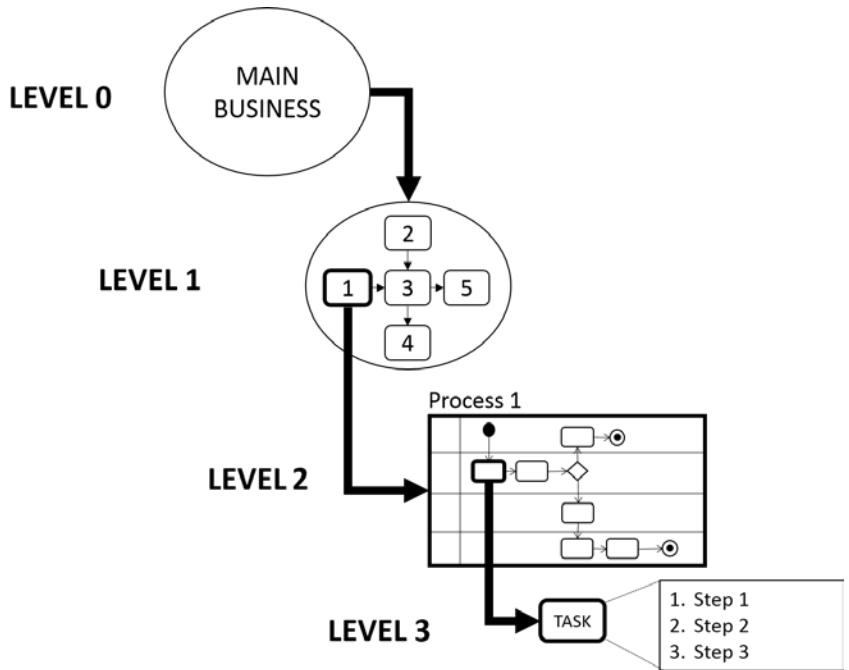
*Organisation model (after Harmon 2007)*



Pg 125



# The (Conceptual) Process Hierarchy



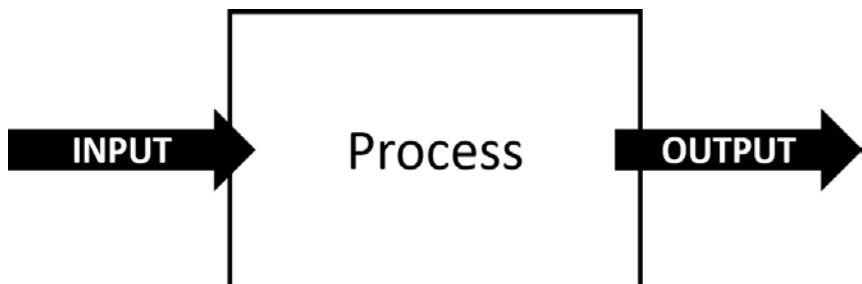
Pg 136



# The Organisational View of Business Processes

*"An organisational business process map is formed from a high-level set of activities carried out in order to deliver benefit or value to the customers."*

Pg 126 BCS book



- Shows dependencies between processes
- Is a level above a process model

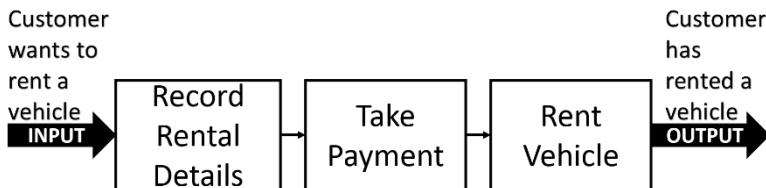
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A map at this level is designed to show the interdependencies between the processes, rather than the flow of the process, tasks and actors which are shown in a Process Model.

# Outline Process Map

Shows a set of related processes in a single diagram.



Pg 127

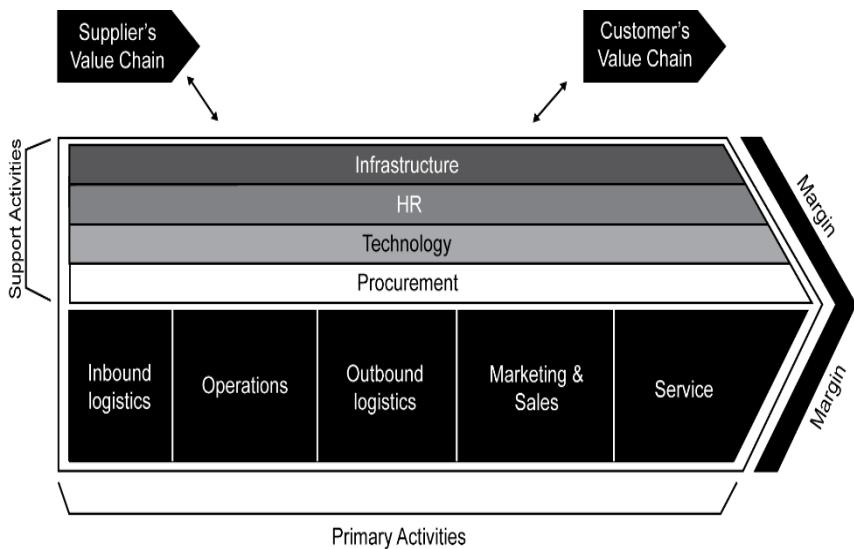


 Business process models (swimlane diagrams) show a more detailed view of the processes than on a process map.

The process map can help us consider, before we get into the detail of the process itself, the boundaries of the process, i.e. where it begins and ends.

We can consider what the business needs to achieve to meet the needs of the customer and link the dependent processes together.

# Porter's Value Chain and Value System



Pg 128



 The Value Chain is an important model of business and supports the work of business analysis.

It helps analyse which activities are relevant to the value being created by the business for the customer, and also serves as a concept to base the process map upon.

We also need to understand the value expected by the customer purchasing or using our products and services. This is where the value proposition comes in.

# Value Propositions

What is the value expected by our customers?

How do we differentiate from the competition?

Elements of the value proposition:

- Product/service attributes
  - Functionality
  - Price
  - Quality
  - Choice
  - Availability
- Image and reputation
- Customer relationship

Pg 129 - 131



*A value proposition is a definition of an organisation's product or service that will demonstrate to customers that we understand and can satisfy their needs.*

# Why create Business Process Models?

- To **understand** an as-is (or to-be) process
- To **communicate** the inner workings of a process for training/knowledge purposes
- To **ensure consistency in the approach to each process** or set of tasks and activities
- To **identify problems** within existing processes

We refer to the existing business process model as the 'As-Is' and the improved process model as the 'To-Be'.

Pg 123



# Developing the Business Process Model

Drawn as 'swimlanes'

A business process is triggered by a business event:

- External
- Internal
- Scheduled

Includes 5 key components:

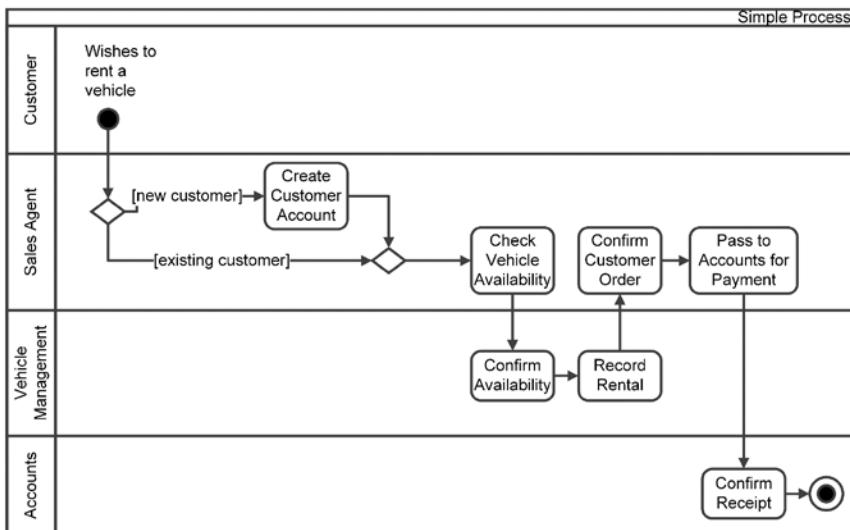
- Tasks
- Process flow
- Decision points
- Actors
- Outcome of the process

Pg 132



Note that the Business Process Model and Notation (BPMN) can provide an industry standard way of documenting process models. We will use UML as BPMN relies on software which we don't have access to.

## Example Process Model (Swimlane) Diagram



Pg 137



The following conventions are used:



**Process** – an entire set of activities starting with a triggering event and ending with some output being delivered

**Task** – an activity within the process carried out by an actor/role at a single point of time

**Step** – activities within a task. Not usually shown on the business process model

# Analysing the 'As-is' Process

Important to understand problems with the 'as is' process:

- Analyse handoffs (cross-functional processes)
- Analyse processing for:
  - Duplication
  - Redundancy
  - Lack of standardisation
  - Incompleteness
  - Inconsistent measurement or controls
- Staff training (or lack thereof!)
- Resource availability causing bottlenecks
- Management of the process
- What is the value added work?

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Pg 138 - 144





## **Exercise 7: Analyse the Business Process**

Refer to Exercise 7 in your Exercise and Revision Workbook

# Improving the 'As-is' Process

- Improvements may involve:
  - Analysing the business rules
    - Constraints
    - Operational guidance
  - Simplifying process, removing bottlenecks
  - Extend the processing
  - Changing the sequence of tasks
  - Redesigning the process
  - Automating the process
  - Redefining process boundaries (start earlier; end later)
  - Redesign the process

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# Process Measurement

## Considerations

- Internal measures
- External measures
  - Time
  - Cost
  - Quality
- Process and task measures
- Performance issues

Six sigma – alternative approach to process improvement

- Five-step approach 'DMAIC'
- A methodical and structured approach
- Uses data and measurement to identify business benefit

Pg 144 - 149



Six sigma has a five-step approach (DMAIC) based on analysis of the current situation to **define** the problem, often by means of gathering numeric data about the situation, **measuring** the resulting data, **analysing** what it says, implementing an **improvement** and **controlling** the resulting change.

DMAIC are the initial letters which remind one of the sequence of events in the six sigma approach.

There are six levels of process quality, six being the highest, most defect free level.

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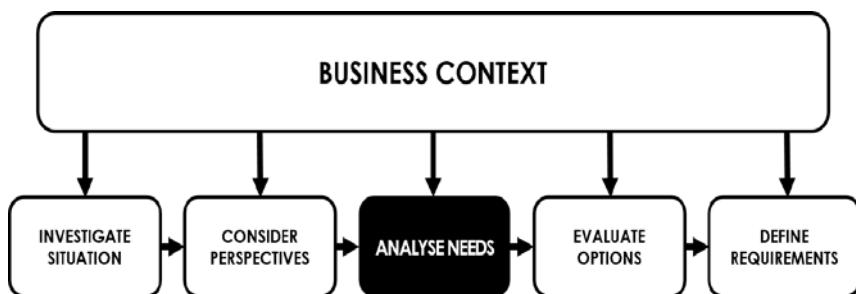
## Notes

# 8. Defining the Solution

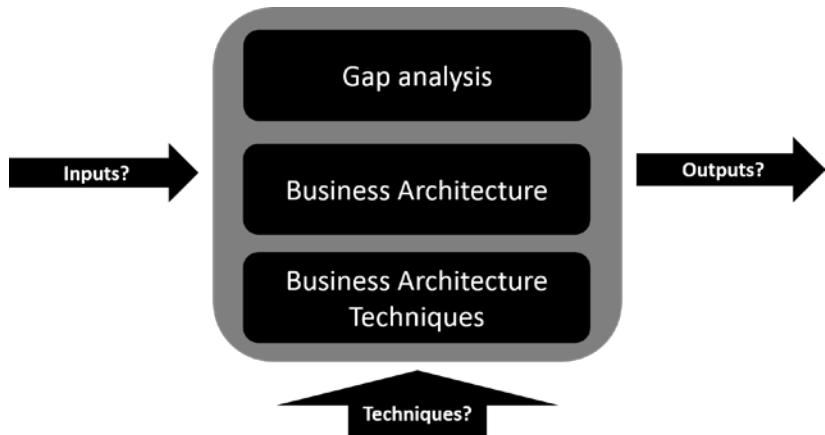
Chapter 8. Defining the Solution

Page 151

2 Target Questions (Weighting 5%)



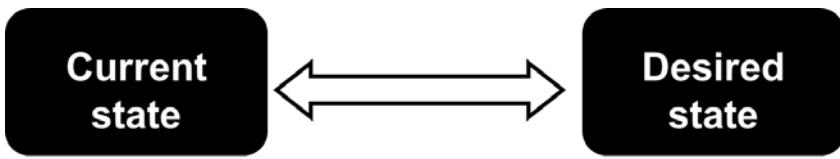
Topics



# Gap Analysis

**Explores the difference between the current state and the desired future state**

- BAM provides a conceptual view to fulfil stakeholder expectations
- Can also compare 'as is' and 'to be' business process models, IT system requirements and skills gaps for desired roles



Pg 144 - 149



Gap analysis can be used to compare the conceptual views of a business situation against the current as-is situation and identify the differences between them.

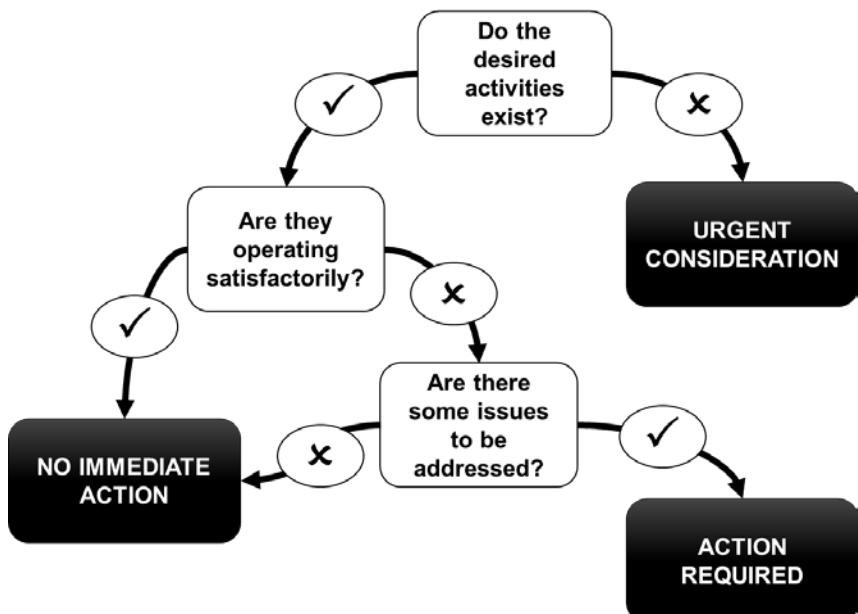
The differences give us the basis for defining the actions required to improve the business system. The Business Activity Model (BAM) is one way that we can understand where the gaps exist.

Of course we shouldn't just rely on the BAMs to give us an idea of the required actions – we can also use as-is analysis using the results of our discussions with stakeholders, analysis of process models etc.

The development of a Business Activity Model approaches the system from an entirely different viewpoint. It allows the analyst to model the essential activities of the system, without becoming too involved in the detail of what is actually going on.

These two different views are both very useful and can be used to complement one another in the investigation of the system.

# Identifying Areas of Concern (BAM)



Pg 151, 152



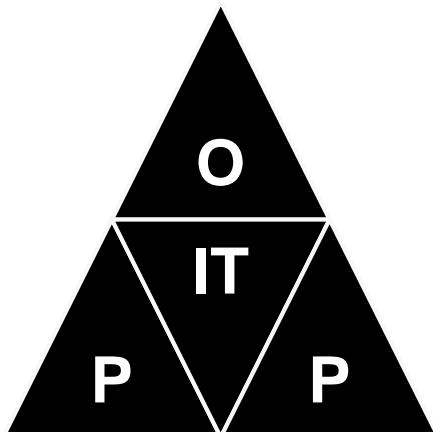
The Business Activity Model can be used to categorise and identify areas for action.

The categorisation allows us **to prioritise the work** that we need to do and aligns with the objectives and scope for our Business Analysis work.

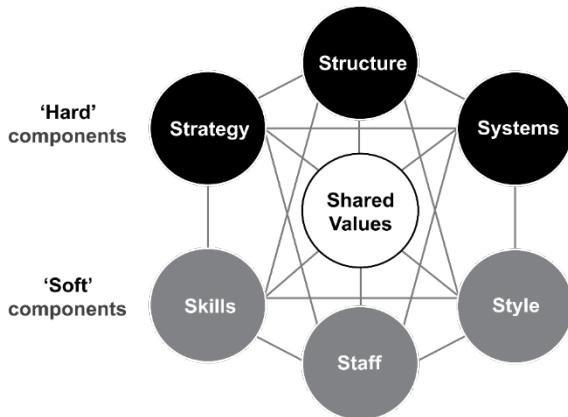
The gap analysis follows on from this work in investigating the 'how' and allows us to bring the activities identified as conceptual 'shoulds' back into reality.

# Framework for Gap Analysis

- Holistic approach required to represent the situation
- Change must be 'real'
- POPIT™ – allows us to consider all of the elements that the change will require



- McKinsey's 7-S model – considers the organisational elements along with Structure and Culture considered in POPIT™



Pg 152 - 156



The POPIT™ model and McKinsey's 7-S model are useful tools for furthering the analysis completed thus far.

We can consider the following areas in more detail:

### **Processes**

- Comparison of the ‘as-is’ vs. the ‘to-be’ and consideration of the impacts to how the business will respond to process changes.

### **Information and Technology**

- How will IT be used in the ‘to-be’? Will there be a need for additional process support?
- Are there any issues with access to the IT systems? For example if there is a new centralised system, will provision be made for access by all? Will training be given?
- Does everything work with the Enterprise Architecture? Will new or updated systems be integrated and operable? This could be as simple as having a standard for data file formats so that all systems can use another system’s data

### **Organisation**

- McKinsey’s 7-S can be used here

### **People**

- How are we planning to deploy the changes? What impacts will be felt by the people using the system on a daily basis?
- Are there any new or updated skills required? How will training be managed?
- Are there any recruitment requirements?
- How will staff be developed?
- How will staff be motivated before, during and after the change has been implemented?

# Introduction to Business Architecture

- Formal definition of the architecture of the business
- Helps align business change proposal
- Provides the holistic blueprint of business areas
- Shows the interfaces, potential impacts and capabilities to deliver value
- 
- Can facilitate scenarios that determine:
  - Alignment
  - Impacts of change
- Provides a bridge between the defined strategy and execution of strategy

Pg 156 - 157



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Business architecture tends to be shaped when two or more business areas begin to be seen to share capabilities with a common view, i.e. value delivery. These capabilities are integrated and standardised to promote effectiveness and often, efficiency.

# Definition of Business Architecture

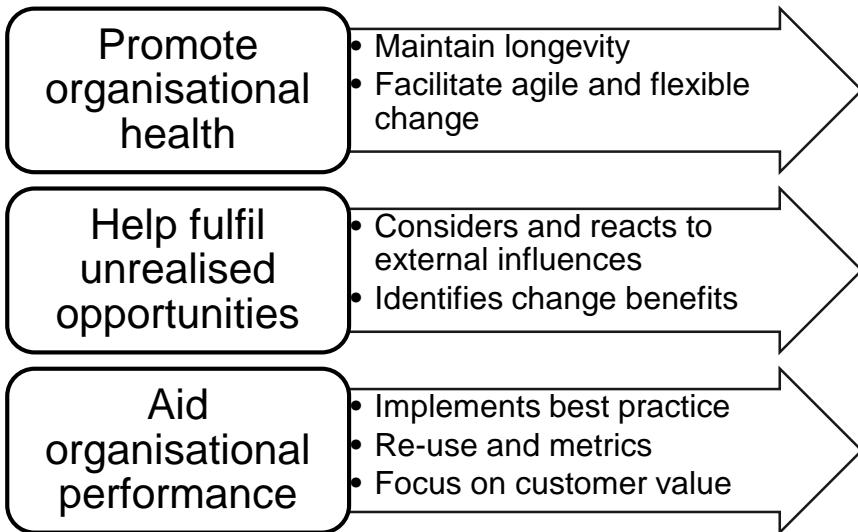
*“A blueprint of the enterprise that provides a common understanding of the organisation that can be used to align strategic objectives and tactical demands”*

The Business Architecture Guild (2014)

Pg 157



# Objectives of Business Architecture



Pg 157



## Key Points about Business Architecture

- The scope of a business architecture is the scope of the business
- It is not prescriptive
- It is developed iteratively
- It is reusable across the business
- It is NOT about deliverables
  - Philosophy of the business
  - Values

A Business Architecture can document many ‘artefacts’ within it to provide multiple facets of the business, such as:

- Capabilities (via the capability model)
- Values (via the value stream)
- Information
- Products
- Suppliers
- Motivational aspects
- Business units

- Standards and policies

These together provide a multi layered, multi-dimensional view of the business. It is important to appreciate that all of the dependencies need to be considered and mapped back to the various artefacts that would typically define the lower level Business Analysis activities.

The two most important Business Architecture techniques are:

- Business capability modelling
- Value stream analysis.

# Business Architecture Techniques: Capability Model

## Capability model

- High level representation of what the organisation needs to do to deliver value to the customer
- Capability = ability to achieve an outcome
- Modelled as layers
  - Strategic
  - Core or customer facing (value-add)
  - Supporting

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## Capabilities:

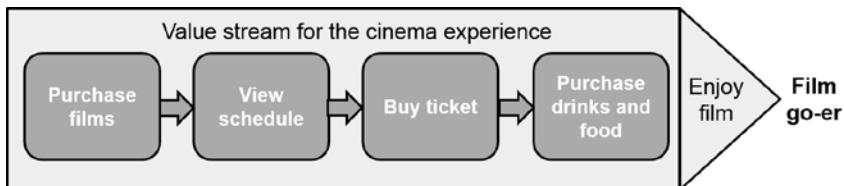
- Defined in business terms
- Named as nouns, not verbs
- Static (value streams show movement)
- Unique
- Enabled via value streams

# Business Architecture Techniques: Value Stream

## Value Stream Analysis

An end-to-end collection of linear stages that create an outcome of value to a specified customer group

- Could be the business customer or an internal customer of whatever value stream is being documented
- Used to identify, map and analyse the value exchange



Pg 161



Key points:

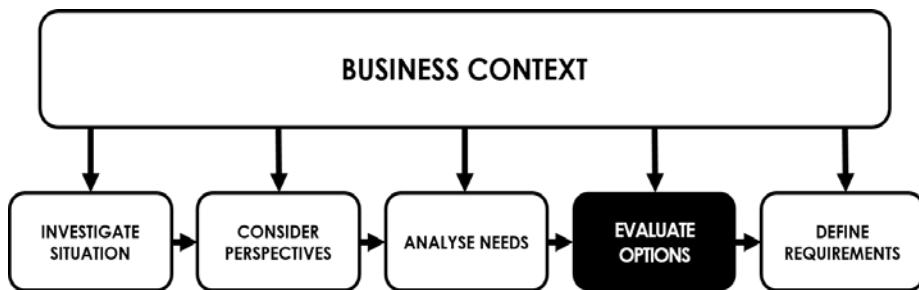
- Stakeholder focused
- Holistic view
- Customer centric
- High level (facilitate decomposition)
- Help ID the business capabilities that will deliver customer value
- Does not show who performs the stages
- Can extend across multiple business units and/or organisations

# 9. Making a Business and Financial Case

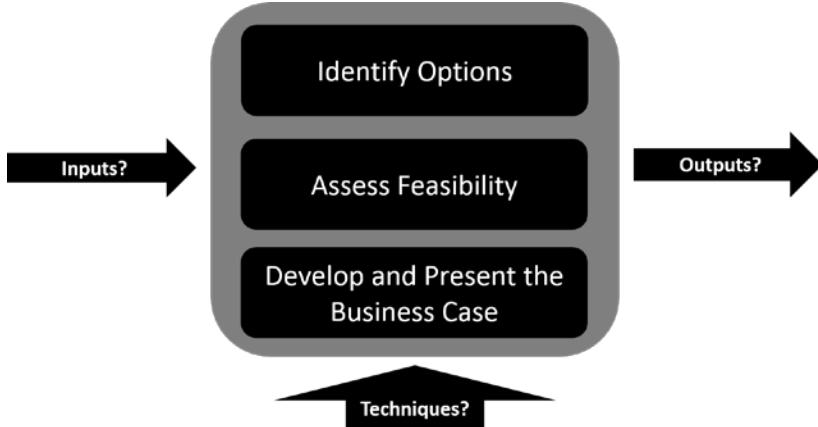
Chapter 9. Making a Business and Financial Case

Page 163

4 Target Questions (Weighting 10%)



Topics



# Making a Business and Financial Case

The business case in the project lifecycle

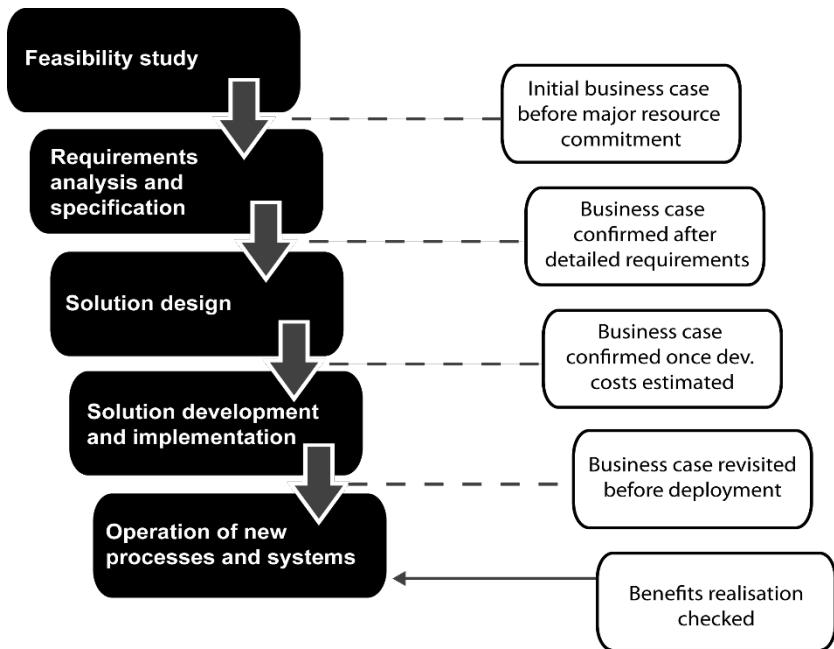
Identifying options

Assessing project feasibility

Structure of a business case

Investment appraisal

# Business Case in the Project Lifecycle



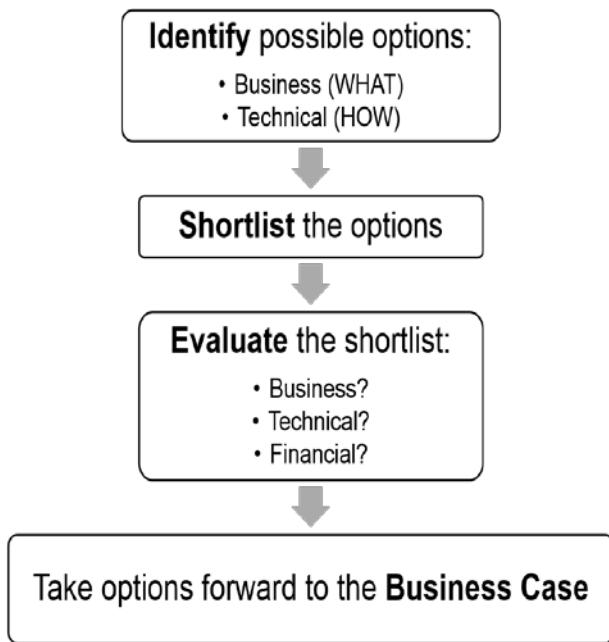
Pg 163



Between each of the stages of the lifecycle shown there are "decision gates", indicated by the dashed lines.

Here the project should pass certain tests before being allowed to proceed to the next stage – in this case, the tests relate to the business viability of the project.

# Process for Developing Options

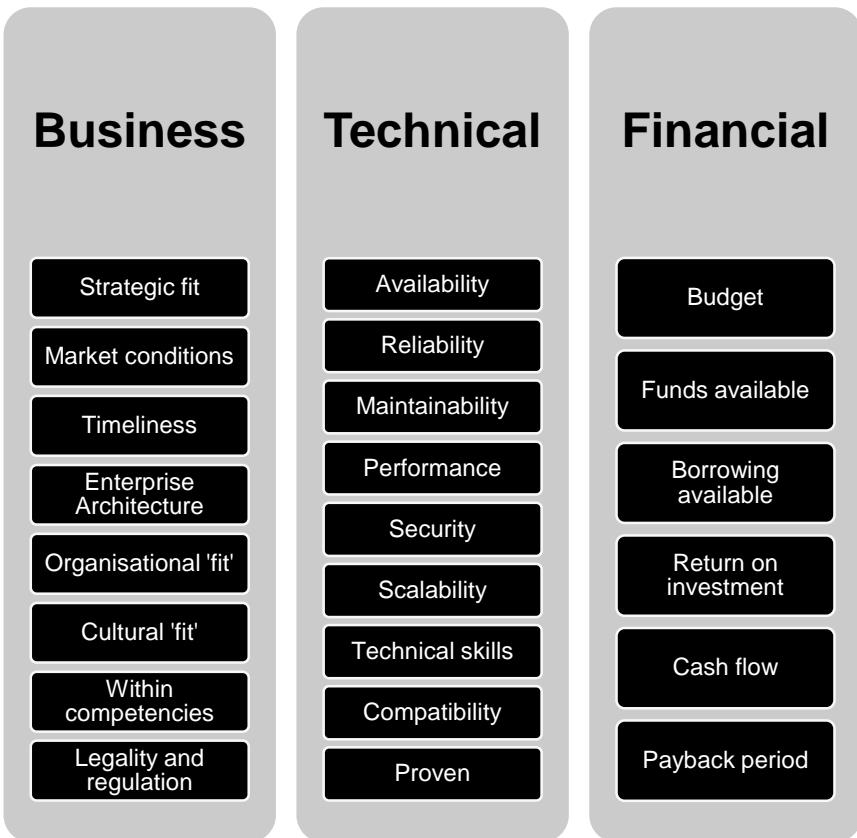


Pg 164 - 166



# Assessing Project Feasibility

Eliminate any options that are unacceptable because of...



Pg 166

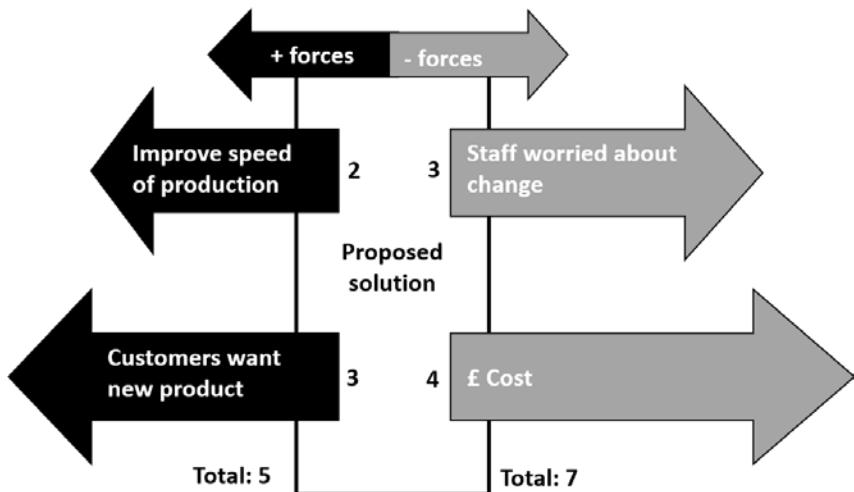


PESTLE and Scenarios can also be used to assess feasibility.

# Other Analysis Tools

PESTLE

Force-field analysis (Kurt Lewin)



Pg 168



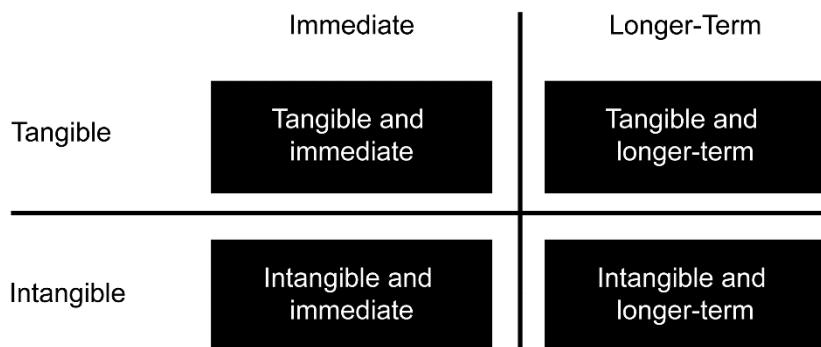
# Structure of a Business Case

- Introduction – reason why
  - Management summary
  - Current situation –
    - *The "do nothing" option*
  - Options considered
  - Analysis of costs and benefits
    - *Categories*
    - *Investment appraisal*
    - *Timescales*
  - Impact assessment
  - Risk assessment
  - Recommendations
  - Appendices and supporting information
- 
- Justifies the project

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# Categories of Costs and Benefits



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# Tangible Costs and Benefits

## Costs

### One-off and Ongoing

- Development staff costs
- User staff costs
- Equipment
- Infrastructure
- Packaged software
- Relocation
- Staff training and retraining
- Ongoing costs

## Benefits

- Staff savings
- Reduced effort and improved speed of working
- Faster responses
- Reduced accommodation costs
- Reduced inventory
- Other costs
- Reduced overtime
- Reduced travel costs
- Reduced consumable costs
- Avoided costs

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### Ongoing costs can include:

- Hardware maintenance
- Software support
- Salaries for additional staff
- Increased premises costs
- Increased inventory
- Increased consumables costs

- Increased travel/ transport costs

 Tangible costs and benefits are those for which we have a specific basis for measurement, usually financial.

For the benefits, we would need to have taken a measurement before the project starts so that we have a basis for comparison.

# Intangible Costs and Benefits

## Costs

- Recruitment and induction
- Disruption and short-term loss of productivity

## Benefits

- Increased job satisfaction
- Improved customer satisfaction
- Better management information
- Greater organisational flexibility
- More problem solving time
- Improved presentation
- Better market image
- Better communication

Pg 171, 173



# Impact Assessment

For each option, what changes will have to be made?

- Organisation structure
- Interdepartmental relations
- Working practices
- Management style
- Recruitment policy
- Appraisal and promotion criteria
- Supplier relations

Pg 174



# Risk Assessment

The principle *risks* of the change should be identified

Description	→ Cause and Impact
Impact assessment	→ Quantitative measures
Probability	→ Likelihood of occurrence
Countermeasures	→ How to reduce probability and impact
Ownership	→ Who is responsible for countermeasures and ownership in BaU?

Pg 174



# Investment Appraisal

- In this part of the business case the financial aspects are compared to understand if and when the project will pay for itself
- Investment appraisal techniques:
  - Payback calculation
  - Discounted Cash Flow (DCF)
  - Internal Rate of Return (IRR)
  - Net Present Value (NPV)

# Payback Calculation

Item	Year 0	Year 1	Year 2	Year 3	Year 4
Hardware purchase	<b>-180,000</b>	0	0	0	0
Hardware maintenance	<b>0</b>	-30,000	-30,000	-30,000	-30,000
Software purchase	<b>-80,000</b>	0	0	0	0
Software support	<b>0</b>	-30,000	-30,000	-30,000	-30,000
Staff savings		150,000	150,000	150,000	150,000
Cash flow for year (savings less costs)	<b>-260,000</b>	90,000	90,000	90,000	90,000
Cumulative cash flow	<b>-260,000</b>	-170,000	-80,000	10,000	100,000

Year 0 represents the year where the investment is made.

Pg 176



 Hardware purchase, Hardware maintenance, Software purchases and Software support are all *costs*, shown as negative amount, eg. -150,000

Staff savings are a *benefit*, shown as a positive amount, eg. 150,000

**Total costs – total savings = Cash flow**

*What is the payback period?*

Payback calculations are easy to understand, but take no account of the '*time value of money*'.

# Discounted Cash Flow, Net Present Value and IRR

Item	Year 0	Year 1	Year 2	Year 3	Year 4
Cash flow for year (savings less costs)	<b>-260,000</b>	90,000	90,000	90,000	90,000
Discount Factor (10%)	<b>1.000</b>	0.909	0.826	0.751	0.683
Discounted Cash Flow	<b>-260,000</b>	81,810	74,340	67,590	61,470
Cumulative Discounted Cash Flow	<b>-260,000</b>	-178,190	-103,850	-36,260	<b>+25,210</b>

Net Present Value (NPV) of the project = £25,210 after 4 years (add all DCF)

## Internal Rate of Return (IRR)



- Assesses the return on investment represented by the project as a single percentage figure.
- Compared against the likely interest rates over the same period

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To take account of the time value of money we use discounted cash flow. Management accountants provide a discount factor to apply to the cash flow.

This discount factor takes account of likely money-market interest rate changes over the duration of the project.

The Discounted Cash Flows (DCF) are accumulated to give a Net Present Value (NPV) for the project.

- NPV is calculated for each option in the Business Case so that they can be compared
- IRR – the rate of return, as a single percentage figure, a project is expected to generate
- To calculate IRR work back from  $NPV = 0$  at a fixed point in the future, for example, five years, to calculate the % discount rate that would have been applied to achieve  $NPV = 0$

The IRR is compared for the options in the Business Case – BUT this calculation does not take account of the size of the investment in each option.



## **Exercise 8: Calculate the Payback Period**

Refer to Exercise 8 in your Exercise and Revision Workbook

# Presentation of a Business Case

- Think about the audience
- Keep it short
- Consider the structure
- Think about appearances
- Consider ongoing reporting (and communication)
  - RAID logs
  - CARDI logs



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## RAID

- Risks
- Assumptions
- Issues
- Dependencies

## CARDI

- Constraints
- Assumptions
- Risks
- Dependencies
- Issues

---

## Notes

# 10. Establishing the Requirements

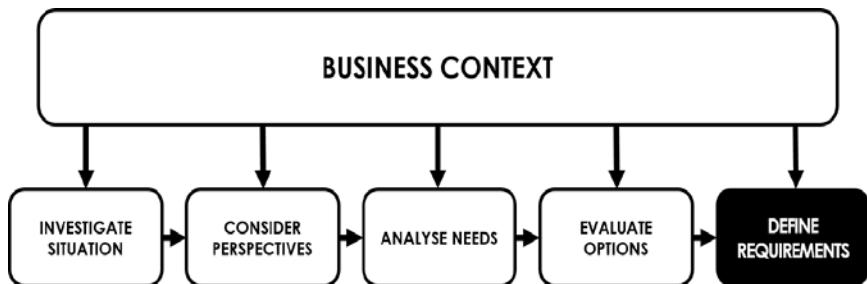
Chapter 10. Establishing the Requirements

Page 181

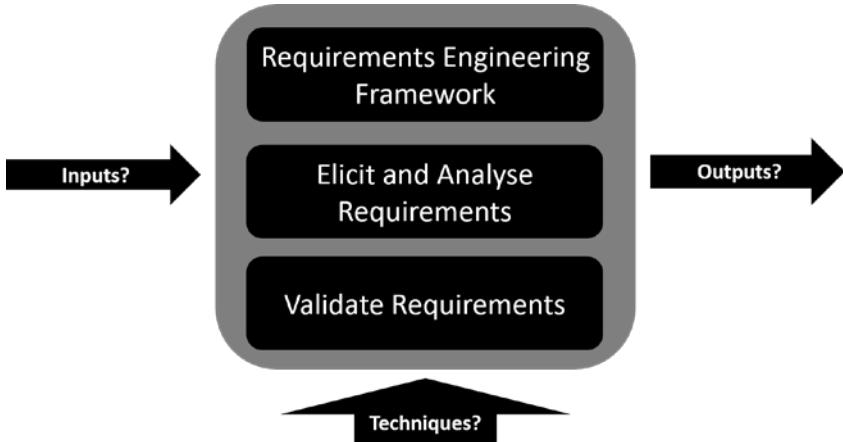


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3 Target Questions (Weighting 7.5%)



Topics



# Requirements Engineering

Problems with requirements

A framework for requirements engineering

Actors in requirements engineering

Requirements elicitation

Requirements analysis

Validating requirements



# Problems with Requirements

- Not linked to business objectives in terms of reference (OSCAR)

With how they are **written**:

- Ambiguity and lack of clarity in the wording
- Duplication and overlaps
- Conflicts between requirements
- No measures of success or quality
- Assume a solution
- Assume understanding

With how they are **captured**:

- No requirements/missing or incomplete
- Incorrect requirements
- Misinterpreted
- Lack of understanding of stakeholder perspectives

Pg 182 - 184

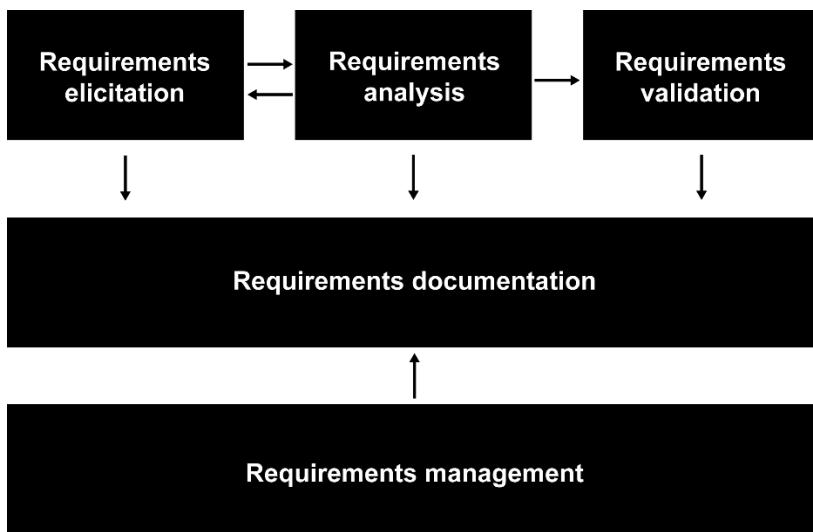


OSCAR

Documenting Terms of Reference (TOR)

- Objectives
  - Business and Project
- Scope
  - In and Out
- Constraints
  - Things we can't control
- Authority
  - Who has control over the project?
- Resources
  - Who or what do we need access to?

# Requirements Engineering Framework



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# Actors in Requirements Engineering

- The business representatives
  - Project sponsor
    - Responsibilities (agree the PID, deliver the benefits etc)
  - Subject Matter Expert (SME)
    - Risks (culture, politics, resentment, knowledge transfer)
  - Business users
- The project team
  - Project manager
  - Business analysts
  - Developers/Technical architects
  - Communication with:
    - Project Office
    - Software testers

Pg 186 - 188



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Note that SMEs are sometimes referred to as 'domain experts'

# Requirements Elicitation

Drawing out requirements and visualising possibilities

Knowledge types are significant when talking to stakeholders and eliciting requirements

- **Tacit** knowledge:
  - Difficult to articulate
  - Unspoken knowledge
- **Explicit** knowledge
  - Written down
  - Shareable
- Tacit versus explicit knowledge
  - Individual
  - Corporate



Pg 191 - 193



## Requirements Elicitation Techniques

- Interviews, workshops
- AERO
  - Apprentice
    - Shadowing
    - Protocol analysis
  - Enact
    - Prototype
    - Scenario role-play
  - Recount
    - Storytelling
    - Scenarios
  - Observe
    - Observation

Once elicited it needs to be recorded

Pg 191 - 193



# Building the Requirements List

Initial (informal) list of requirements

- Documents everything raised and origin

Requirements analysis

Requirements catalogue

Validate and control

Pg 193 - 195



# Requirements Analysis Tasks

## Categorisation of requirements

- First pass:
  - General (business)
  - Technical
  - Functional
  - Non-functional
- Aids validation and stakeholder ownership

## Modelling (chapter 12)

- Reflect the elicited requirements
- Check for completeness and understanding

## Filtering

- Ensuring the requirements are well formed

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These are requirement types and are described in more detail in the next section.

Further groups may be defined by the business, depending on need.

*'Requirements are related to each other. Some general and technical requirements refer to business policies that are elaborated and expanded in the functional and non-functional requirements.'*

From Business Analysis by Paul, Yeates and Cadle.

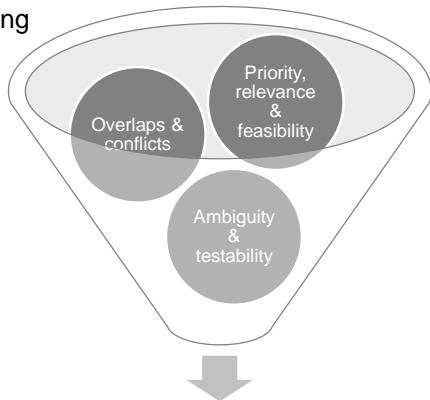
# Requirements Analysis: the Filters

## Requirements filters

- Overlapping, duplicate, conflicting
- Multiple
- Necessity and feasibility
- Solution
- Confirm quality

## Outcomes

- Accept
- Reward
- Merge
- Split out
- Clarify with business



Finally, check if the requirements are well-formed and

- **SMART** (Specific, Measurable, Achievable, Relevant, Time-framed)

Pg 196 - 200



Have a look at page 199 in the book for examples of requirements analysis using table 10.3 on page 194.

# Requirements Validation

- Review group
  - Business sponsor
  - Requirements owners
  - Subject matter expert
  - Developers
  - Testers
  - Project Office Representatives
- Outcome
  - 'Signed off' (baselined)
  - Some amendments, sign off by chairperson
  - Significant rework, review again

Pg 200, 201



# Agile Approach

RE approach can be time consuming

Agile approach is about evolutionary requirements

Still needs a starting point

- Timeboxed requirements set
- Follow the RE approach to ensure well-formed requirements

- Reduction in maintenance overheads
- Removes redundancy in up front requirements specification



- Scope creep a real possibility
- Bigger picture can be lost
- Traceability can be compromised



Pg 202 - 204



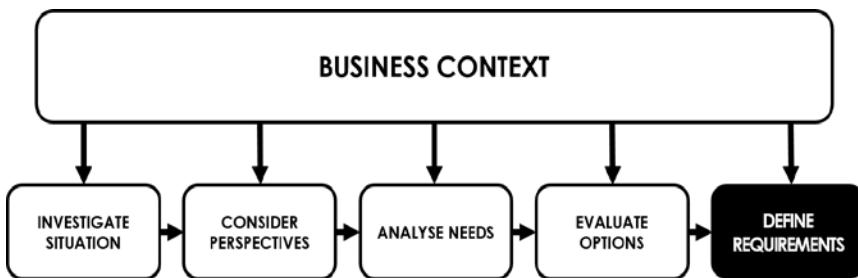
# 11. Documenting and Managing Requirements

Chapter 11. Documenting and Managing Requirements,

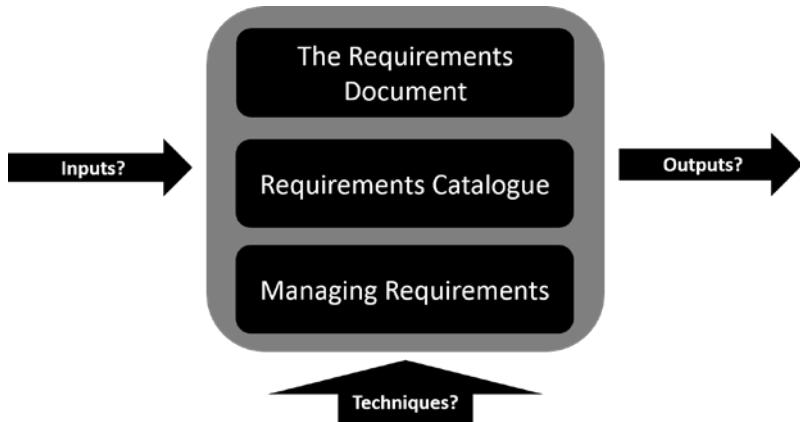
Page 168

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3 Target Questions (Weighting 7.5%)



Topics



# The Requirements Document

Why document?

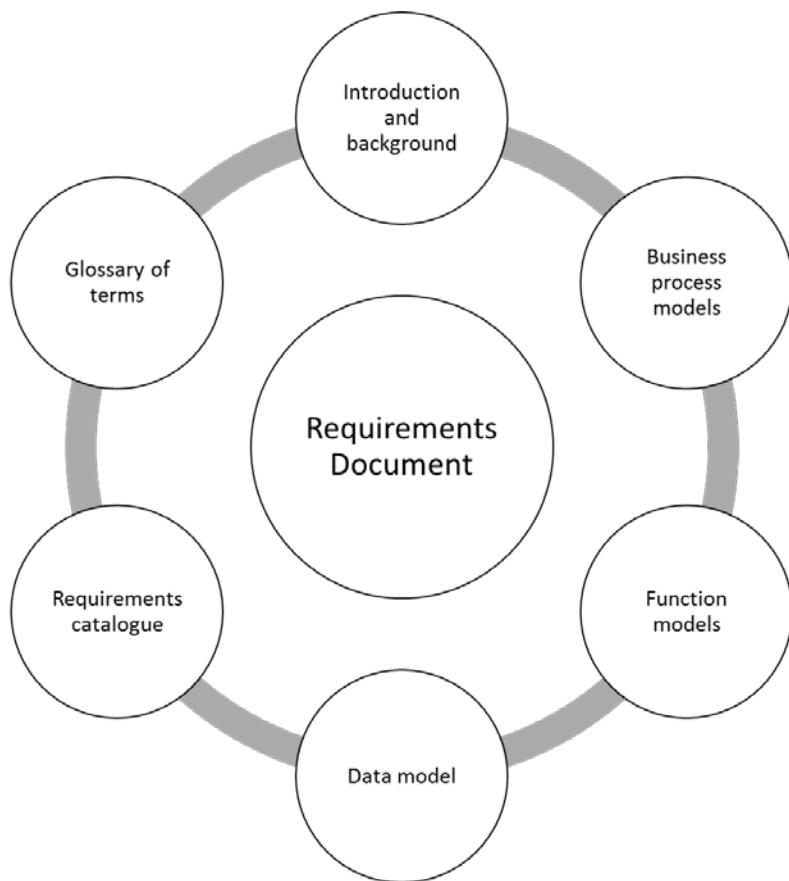
- Enables communication within the project team
- Provides a basis for validation with the stakeholders and requirements owners
- Input for changes and impact analysis
- Used for testing and implementation

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# Requirements Document: Structure

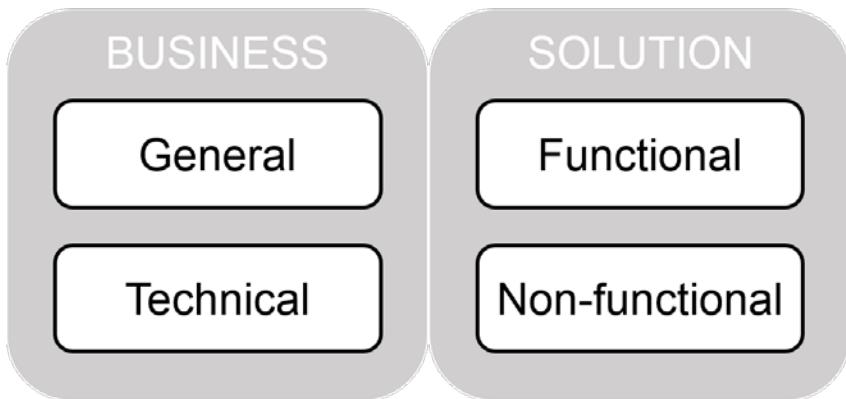


Pg 206 - 207



# Requirements Catalogue

Types of requirement:



Pg 207 - 213



# General Requirements

## **Business constraints**

- Budget, timescale, resources etc.

## **Business policies**

- Standards, business rules

## **Legal**

- Legislative and regulatory constraints

## **Branding**

- Image, style guide

## **Cultural**

- Vision, approach, management style etc.

## **Language**

- If operating across international boundaries

- Requirements that define business policies, standards and needs
- Broad scope

Pg 208 - 209



# Technical Requirements

## Hardware

- IT and other hardware

## Software

- Operating systems, package applications, networking, communications etc.

## Interoperability

- Standards for communicating between systems and devices

## Internet

- Policies on Internet use and web services

- Requirements that state technical policies and constraints
- Organisation wide

Pg 209 - 210



# Functional Requirements

- Requirements that define **the features the solution should provide**
- Often relate to data capture, manipulation or reporting (CRUD)
- Functional requirements must be implementable and testable

## Data entry

- Gathering and recording data (CREATE)

## Data maintenance

- Changes to data, including data deletion (UPDATE, DELETE)

## Procedural

- Implementation of business rules

## Retrieval requirements

- Reporting, responding to enquiries (READ)

Pg 210 - 211



Expressions of stakeholder needs of a system to achieve particular goals.

They are **WHAT** the system must do or facilities it must offer.

Often relate to data capture, manipulation or reporting.

Functional requirements must be implementable and testable.

# Functional Requirements Examples

The system shall:

- Generate a unique customer account number for new records
- Hold customer name
- Hold customer address
- Hold customer credit limit
- Hold customer date of first order
- Allow changes to be made to customer details
- Report on all orders placed in the last week
- Allow customer orders to be searched by customer account number or name

# Non-functional Requirements

## Performance

- Speed of processing transactions

## Security

- Security levels for protection of data

## Access

- Permissions, who has access to which functionality and how

## Backup & recovery

- Protection against loss of data

## Archiving & retention

- Duration, methods, eventual deletion

## Maintainability

- Includes servicing, problem detection and correction

## Business Continuity

- Disaster recovery

## Availability

- Timeframe for availability of functionality

## Usability

- Ease of learning, ease of use

## Capacity

- Data volumes, transaction volumes, user volumes

## Accessibility

- Usability: enabling access for all

Pg 211 - 213



- Requirements that define **how well** the solution will operate
- Must be implementable and testable
- Major factors in the cost of the product

## Non-functional Requirements Examples

- The system must be able to respond to 10,000 enquiries per day
  - This is a Capacity requirement
- Reprint the report on demand
  - This is an Availability requirement
- Respond to an enquiry on available customer credit within 5 seconds
  - This is a Performance requirement
- Archive customer records after 7 years
  - This is an Archiving and Retention requirement
- Images shall be compatible for screen readers
  - This is an Accessibility requirement



A useful definition of non-functional requirements is being:

*'concerned with the performance and level of operation of the system. In other words, how well the system will perform in certain areas'.*

# Hierarchy of Requirements

- Requirements are related to one another
- Should also be related to the organisation's values, strategy and objectives
- Feasibility, and therefore prioritisation
- Also helps assess timescales and necessity of a requirement

E.g.:

The accessibility requirement '*Images must be compatible for screen readers*' is related to the general requirement that all web pages must meet accessibility level AA

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Pg 213



# Sample Requirements Catalogue Entry

Author Anna Liszt	Date 02/08/2014	Version 0.1	Status In development	Business Area Reception		
Requirement Identifier	F-102v0.1	Version History	1 <sup>st</sup> draft			
Requirement Name	Check in unreserved customer					
Requirement Description	Receptionist must be able to check in a customer who has no reservation, providing a suitable room is available					
Requirement Type	Functional					
Acceptance Criteria	Client checked in, only if suitable room(s) available for those nights					
Source	B. Welcome, Receptionist					
Owner	I. Snoop, Duty Manager					
Priority	Must	Rationale	10% of hotel bookings are walk-in, value £200k p.a.			
Associated NFRs	N-88 Must be possible to enter all data and confirm room(s) within 3 minutes, N-001 Access Permissions					
Related Documents	Interview notes B. Welcome 26/07/2014					

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Note that not all of these headings would always be required in a catalogue. The ones used will be dependent upon the needs of the project and the business.

Contents could include:

1. Unique **requirement identifier** for each requirement to aid traceability
2. Requirement name
3. Requirement description
4. Source
5. Owner
6. Author
7. Type of requirement

8. Priority
  - a. M – Must have. Mandatory
  - b. S – Should have. Mandatory but can wait until the 2<sup>nd</sup> increment
  - c. C – Could have if time and budget allow
  - d. W – Won't have this time/Want to have
9. Business area
10. Stakeholders
11. Associated non-functional requirement
12. Acceptance criteria
13. Related requirements
14. Related documents
15. Comments
16. Rationale
17. Resolution
18. Version history

# Prioritising requirements (MoSCoW)

It is important to prioritise requirements

- It allows the staging of requirement implementation
- It enables the management of user expectations

**M** – must have

- Mandatory in the first increment; cannot meet objectives without it

**S** – should have

- Mandatory but may wait until second increment; the system will have short-term value without it

**C** – could have

- Beneficial if time or funds allow, but not central to project objectives

**W** – want to have (won't have this time)

- Will not be met in this delivery; may be upgraded in a future delivery

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The priority is not assigned when the requirement is first captured, but later on during negotiation.

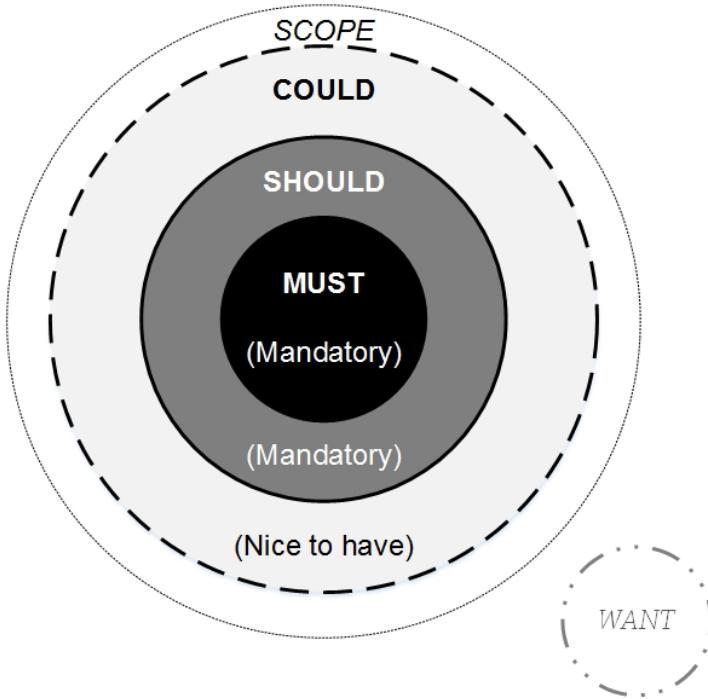
MoSCoW is used by DSDM Atern and many lifecycles.

All requirements should be prioritised and the priorities should be used to focus the analysis, negotiation, implementation and test.

It is pointless expending energy and resources on a requirement that is merely cosmetic as opposed to one having a massive business impact.

Note that the priority of requirements may change over time as conflicts are resolved and the descriptions are tightened.

Stakeholders must be involved in prioritising requirements and later in requirements validation to ensure that their expectations of the IT system are realistic.



# Managing Requirements

## Requirements identification

- Each requirement is uniquely identified
- A reference to it can correspond to only one requirement

## Requirements cross-referencing

- Allows the analyst to identify requirements related to the one that is to be changed
- The basis for impact analysis

## Requirements origin and ownership

- The source will provide information on the impact of change
- The owner has ultimate authority

## Software support (CASE/CARE)

- Documentation
- Secure storage and access
- Linkage
- Version numbering

## Change control

- Documenting a proposed change
- Consulting stakeholders
- Making a decision

## Configuration management

- Controls the change process
- Configuration items are identified, validated, baselined and subjected to version control as they are checked out and back in

## Configuration Management in Agile

- Baseline becomes key
- Baseline every prototype
- Baseline daily
- Baseline at the end of a timebox

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## **Exercise 9: MoSCoW**

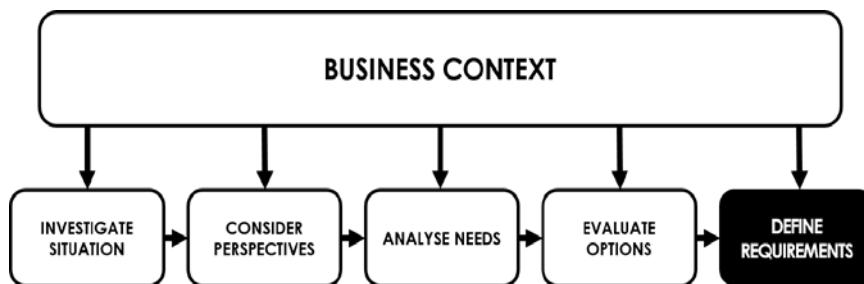
Refer to Exercise 9 in your Exercise and Revision Workbook

# 12. Modelling Requirements

Chapter 12. Modelling Requirements

Page 224

3 Target Questions (Weighting 7.5%)



Topics

- Modelling system functions
  - Use Case Diagrams
- Modelling system data
  - Entity Relationship Diagrams (ERD)
  - Class Models

# UML – Unified Modelling Language

Can be intimidating language on first appearance BUT – like any other language, you only need a grasp of the basics to communicate.

- Used by technical teams and Computer Aided software Engineering/Computer Aided Requirements Engineering tools
- Used to clarify understanding
- There are many UML models. Each model shows one view. Models are cross-checked to ensure completeness. Examples are:
  - Use case diagram – function view
  - Class model – data view

## Types of Use Case Diagram

### Business Use Cases

- Shows the usage that stakeholders require from a system
- Useful for scoping, gaining an overview of the business areas
- Not focused on an IT system

### System Use Cases

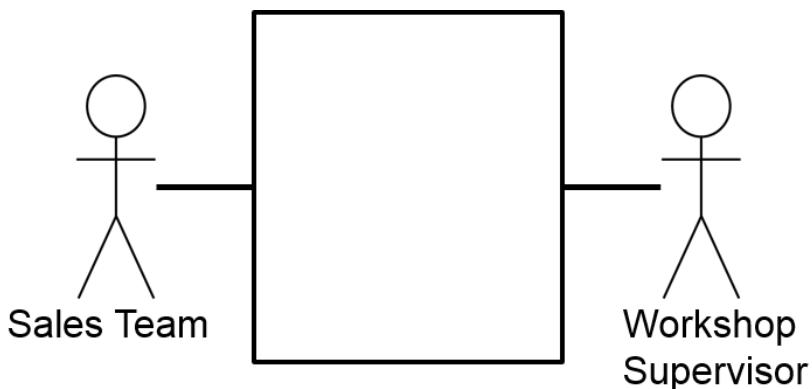
- ‘One picture is worth a thousand words’
- Shows the functions that actors require from the IT system, a ‘case of use’

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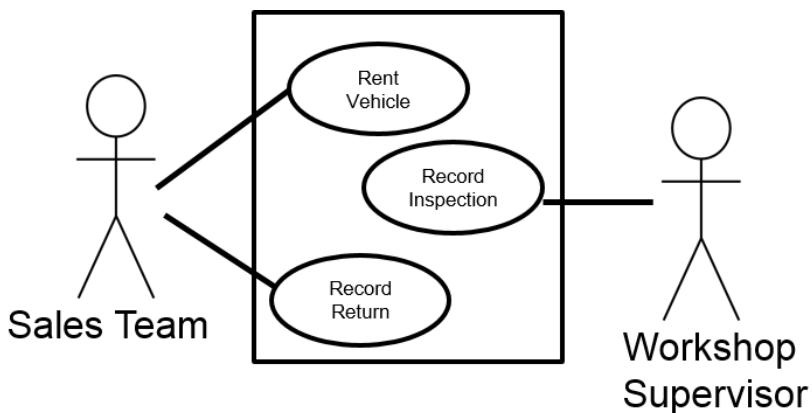


# Use Case Diagram Levels

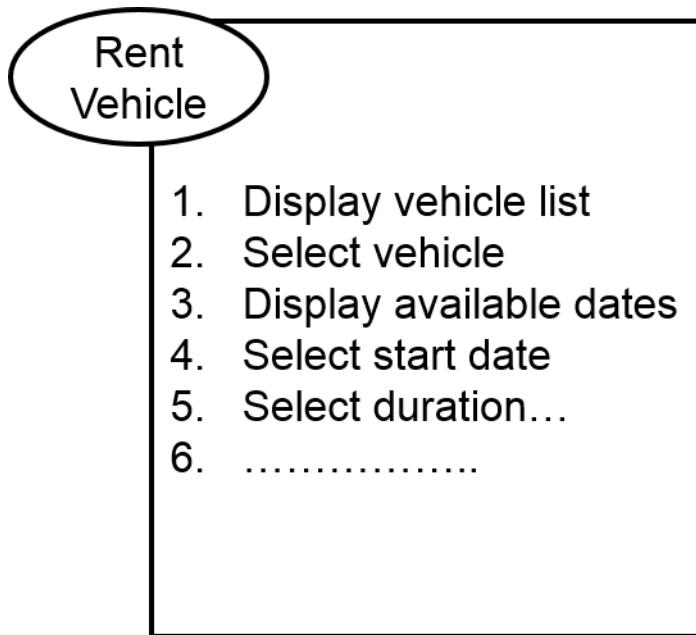
Context Diagram



Use Case Diagram



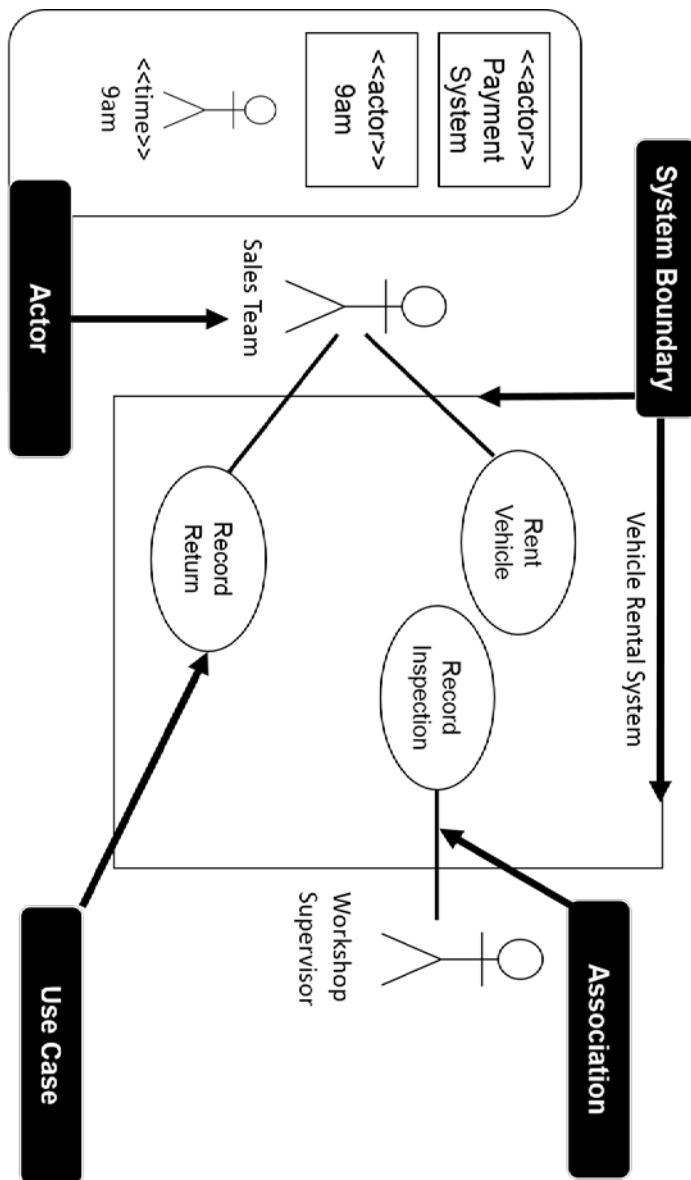
## Use Case Description



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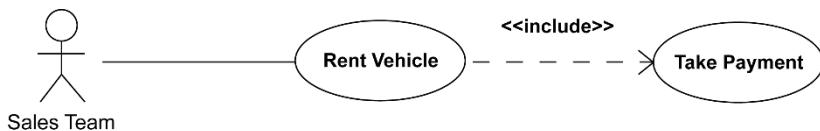
# Use Case Diagram



## <<include>> Relationship

### The <<include>> relationship

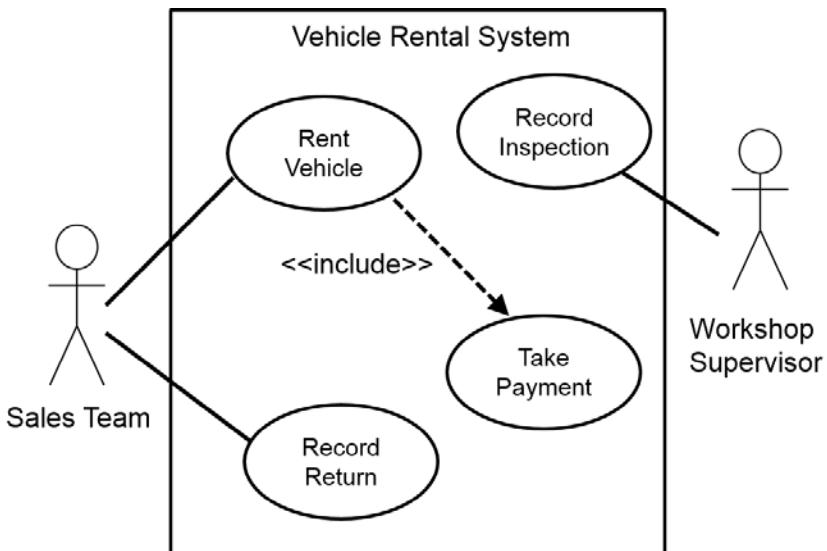
- Indicates that the rent vehicle use case includes the functionality of the take payment use case
- It has the sense that this functionality is always (unconditionally) included
- Allows re-use of functionality



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## Use Case Diagram with <<include>>



The use case diagram above shows that every time the Rent Vehicle use case runs, the Take Payment also needs to run. The relationship between the two is unconditional and shown as an <<include>>.

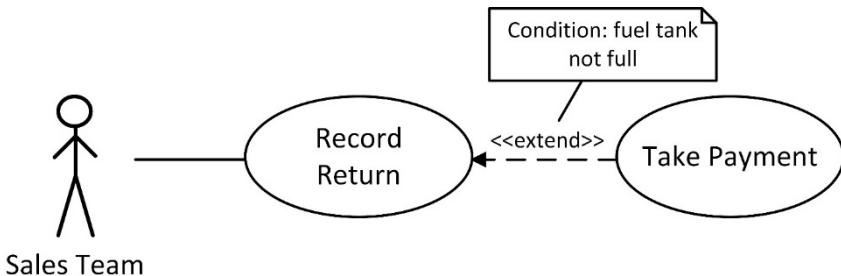
## <<extend>> Relationship

### The <<extend>> relationship

- Indicates that one use case has its functionality extended by the functionality of another

This extension occurs under certain conditions:

- Record Return may be extended by the functionality of Take Payment if the customer has not filled the fuel tank



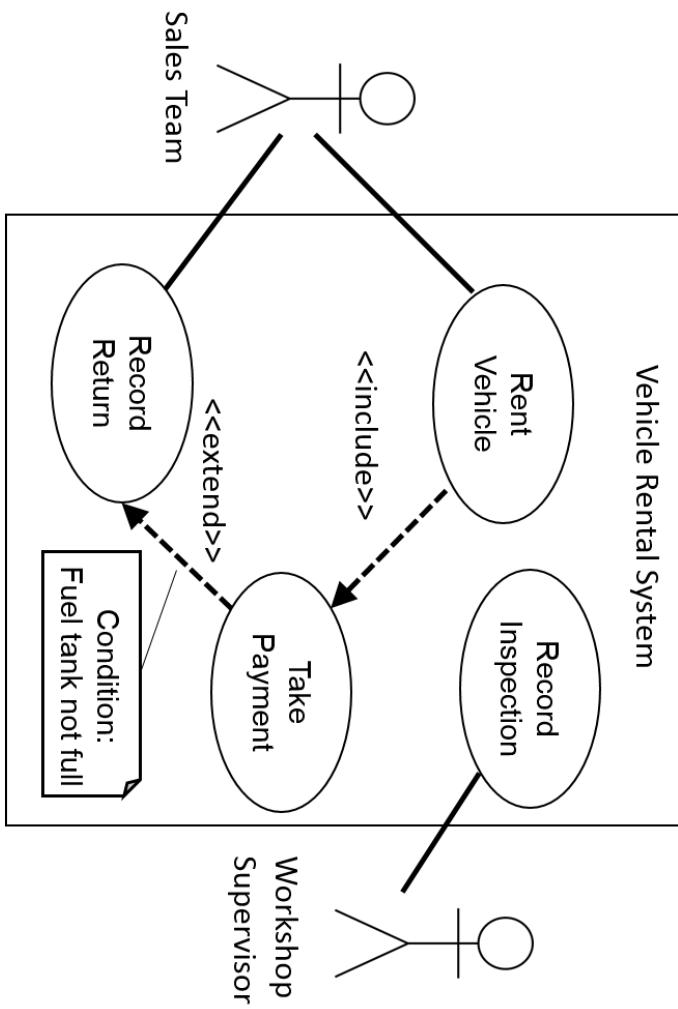
Pg 228

The extension takes place at one or more specific extension points defined in the extended use case.

The behaviour of the extending use case is considered to be inserted into the extended use case.

Note that the same extending use case can extend more than one use case.

# Use Case Diagram Complete





## Entity Relationship Diagrams

Entity: Something (noun) the business wants to collect and store data about

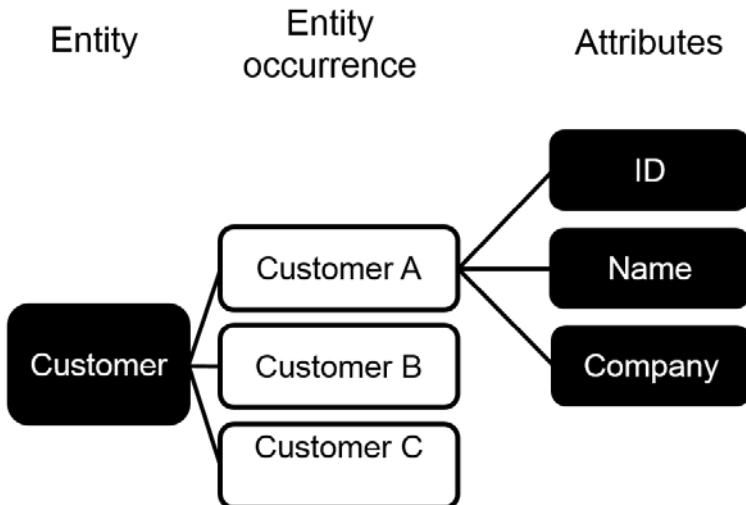
- **Physical** (for example, order, customer, supplier)
- **Conceptual** (for example, course booking, appointment)
- **Active** (for example, meeting, course delivery)

- Identifies the data that needs to be stored, attributes
- Entity occurrences must be uniquely identifiable
- Shows relationships between entities
- Used during database design

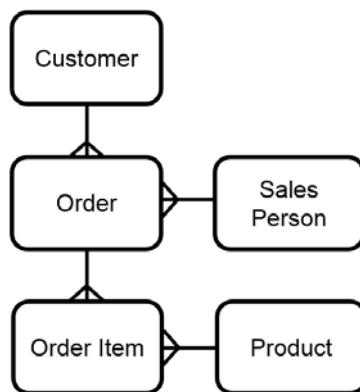
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## Entity Relationship Diagram Elements



Relationship degree  
between entities



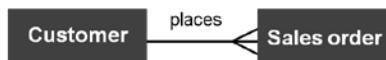
# Relationship Degree

“One to one”



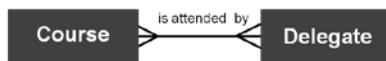
- **Each employee manages one department**
- **Each department is managed by one employee**

“One to many”



- **Each customer places many sales orders**
- **Each sales order is placed by one customer**

“Many to many”

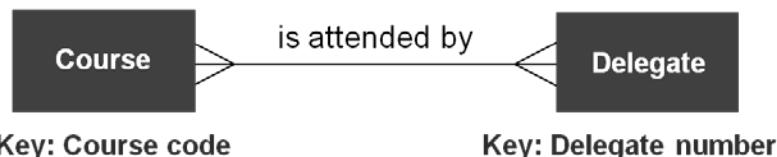


- **Each course is attended by many delegates**
- **Each delegate attends many courses**

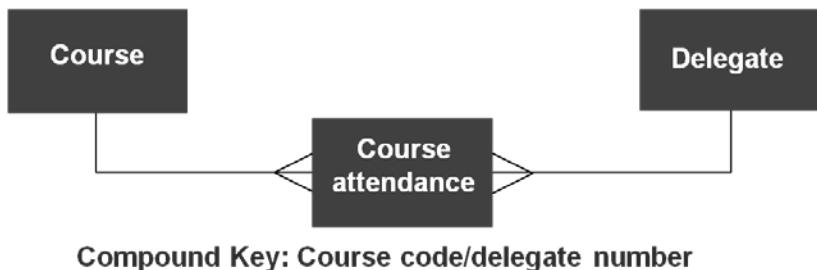
Pg 230 - 237



# Resolving Many-to-Many Relationships



In which entity type do you put the attribute 'exam result'?



Attributes:

- Course date attended
- Exam result
- Etc.

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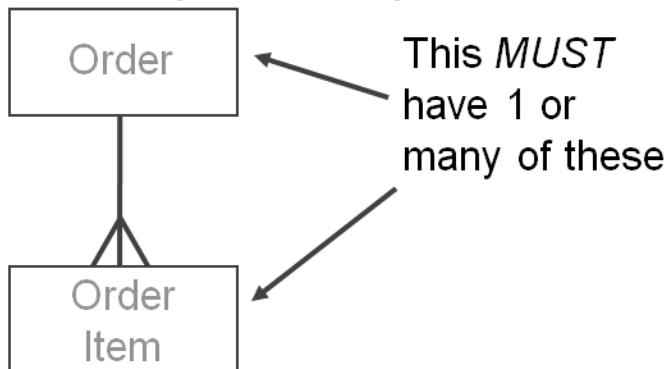


Many: many relationships are found on *logical data models*.

They must be resolved to produce a *physical data model*.

# Relationship Optionality

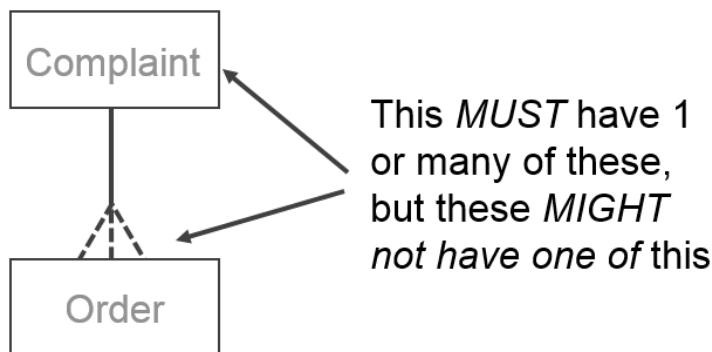
## Mandatory relationship



An Order MUST HAVE 1 or many Order Items

An Order Item MUST belong to an Order

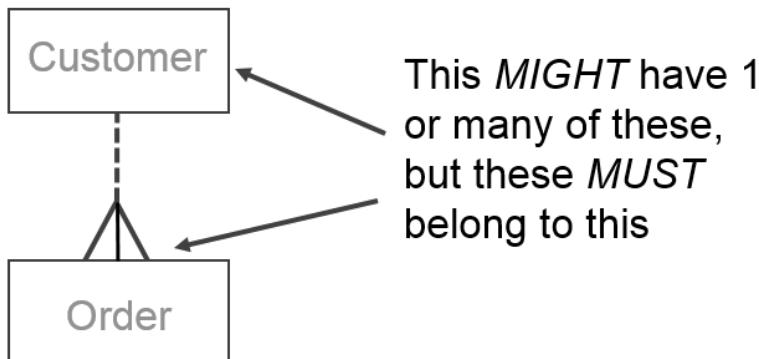
## Conditional relationship



A Complaint MUST have 1 or many related Orders

An Order MIGHT have a complaint

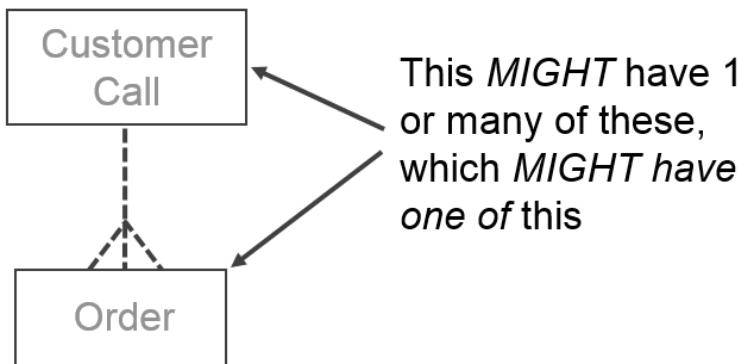
## Conditional relationship



A Customer MIGHT have one or may orders (they may be on the system for enquiries or to receive emails for example)

An Order MUST belong to a Customer

## Fully optional relationship

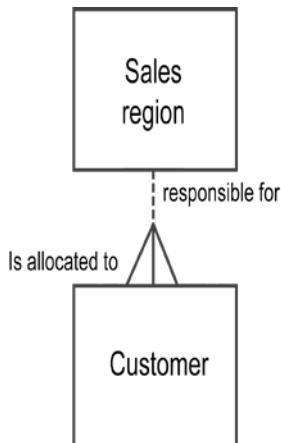


A Customer Call MIGHT relate to one or many Order/s

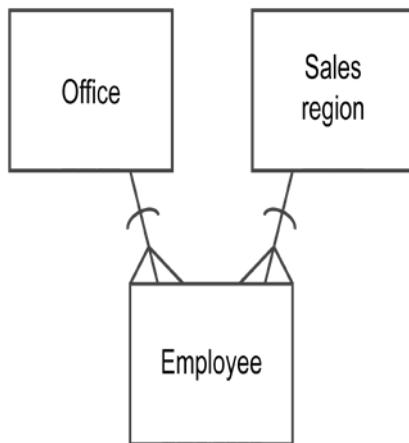
An Order MIGHT have a Customer Call



## Entity Relationship Diagram – Further Notation



Named relationships



Exclusive relationships

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Relationships should be named – usually in both directions.



*Exclusive relationship* – each employee must be allocated to one and only one sales region, or to one and only one office.

# Modelling Class Data – Class Models

**Class:** a generic definition of the data items, for example, 'Account'

*(similar to entities or Tables in a database)*

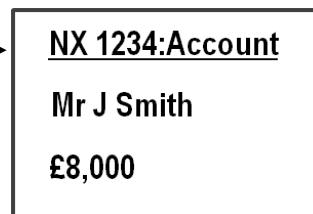
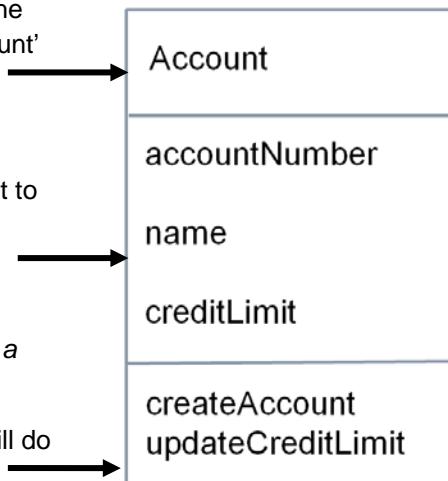
**Attributes:** something we want to hold data about, for example, 'Account number', 'Name' and 'Credit Limit'

*(similar to a Field or column in a database)*

**Operations:** What the class will do when the operation is 'called'.

Attributes are only accessible to the operations listed (encapsulation)

**Object:** an instance of the Account Class

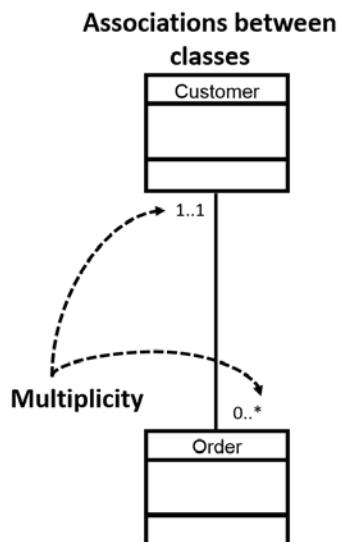
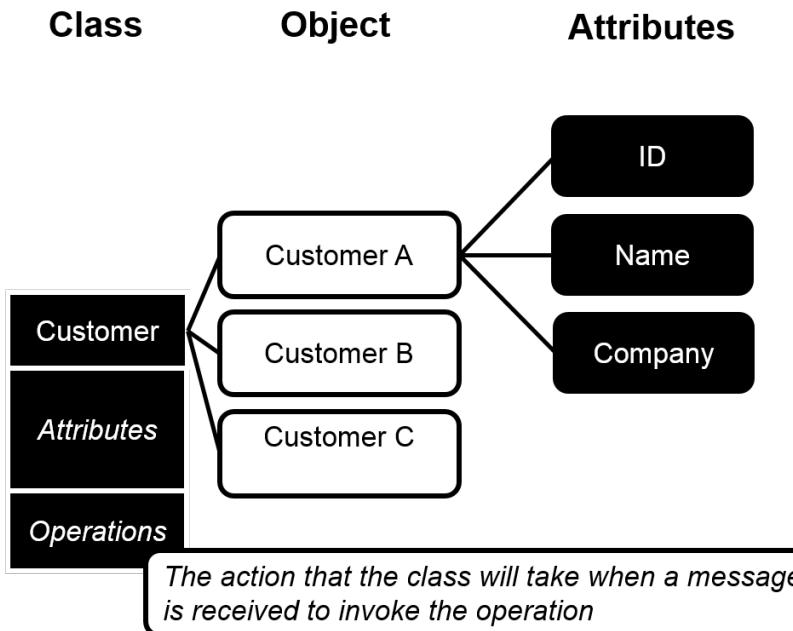


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**Encapsulation:** when the operations listed in a class can only access the attributes in that class.

# Class Diagram Elements



# Class Model Notation

- **Class name** – capitalise first initial
- **Attributes** – lower case with constituent parts shown with capitalised initials
- **Associations** with notation at each end indicating the **multiplicity** of instances per class (the range/number of objects that participate in the association)

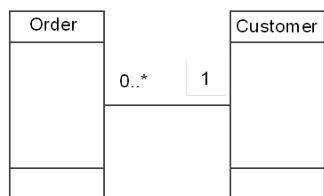
**Common multiplicities are:**

0..1 No instances, or one instance (optional, may)

1..1 Exactly one instance (or 1)

0..\* Zero or more instances (or \*)

1..\* One or more instances (at least one)



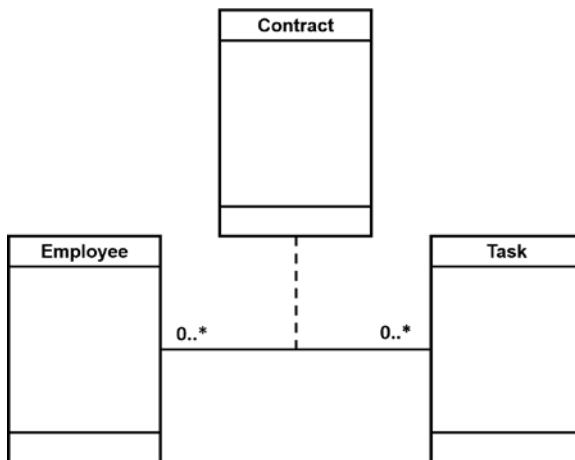
**Used to implement business rules**

2..12 A course delivery has a minimum of two and maximum of 12 delegates

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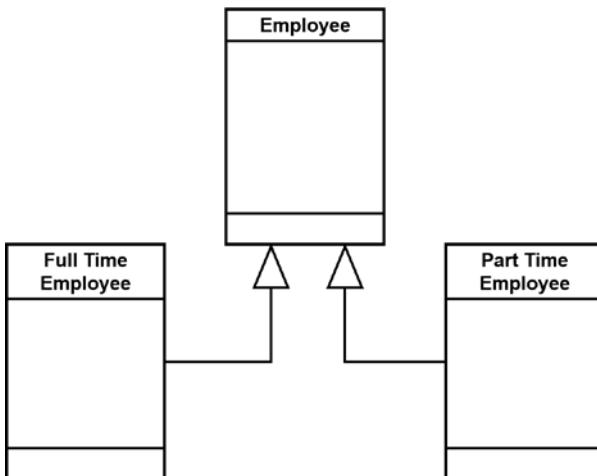


## Association classes



May be created  
when classes have a  
many to many  
multiplicity

## Generalisation



Where data is  
common to more than  
one class (in other  
words sub-classes)





## **Exercise 10: Modelling Functionality and Data**

Refer to Exercise 10 in your Exercise and Revision Workbook

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## Notes

# 13. Delivering the Requirements

Chapter 13. Delivering the Requirements

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2 Target Questions (Weighting 5%)

Topics

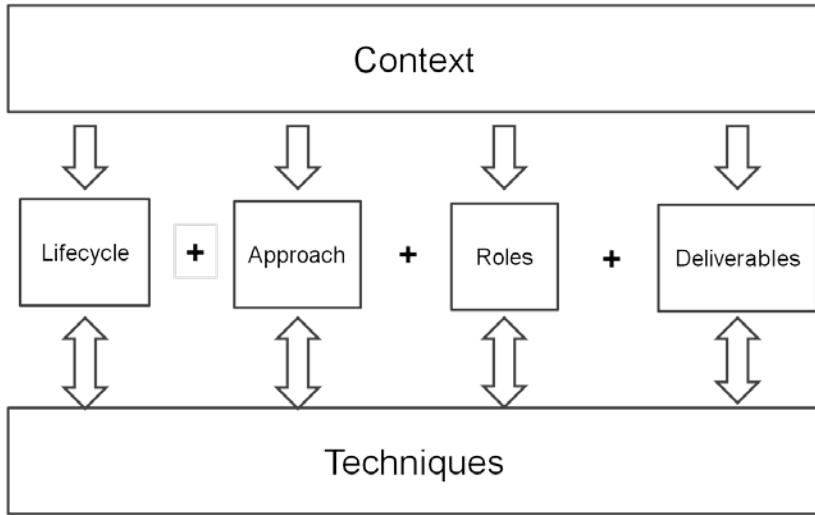
Delivering the solution

Context for the delivery approach

Delivery lifecycles

# Delivering the Solution

Factors in deciding the delivery approach



**Context** - The nature of the organisation and project that will provide the basis for deciding how the solution will be delivered

**Lifecycle** – The adopted process for delivery

**Approach** – Methods and standards that the business will use during the change project

**Roles** – The key roles that will be required during the project

**Deliverables** – The products that will be delivered by the project team

**Techniques** - The management and development techniques used to plan, analyse and document the project work

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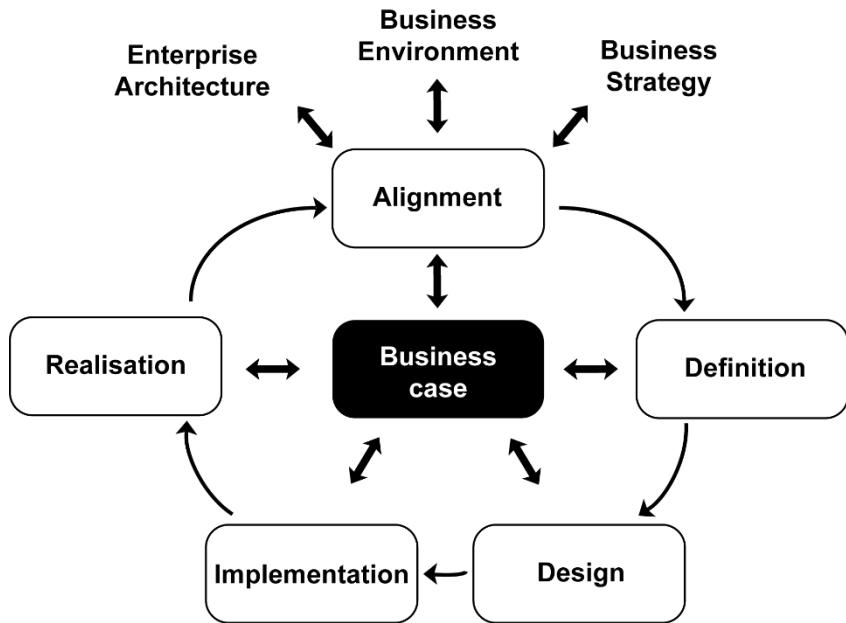


Context: The nature of the organisation and the project that will provide the basis for deciding how the solution will be delivered.

- **The nature and underlying philosophy of the organisation,** here we can consider questions such as what type of organisation this is, the nature of the business domain within which it operates and the values and beliefs of the senior managers
- **The business context for the required change,** for example, what the organisation is hoping to achieve in terms of business benefit as a result of this project
- **Constraints on the project,** for example, timescales for delivering the solution, the budget, what resources are to be made available and the standards for the organisation
- **The prioritised needs of the business,** for example, improved public image may be more important than cost savings or vice versa

**The drivers for the project,** for example, whether this project is based upon a need to comply with new legislation or whether it is concerned to offer additional or enhanced services to customers

# Lifecycle for Business Change



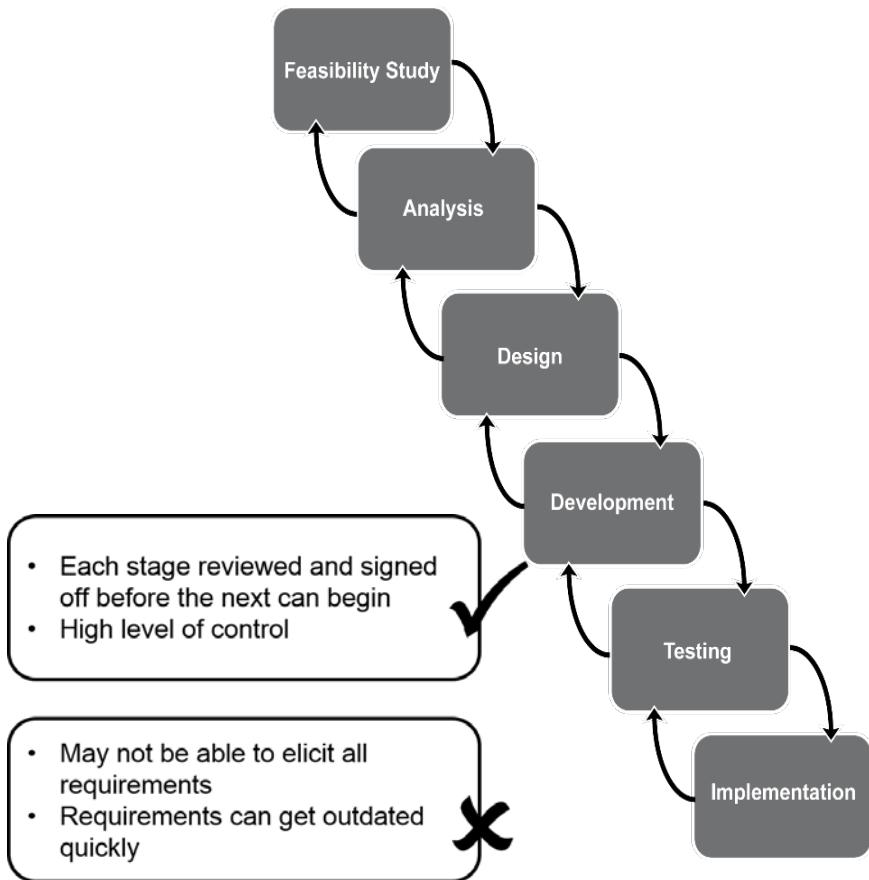
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The Business Change Lifecycle introduced in chapter 1 shows the sequence of stages needed to eventually deliver business changes.

This lifecycle gives us the stages and a logical approach to how to investigate, develop and design the changes required but it doesn't show how these changes should be carried out.

# Waterfall Lifecycle



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The Waterfall approach is the traditional approach to systems development.

Unfortunately, it does not allow for early testing as no thought is given to testing until all of the development is done.

It consists of the following sequential phases:

1. *Feasibility* – project initiation. Define Terms Of Reference (TOR). High-level investigation and estimates. Preliminary exploration of problems and possible solutions. Benefits versus costs of candidate solutions. Recommendation of one option. This is where the business analyst is involved.
2. *Analysis* – Investigate, document and assess current system. Gather and document new requirements. Requirements documentation produced and signed off.
3. *Design* – High-level design of the system including database design and user interface design, followed by detailed design when program specifications are produced.
4. *Development* – Perform detailed technical design. Decompose specifications further into units or components. Specify and code these components.
5. *Testing* – Test components then components are brought together to form higher level systems and tested.
6. *Implementation* – Train staff, user acceptance testing and handover.

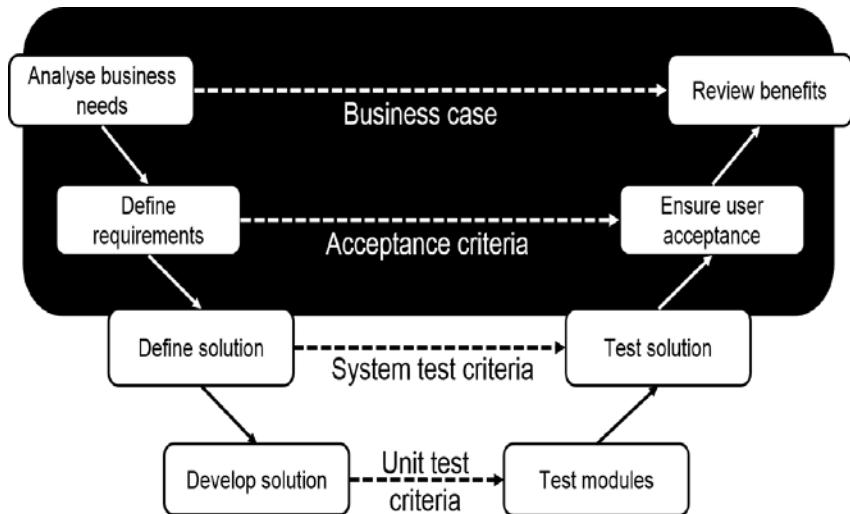
SSADM is an example of a traditional waterfall methodology.

The backwards facing arrows indicate the need to check back at each stage, to ensure the project stays in scope, that each stage builds logically on its predecessor and modifications to deliverables from a previous stage may be made.



## V-model

A "V" model shows the traceability of requirements (down the left hand side), and the origins of the tests (the horizontal arrows).



In the shaded box is considered the main scope of the business analyst

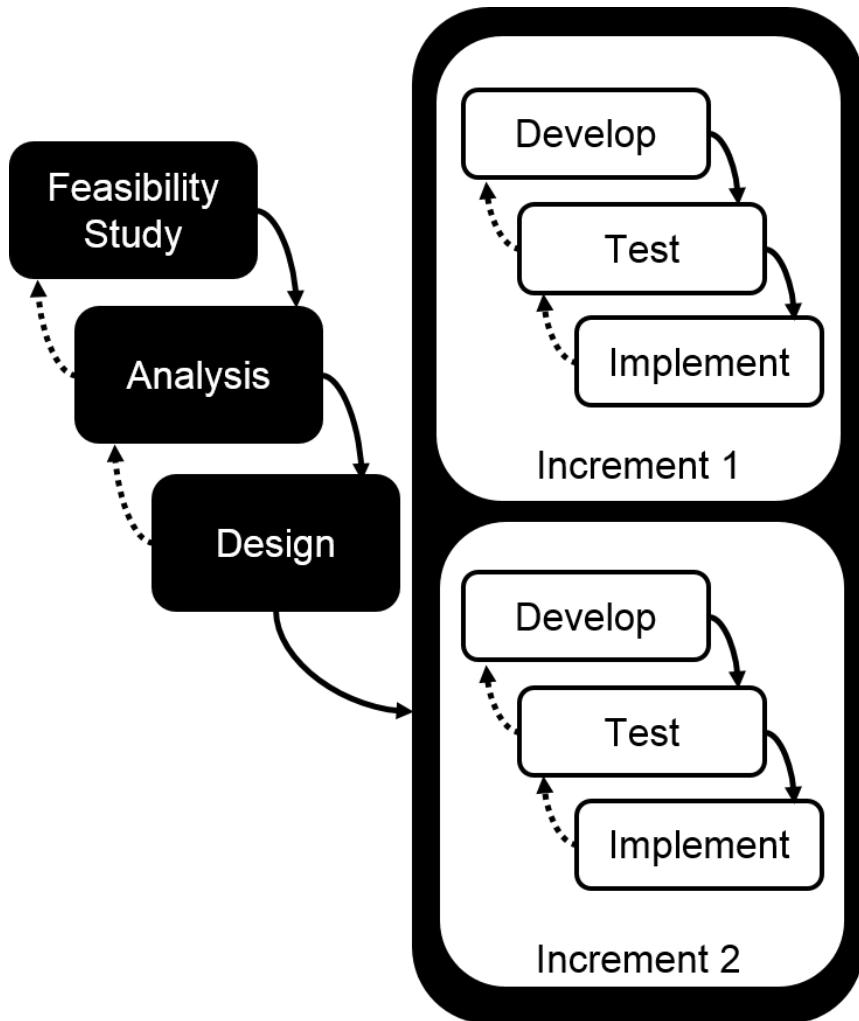


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The V model is basically a waterfall model which explicitly shows the connection between the development stages of the project and the later testing phases. In the variation of it, shown above, the initial work concerns analysing the business needs and developing the business case that justifies the recommended solution. This is the domain of the Business Analyst who is involved with defining the options in the business case and supporting the business in doing the User Acceptance Testing amongst other things.

## Incremental Delivery



In this approach, analysis and design are completed up front.

- Development is divided into discrete phases, which are:
  - Planned
  - Have targeted deliverables

- The product is decomposed into separate components (often referred to as 'chunked up')
  - Components are designed, built and tested separately
  - Integration testing (done at the end to pull all components together) can be complex due to the components all being built separately
- The product tends to evolve as each release is completed and it also means that each increment can influence how the next is going to be built

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Learning comes from both the development and use of the system, where possible.

To use this approach, all requirements must be known at the start. This distinguishes the approach from an iterative lifecycle, which is described next.

# Iterative Systems Development

Useful when complete set of requirements not possible upfront

This approach is governed by fundamental principles:

- Evolutionary
- Empowerment and collaboration
- Fit for purpose
- Test all the time
- Re-factoring
- Incremental delivery
- Prioritisation – e.g. MoSCoW
- Time-boxing

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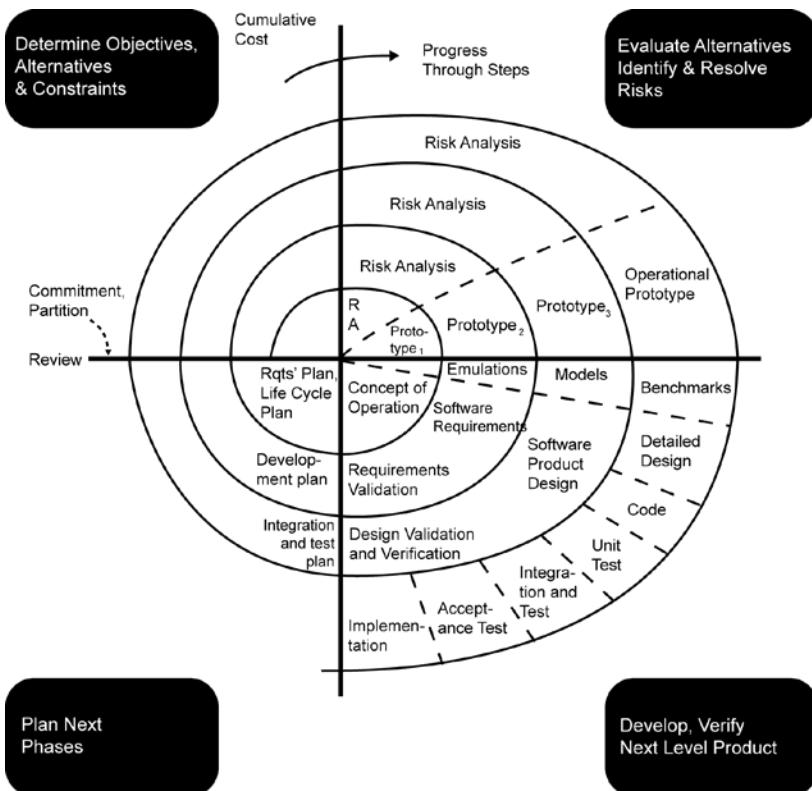
Iterative or evolutionary systems development may be used when a complete set of requirements cannot be gathered at the start of the project.

This approach allows requirements to be gathered iteratively.

Prototypes are demonstrated to the business user, feedback is captured and further requirements built into the next prototype.

The system is delivered once, after a number of iterations.

## Iterative Systems Development (Boehm's Spiral Model)



The spiral model has four quadrants: Determine objectives, Identify and resolve risks, Development and Test, and Plan the next iteration.

The spiral model was defined by Barry Boehm in 1985. This model was not the first model to discuss iterative development, but it was the first model to explain why the iteration matters. As originally envisioned, the iterations were typically 6 months to 2 years long, and was intended to be used with high risk mission critical development e.g. nuclear power station.

The spiral model is used most often in large projects (by companies such as IBM and Microsoft) and needs constant review to stay on target. Each phase starts with a design goal and ends with the client (who may be internal) reviewing the progress thus far.

The iterative approach greatly influenced the development of the Rapid Application Development approach in the 1980s and subsequently the development of Agile.

# Development and Delivery Approach

- How do we work?
- How will we deliver the solution?
  
- Software development approaches
  - Unified Process (UP) – UML
  - Agile – DSDM Atern, Scrum
  
- The importance of prioritisation
  
- Software package approach – COTS
  
- Roles, deliverables and techniques of the project depend upon:
  - The organisation and project context
  - The lifecycle
  - The approach

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## Notes

# 14. Delivering the Business Solution

Chapter 14. Delivering the Business Solution

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2 Target Questions (Weighting 5%)

Topics

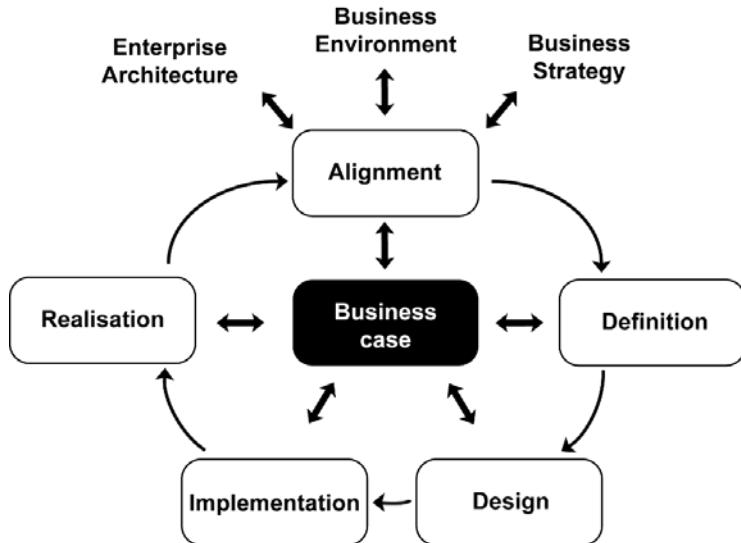
BA role in the business change lifecycle

Design stage

Implementation stage

Realisation stage

# Lifecycle for Business Change



## Alignment

- of business in a changing environment

## Definition

- plan human dimension of change

## Design

- business processes, specifications, development and testing

## Implementation

- planning and preparation for deployment into BaU

## Realisation

- ensure planned change has taken place and benefits achieved

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# The Role of the BA in the Business Change Lifecycle

Business Analyst involved with change:

- **Throughout:**
  - from inception to implementation
- At the **Design** stage:
  - Active, constant involvement
- At the **Implementation** stage:
  - Planning and execution of Implementation stage
- At the **Realisation** stage:
  - Planning for success (and the measurement of that success)

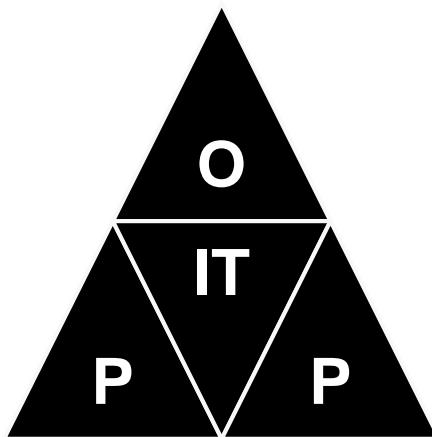
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Tools and Techniques available for each stage



# Involvement in the Design Stage



- POPIT™ model useful to consider all areas
  - People – skills?
  - Organisation – structures, measurement and reporting, jobs?
  - Process design – implementation?
  - Information and Technology – designing, developing and testing the solution?

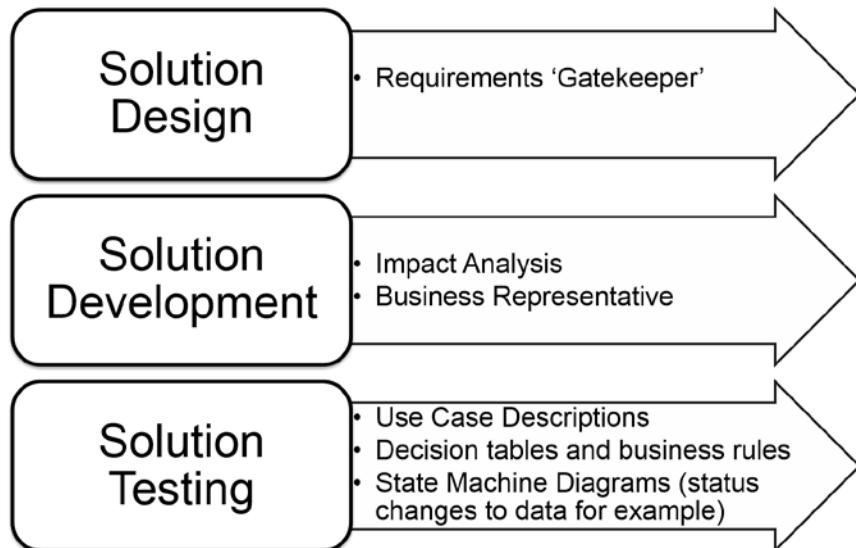
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The design stage is likely to be where the BA has the most involvement in the project.

Implementation will be where the changes are made real (and therefore the BA is accountable for them as the project moves towards this stage)

# Information and Technology – Role of the BA



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The BA is usually heavily involved in the Design stage and in particular the planning and support of the Information and Technology needs of the business.

During **solution design** the BA is the gatekeeper of the requirements – they must ensure that the requirements are being accurately interpreted and remain true to the needs of the business.

During **development** the BA may be required to assess changes, performing impact analysis and will be the business representative during this time.

During **Testing** the BA may need to use Use Case Descriptions to describe the sequence of tasks needed to test, the order that these tests occur in. There may also be a need to create or refer to decision tables to ensure that the testing covers all possible combinations.

State Machine diagrams can be used to understand the changes to data during its lifecycle which will be important in planning the sequence of tests and the values required.

# Involve ment in the Implementation Stage

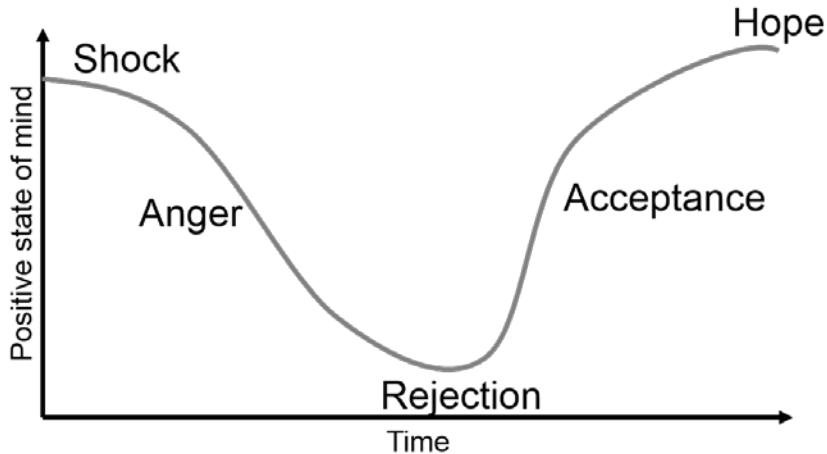
Business Analyst involvement upfront to:

- Plan
- Ensure that change is carefully executed
- Understand and lessen emotional impacts
- Measurement and monitoring towards business goals and objectives

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## Implementation: Emotions and the Change Process



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**Shock** – Lack of awareness of the need for change

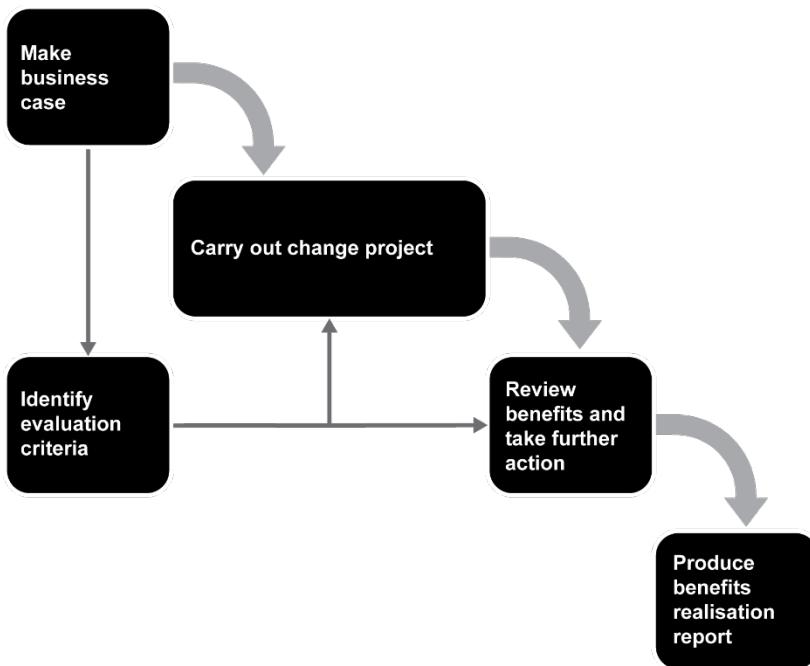
**Anger** – Understanding what the change means for me

**Rejection** – Of ideas, and avoidance of change

**Acceptance** – Change is going to happen so I must accept it (but not always agree with it!)

**Hope** – Positivity and looking forward

# The Benefits Realisation Approach



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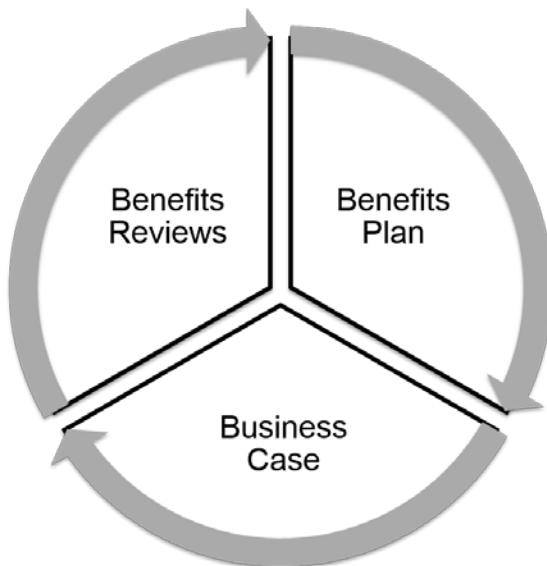
The above shows that the planning of the benefits realisation stage occurs early on in the project. As the project progresses the evaluation criteria will be identified and refined.

At the end of the project the benefits can be reviewed and actioned. At a later stage the benefits realisation report should be written and published. This may not occur until the change is well established in BaU, perhaps even years after implementation.

## Involvement in Realisation Stage

Must be well defined, planned and manageable benefits identified

Three distinct areas exist:



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# Benefits Plan

## Context/Vision

- What is the background for the change?
- Provides the business context

## Benefits profiles

- Benefit owner – the person who will ensure that the benefit is achieved (this could be through feeding into requirements for reporting so data can be monitored for example)

## Benefits dependency network

- Diagram for what needs to be done showing the changes that will enable the change, the business changes required to achieve those and the benefits
- Responsibilities can be included and identified
- Tracking of benefits

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# Realisation Stage: Business Case

As we have seen this is central to the Business Change Lifecycle.

It should be used to:

- Facilitate change controls and impact analysis by checking scope, cost, resources and any constraints or requirements identified for the solution itself (such as restrictions on software or hardware that the business uses)
- Facilitate reviews, both **scheduled** and **unscheduled**

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# Realisation Stage: Benefits Reviews

## Scheduled reviews

- Based on project decision gates
- Can we still meet the forecasted benefits?
- Is the investment sufficient?

## Unscheduled reviews

- Triggered by events during the project
- Major change requests
- Budget, stakeholder, strategic or resource changes

## Benefits Realisation report

- Has the change been successful?
- Have we managed time, effort and cost effectively?
- Provide input into future business cases
- Facilitates future selection of projects

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## Notes

# Target question weighting

Chapter (Book)	Syllabus Area	Target Questions
1	What is Business Analysis?	1
2	The competencies of a Business Analyst	1
3	Strategy Analysis	3
4	The Business Analysis Process Model	2
5	Investigation Techniques	6
6	Stakeholder Analysis and Management	4
7	Modelling Business Processes	4
8	Defining the Solution	2
9	Making a Business and Financial case	4
10	Establishing the Requirements	3
11	Documenting and Managing Requirements	3
12	Modelling Requirements	3
13	Delivering the Requirements	2
14	Implementing Business Change (Delivering the Solution)	2
TOTAL		40

# Recommended Reading List

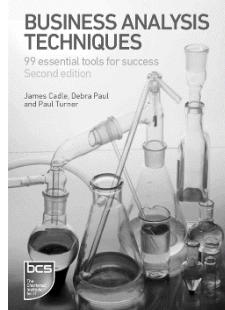
**The following list may be of interest to delegates:**

Title: Business Analysis Techniques 99 Essential Tools for Success (2<sup>nd</sup> edition)

Author: ed by James Cadle, Debra Paul and Paul Turner

Publisher: BCS, Publication Date: 2014

ISBN: 9781780172736



Title: Managing Change (2nd Edition)

Author: Dr Christopher Mabey and William M Mayon-White

Publisher: Sage Publishing in association with the Open University

Publication Date: 2010

ISBN: 1-85396-226-0

Title: How to Manage Business Change (2nd Edition)

Author: OGC

Publisher: Format Publishing, Publication Date: 2001

ISBN: 1-903-09101-2

Title: Competitive Strategy

Author: Michael E Porter

Publisher: The Free Press Publication Date: 1980

ISBN: 0-02-925360-8

Title: Exploring Corporate Strategy (5th Edition)

Author: Prof Gerry Johnson and Prof Kevan Scholes

Publisher: Prentice Hall Publication Date: 1998

ISBN: 0-13-080739-7

*Part 11, strategic analysis, is the most useful part of this book for this syllabus.*

Title: Balanced Scorecard

Author: Dr Mike Bourne & Pippa Bourne

Publisher: Chartered Management Institute, Publication Date: 2007

ISBN: 978 0340 946497

Title: Systems Thinking, Systems Practice

Author: Peter Checkland

Publisher: John Wiley & Sons , Publication Date: 1999

ISBN: 0-4719-8606-2

*This book is useful for additional reading only. Key areas are those that explain the concept of Weltanschauung and the CATWOE framework, and the overview of the Soft Systems Methodology.*

Title: Benefits Management: how to increase the business value of your IT projects (2<sup>nd</sup> edition)

Author: John Ward & Elizabeth Daniel

Publisher: John Wiley & Sons, Ltd, Publication Date: 2012

ISBN: 978 1119993261

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