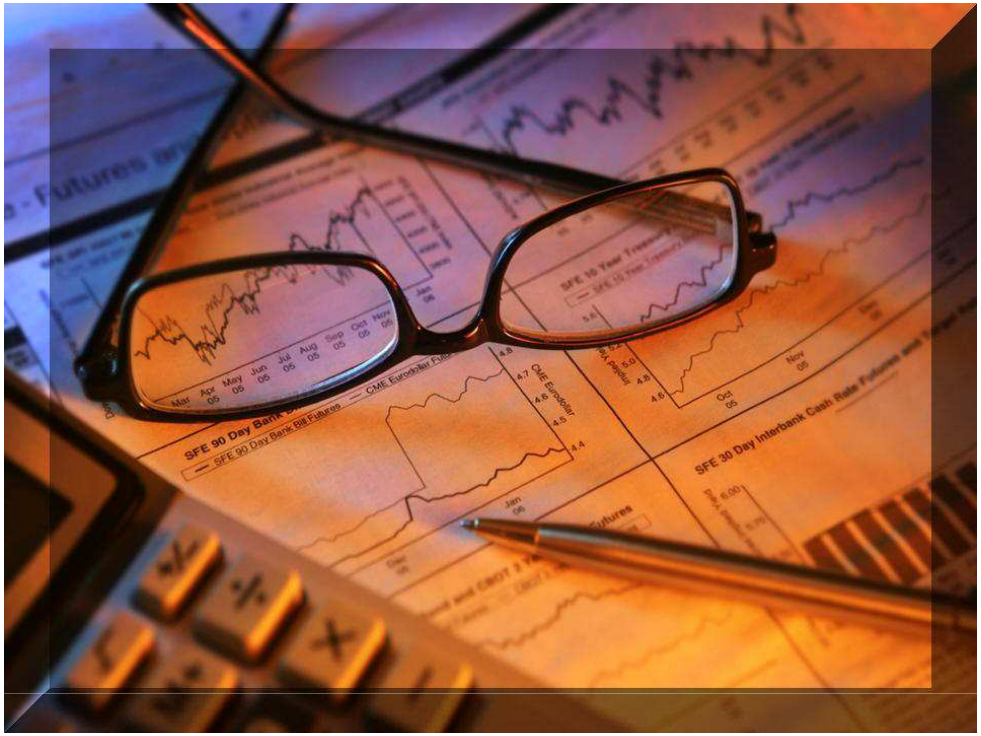


Business Analysis

Anuj Anand

Agenda

- Business Analysis – Definition
- Role of Business Analyst
- Requirements
  - ✓ Requirements Types
- Business Analysis Planning and Monitoring
  - ✓ Conduct Stakeholder Analysis
  - ✓ Plan Business Analysis Activity
  - ✓ Plan Business Analysis Communication
  - ✓ Plan Requirement Management Process
  - ✓ Plan , Monitoring , Report on Business Analysis Performance
- Requirement Management and Communication
  - ✓ Manage Solution and Requirement Scope
  - ✓ Manage Requirement Traceability

Agenda

- Enterprise Analysis
  - ✓ Identify Business Need & Determine Solution Approach
  - ✓ Enterprise Analysis Knowledge Area
    - ✓ Define the Business Need
    - ✓ Determine Gap in Capabilities to Meet the Business Need
    - ✓ Determine Recommended Solution Approach
    - ✓ Define Solution Scope
    - ✓ Develop Business Case
    - ✓ Techniques
- Elicitation
  - ✓ Elicitation Techniques
- Requirements Analysis
  - ✓ Organize Requirements
  - ✓ Prioritize Requirements
  - ✓ Specify and Model Requirements
    - ✓ Guidelines for Writing Requirements
    - ✓ The Requirement Life Cycle

Agenda

- ✓ Requirements Classification
- ✓ Determine Assumptions and Constraints
- ✓ Verify Requirements
  - ✓ Characteristics of Requirement Quality
- ✓ Validate Requirements
  - ✓ Data Modeling V/s Process Modeling
  - ✓ Conceptual Data Modeling
  - ✓ UML

- Solution Assessment and Validation
  - ✓ Elicitation Techniques
- Business Analysis – Other Concepts
  - ✓ Business Analysis in the Organizational Model
  - ✓ Business Analysis – Requirement Continuum
  - ✓ Role of the Project Manager
  - ✓ Role of Business Analyst
  - ✓ Skills Comparison – Similarities

Agenda

- Business Analysis – Other Concepts
  - ✓ Skills Comparison – Differences
  - ✓ How do a PM and BA Work Together
  - ✓ Business Analysis – Role Comparison
  - ✓ Role Delineation
  - ✓ Maturity Level – Process v/s Role
  - ✓ Skills Comparison – Overlaps
  - ✓ Maturity Level – Tools v/s Skills
  - ✓ Business Analysis assessment scope

- Agile Business Analyst- Comparison
- Appendix – Risk
- Other Important Reference Material

Business Analysis- Definitions

According to WIKIPEDIA@:

Business analysis helps an organization to improve how it conducts its functions and activities in order to reduce overall costs, provide more efficient use of resources, and better support customers. It introduces the notion of process orientation, of concentrating on and rethinking end-to-end activities that create value for customers, while removing unnecessary, non-value added work. The person who carries out this task is called a business analyst or BA.

According to IIBA@:

Business Analysis is "…The set of tasks and techniques used to work as a liaison among stakeholders in order to understand the structure, policies, and operations of an organization to achieve its goals…"

Those Business Analysts who work solely on developing software systems may be called IT Business Analysts or Technical Business Analysts.

Definition of the Business Analyst Role

- A business analyst works as a liaison among stakeholders in order to elicit, analyze, communicate and validate requirements for changes to business processes, policies and information systems.
- The business analyst understands business problems and opportunities in the context of the requirements and recommends solutions that enable the organization to achieve its goals

Definition of a requirement

Requirements vary in intent and in kinds of properties. They can be functions, constraints, or other elements that must be present to meet the needs of the intended stakeholders. …For clarification purposes, a descriptor should always precede requirements; for example, business requirements, user requirements, functional requirements.

Good requirements are focused on creating software products by being:

- Traceable to the business- map to an explicit business architecture.
- Consumable by the technical staff- used entirely and the only source

Definition of Requirements Types

- Business requirements
- Stakeholder / User requirements
- Solution Requirements
  - Functional Requirements
  - Non Functional Requirements
  - Implementation Requirements

Requirements Classification

Requirements Types

- **Business Requirements**
  - Are higher-level statements of the goals, objectives, or needs of the enterprise.
  - They describe such things the reasons why a project is initiated, the things that the project will achieve, and the metrics which will be used to measure its success

- **Stakeholder / User Requirements**
  - Are statements of the needs of a particular stakeholder or class of stakeholders.
  - They describe the needs that a given stakeholder has and how that stakeholder will interact with a solution

- **Solution Requirements**
  - The main characteristic of the solution that meets the stakeholder and business requirement
  - They are Frequently divided into
    - Functional Requirements
    - Non Functional Requirements

Requirements

- **Functional Requirements**
  - Describe the behavior and information that the solution will manage.
  - They describe capabilities the system will be able to perform in terms of behaviors or operations – a specific system action or response.

- **Non- Functional Requirements**
  - Capture conditions that don't directly relate to the behavior or functionality of the solutions, but they describe the environment conditions , under which the solutions must remain effective or qualities that the system must have.
  - These are also known as the qualities or supplementary Requirements

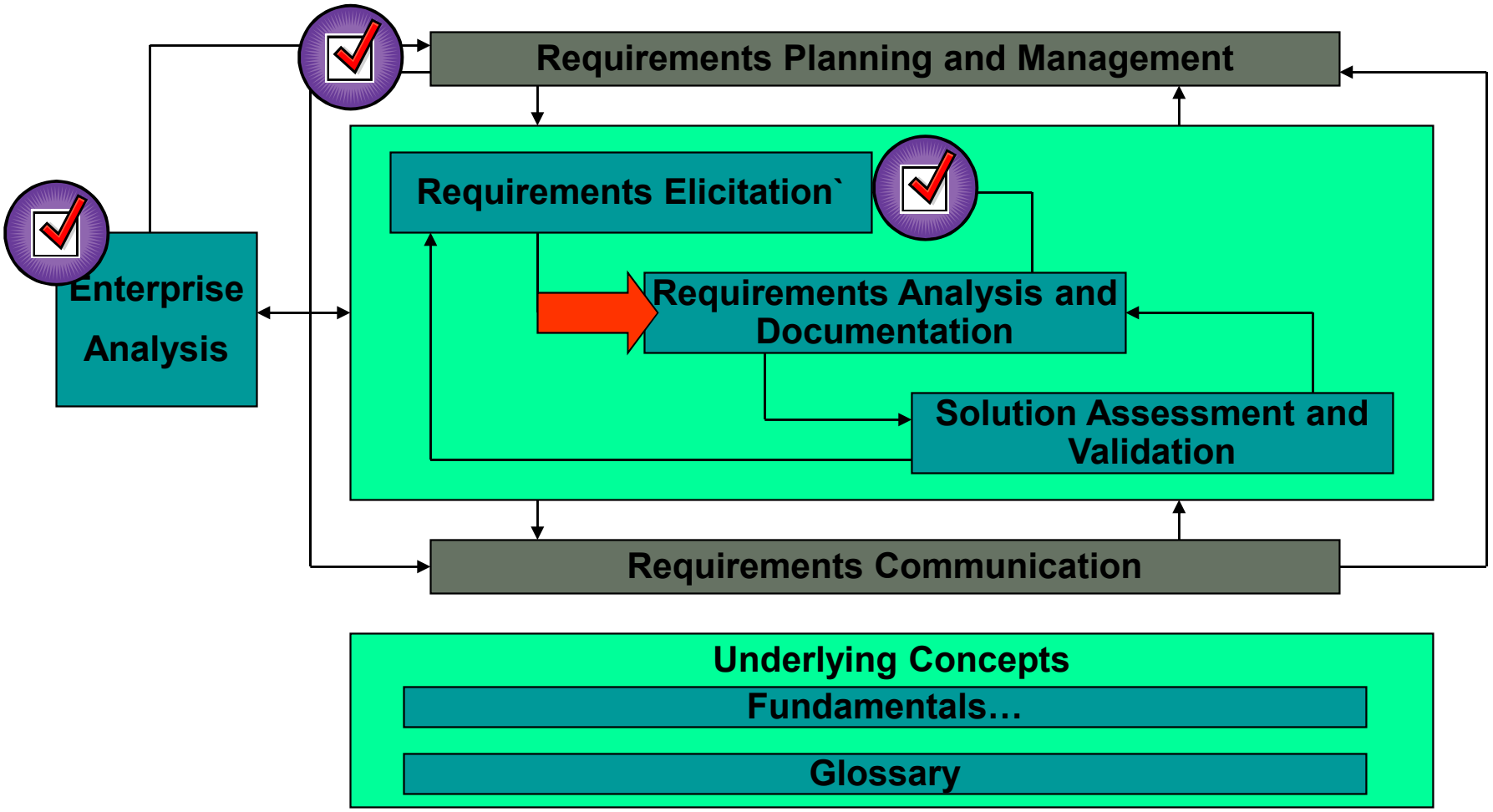
- **Implementation requirements**
  - Describe capabilities that the solution must have in order to facilitate transition from the current state of the enterprise to the desired future state, but that will not be needed once that transition is complete

Quality of the Requirements

- ***Validate Requirements*** describes how the Business Analyst determines that the functional and quality of service requirements will fulfill the original business requirements.

- ***Verify Requirements*** describes how the Business Analyst determines that the requirements documentation is of sufficient quality to begin solution development.

BABOK Review…



Business Analysis Planning and Monitoring

Chapter 2

Business Analysis Planning and Monitoring Chapter 2

Focus Areas

- How to determine which activities are necessary to perform in order to complete a business analysis effort.
- Covers identification of stakeholders, selection of business analysis techniques, the process used to manage the requirements.
- Assessment of the progress of the work in order to make necessary changes in work effort.

- *Business analysis planning is a key input to the project plan, and project management responsibilities include organizing and coordinating business analysis activities with the needs of the rest of the project team.*

Purpose

- Plan the execution of business analysis tasks.
- Update or change the approach to business analysis as required.
- Assess effectiveness of and continually improve business analysis practices.

Business Analysis Planning and Monitoring Chapter 2

Tasks	Purpose	Inputs	Outputs
Conduct Stakeholder Analysis	Identify stakeholders who may be impacted by a proposed initiative or who share a common business need. This task includes determining appropriate stakeholders for the project or project phase, and analyzing stakeholder influence, authority (approve, sign off, veto), and project attitude.	• Organizational Standards • Defined Business Problem/Opportunity	• Stakeholder list • Stakeholder roles and responsibility designation
Plan Business Analysis Activities	Determines which activities are required to define the solution to a business problem, how those activities will be carried out, the work effort involved, and an estimate of how long the activities will take. • Identifies business analysis deliverables • Determines the scope of work for the business analysis activities • Determine tasks for the business analysis activities in the Knowledge Areas: Enterprise Analysis, Elicitation, Requirements Analysis, Solution Assessment and Validation. Detail will vary from KA to KA. • Identifies task dependencies, and interfaces between tasks • Develop estimates for BA work (time, skill level, complexity of tasks, etc.)	• Stakeholder list • Stakeholder roles and responsibility designation • Organizational Standards	Business Analysis Plans for: • Enterprise Analysis • Business Analysis Planning and Monitoring • Elicitation • Requirements Analysis • Solution Assessment and Validation • Requirements Management and Communication

Business Analysis Planning and Monitoring Chapter 2

Tasks	Purpose	Inputs	Outputs
Plan Business Analysis Communication	Determine what information the various stakeholders need to be provided about the results of business analysis and the forms it should take (verbal, written, etc). It includes considerations for, as well as constraints, impacts, durability and trade-offs of different communications media.	• Stakeholder list • Stakeholder roles and responsibility designation • Business Analysis Plan(s)	Business Analysis Communication Plan
Plan Requirements Management Process	Describes how to determine the appropriate requirements process for a particular initiative. It describes how we determine what is currently in place, and how to create the process if it doesn't exist. It includes determining whether and how requirements are changed, which stakeholders need to approve (instead of the actual approval of requirements), as well as who will be consulted on, or informed of changes, etc. It also includes the approach to requirements traceability and determining which requirements attributes we will capture.	• Organizational Standard • Business Analysis Plan(s)	Requirements Management Plan

Business Analysis Planning and Monitoring Chapter 2

Tasks	Purpose	Inputs	Outputs
Plan, monitor and Report on Business Analysis Performance	Determine which metrics will be used to measure the work performed by the business analysts. It includes how we track, assess, and report on the quality of the work performed by business analysts and take steps to correct any problems that may crop up. If problems are identified, determine appropriate corrective action (which may feed into the development of future plans on this or other projects).	• Organizational Performance Standards • Actual Performance Metrics • Business Analysis Plan(s) • Requirements Management Plan	• BA Performance Assessment • Lessons Learned • Process improvement recommendations

Conduct Stakeholder Analysis

Tasks	Purpose	Inputs	Outputs
Conduct Stakeholder Analysis	Identify stakeholders who may be impacted by a proposed initiative or who share a common business need. This task includes determining appropriate stakeholders for the project or project phase, and analyzing stakeholder influence, authority (approve, sign off, veto), and project attitude.	• Organizational Standards • Defined Business Problem/Opportunity	• Stakeholder list • Stakeholder roles and responsibility designation

- **The BA actually identifies the**
  - ***Stakeholders, defines roles and responsibilities, develops task for estimates, helps the prioritization of the requirements, estimates for business analysis tasks, plan requirements, develops which requirement process will be followed in a particular Sequence.***

- **It is basically starts with the Definition of the team:-**
  - ✓ **Executive Sponsor**
  - ✓ **Business Analyst**
  - ✓ **Project Manager**
  - ✓ **Developer**

Conduct Stakeholder Analysis

- ✓ **Quality Assurance Analyst**
- ✓ **Trainer**
- ✓ **Application Architect**
- ✓ **Data Modeler**
- ✓ **Database Analyst (DBA)**
- ✓ **Infrastructure Analyst**
- ✓ **Information Architect**
- ✓ **Solution Owner**
- ✓ **End User**
- ✓ **Subject Matter Expert (SME)**
- ✓ **Stakeholders**

- **Each Member is under the RACI Matrix :-**
  - **Role in Requirements Planning and Management RACI (*Responsible , Accountable, Consulted, Informed)* and they have a prescribed description:-**

Conduct Stakeholder Analysis

Executive Sponsor	*C*
Business Analyst	*R*
Project Manager	*A*
Developer	*C*
Quality Assurance Analyst	*I*
Trainer	*I*
Application Architect	*C*
Data Modeller (See Information Architect)	*C*
Database Analyst (DBA)	*C*
Infrastructure Analyst	*C*
Business Architect	*R*
Information Architect	*C*
Solution Owner (See Executive Sponsor)	*C*
End user	*I*
Subject Matter Expert (SME)	*C*
Other Stakeholders	*R, C, I (varies)*

Conduct Stakeholder Analysis

- **The BA should do the following set of activities :-**
  - **Taking into account the need of stakeholders and their individual interest, because later changing the requirement would be too tedious a task.**
  - **Classification of the stakeholders is of prime importance and they could be classified as -**
    - ***Influence,***
    - ***Geographic location***
    - ***Number and Direct End User***
    - ***Number of interfacing system and automated processes.***
  - **Authority Level in Business Analysis Work**

✓ **Approve the Deliverables**
✓ **Inspect and approve the Deliverable**
✓ **Request and Approve Changes**
✓ **Approve the Requirement Process**
✓ **Reviews and Approves the Traceability Structure**

Plan Business Analysis Activities

Tasks	Purpose	Inputs	Outputs
Plan Business Analysis Activities	Determines which activities are required to define the solution to a business problem, how those activities will be carried out, the work effort involved, and an estimate of how long the activities will take. • Identifies business analysis deliverables • Determines the scope of work for the business analysis activities • Determine tasks for the business analysis activities in the Knowledge Areas: Enterprise Analysis, Elicitation, Requirements Analysis, Solution Assessment and Validation. Detail will vary from KA to KA. • Identifies task dependencies, and interfaces between tasks • Develop estimates for BA work (time, skill level, complexity of tasks, etc.)	• Stakeholder list • Stakeholder roles and responsibility designation • Organizational Standards	Business Analysis Plans for: • Enterprise Analysis • Business Analysis Planning and Monitoring • Elicitation • Requirements Analysis • Solution Assessment and Validation • Requirements Management and Communication

Plan Business Analysis Activities

- **It's basically planning of the various activities :-**
  - **Requirement Management and Communication**
  - **Enterprise Analysis**
  - **Elicitation**
  - **Requirement Analysis**
  - **Solution Validation and Assessment**
- **The role of the BA starts from**
  - ***Business Analysis Scope Statement* :- Which will list all the deliverables**
  - ***To set up the Work Break down structure – i.e. Releases , Phases* – The break down of the activities will be part of the Activity List , which shall be defined in the Project Management**
  - ***The Business Requirements ,* will be written on the basis of the Project style – i.e. Waterfall , Agile , Iterative**

Plan Business Analysis Activities

- **The project would have the following list of activities from the BA perspective .**

- **Different Projects will have different deliverables and the tasks might include some combination of the following:-**

  - ✓ ***Feasibility study***
  - ✓ ***Process Improvement***
  - ✓ ***Organizational Change***
  - ✓ ***New Software Development- in house***
  - ✓ ***Outsource the Development***
  - ✓ ***Software Maintenance***
  - ✓ ***Software Package Selection***

- **The Sequence of activities will be as follows-**

  - **Milestones will cluster into the set of deliverables.**
  - **Deliverable be assigned under Releases**
  - **Releases classified under Phases**

Plan Business Analysis Activities

- **These are some of the Estimating Tools, which are commonly used :-**

Analogous estimating	**Which is actually done , when little is known , but the new project is said to be on the same lines of the Frame work for the Business Analysis activities and the Time Frame**
Parametric Estimating	**Done on the basis of the activity task and time needed to complete one task (use case – 5 hours , BA has a activity set that has 10 task , so the total time needed will be 20 hours**
Rolling wave	**Looking at the present shape and new of new tasks till needed to be done to achieve the desired results**
Three Point Estimate	**Looking at the Optimistic , Pessimist and most likely estimate**
Historical Analysis	**It's actually the way for estimation , based on the past story**
Expert Judgment	**Opinions of the Experts**
Delphi	**It is a combination of the Historical values along with the weight assigned across each value**
Vendor Bid Analysis	**After the submission of bids , the BA needs to ascertain the bids on the basis of reasonableness , schedule and cost estimates**

Plan Business Analysis Communication

Tasks	Purpose	Inputs	Outputs
Plan Business Analysis Communication	Determine what information the various stakeholders need to be provided about the results of business analysis and the forms it should take (verbal, written, etc). It includes considerations for, as well as constraints, impacts, durability and trade-offs of different communications media.	• Stakeholder list • Stakeholder roles and responsibility designation • Business Analysis Plan(s)	Business Analysis Communication Plan

- **Effective Communication is one of key factors for success.**
- **The BA needs to plan about the effective Communication**
  - ***Who needs to be communicated and how –***
  - ***Needs top aware about the Location of the Stake Holder***
  - ***Channels for communications with other members***
  - ***Do , different people , required different formats of documentation***
- **A formal level of communication is followed in the Large projects , complex , new , mission critical project**

Plan Business Analysis Communication

- **It is also important that the Requirements are submitted along with diagrams, supporting text , detailed attributes and various updates to various stakeholders, so that they could easily comprehend and understand.**

Plan Requirements Management Process

Tasks	Purpose	Inputs	Outputs
Plan Requirements Management Process	Describes how to determine the appropriate requirements process for a particular initiative. It describes how we determine what is currently in place, and how to create the process if it doesn't exist. It includes determining whether and how requirements are changed, which stakeholders need to approve (instead of the actual approval of requirements), as well as who will be consulted on, or informed of changes, etc. It also includes the approach to requirements traceability and determining which requirements attributes we will capture.	• Organizational Standard • Business Analysis Plan(s)	Requirements Management Plan

- **The Business Analyst needs to work on the following set of activities**
  - **Determine the Appropriate Business Requirement Process for the current Project**
  - **Determine whether and how the Requirements are changed , who needs to be consulted for the same , which all stakeholders need to be informed and who takes the final call. (Approval)**

Plan Requirements Management Process

- **Assign priorities to the requirements .**
- **Check for the interfaces , dependencies related with each requirement and also monitor that low priority requirements are not tested , many more times**
- **Traceability is added to the requirement, which would justify what new value the requirement would bring to the project.**
    - ***Record mapping of every requirement along the lineage and also where would it fit going further***
    - **This will also help in linking a set of requirements , along with many other requirements**
    - ***Example – Cancel of Payments***
        - **the customer user should be able to complete or cancel the in-flight payments , before closing the account**

Plan, Monitor and Report on Business Analysis Performance

Tasks	Purpose	Inputs	Outputs
Plan, monitor and Report on Business Analysis Performance	Determine which metrics will be used to measure the work performed by the business analysts. It includes how we track, assess, and report on the quality of the work performed by business analysts and take steps to correct any problems that may crop up. If problems are identified, determine appropriate corrective action (which may feed into the development of future plans on this or other projects).	• Organizational Performance Standards • Actual Performance Metrics • Business Analysis Plan(s) • Requirements Management Plan	• BA Performance Assessment • Lessons Learned • Process improvement recommendations

- **Monitor the Health of the Project**
- **It is basically to check , track and access and report on the quality of the work performed.**
- **This can be reported to the higher management via adhoc reports**

Plan , Monitor and Report on Business Analysis Performance

- This would be done by setting up the Product and Project Metrics.
- The three key tasks for the setting up of these Metrics are Identification , Collection and Reporting
- The suggested sequence is, as follows
  - Determine the relevant metrics e.g. requirements
  - Determine, How the metrics were Collected, Analyzed Documented and Communicated
- Determine the Metrics :-
  - Whether the Requirements are in line with the deliverable
  - List of assumptions made
  - Some Requirements might have been inherent to the project , while other might have come in conjunction at specific points of the Project
    - Ex- The fixation of the defects by the Development team

Plan , Monitor and Report on Business Analysis Performance

- **Collection of the Metrics :-**
  - *Appropriate Volume of Data*
  - *Appropriate use of Automation*
  - *Timeliness of Collection , Analysis and Reporting*
- **Report on Business Analysis Progress.**
- **Take Preventive and Corrective action.**
- **Improvement Techniques**
  - *Expert Judgment*
  - *Stakeholder Analysis*
  - *Communication Requirement Analysis*
    - ✓ *Analyzing Stakeholder Communication Requirements*
    - ✓ *Preferred level of Details, format , media*
    - ✓ *Logistics of communication to and from Multiple Location*
    - ✓ *Internal Communication Flow*
    - ✓ *External Communication Flow*
    - ✓ *Media*

Plan , Monitor and Report on Business Analysis Performance

- **Improvement Techniques**
  - ***Variance Analysis***
    - ✓ ***Analyze the discrepancies between the planned and actual estimates, cost ,product expectations***
  - ***Re-planning***
    - ✓ ***Change Requests will have a profound effect on the requirement baseline, hence shall lead to Re-planning***
  - ***Change Control System***
    - ✓ ***The process of changing the Baseline***
    - ✓ ***Authorization Levels for approval***
    - ✓ ***Tracking Process to Recognize Changes***
  - ***Lessons Learned***
    - ✓ ***Most projects are in design-mode long before they have established what the problem that they are trying to solve has been defined. Too often we see project teams discussing how the screen is going to look and what push buttons are going to do before anyone knows what business problem we are trying to fix.***

Plan , Monitor and Report on Business Analysis Performance

- ✓ ***An inability to control the "nice to have" requirements. Standish Group has revealed that 45% of the features of systems are never used; these then can only be "nice to haves" that nobody actually needed.***

- ✓ ***A lack of standards. Often there is a requirements template but what gets put into that template can vary from project to project, with little or no quality control***

Requirement Management & Communication

Chapter 3

Requirement Management and Communication

FOCUS AREA

- Way to manage conflicts,
- Issues, Changes and Ensure that stakeholders as well as the project team remain in agreement on the solution scope.
- Depending on the complexity and methodology of the project:-
  - ✓ Managing Formal approvals
  - ✓ Baseline and track different versions of Requirements documents
  - ✓ Trace requirements from origination to implementation.

PURPOSE

- ✓ Recognize that communication takes places throughout all knowledge areas and is important for managing requirements
- ✓ Manage the approved solution and requirements scope
- ✓ Ensure stakeholders have access to business analysis work products
- ✓ Prepare and communicate requirements to stakeholders
- ✓ Facilitate enterprise consistency and efficiency by re-using requirements whenever possible

Requirement Management and Communication - OF-1

Tasks	Purpose	Inputs	Outputs
Manage Solution and Requirements Scope	Baseline and manage changes to business case, solution and requirements • Approve requirements (according to the approval authority stated in the Requirements Management Plan) • Baseline requirements • Manage formal and informal change control on requirements • Control multiple versions of requirements work products • Manage requirements conflicts and issues	• Stakeholder roles and responsibility designation • Requirements • Requirements management plan	• Approved Requirements • Decision Record
Manage Requirements Traceability	• Trace requirements (update and maintaining relationships between requirements components) • Perform impact analysis when changes are requested and supply this information to the change control process (in previous task) • Support the allocation of requirements to the solution in Solution Assessment and Validation.	• Requirements	• Traced Requirements

Requirement Management and Communication OF-2

Tasks	Purpose	Inputs	Outputs
Maintain Requirements for re-use	• Select which implemented requirements will be maintained after solution implementation • Name the responsible party who will maintain the requirements (i.e. custodian, librarian) • Facilitate ongoing use of requirements for impact analysis and solution maintenance • Facilitate re-use of requirements on related projects to encourage enterprise consistency of business models	• Implemented requirements	• Maintained/re-used requirements
Prepare Requirements Package	• Determine appropriate format for requirements (v1.6 task) • Create a requirements package (V1.6 task)	• Requirements • Business analysis communications plan	• Requirements package (e.g., executive summary, formal documentation, RFI, RFP, etc.)
Communicate requirements	• Interaction with all stakeholders before, during and after projects. • Each KA involves communication that will be noted here • Interaction with solution team to assure that requirements are correctly understood and implemented	• Requirements package • Business analysis communications plan	• Communicated requirements

Manage Solution and Requirement Scope

Tasks	Purpose	Inputs	Outputs
Manage Solution and Requirements Scope	Baseline and manage changes to business case, solution and requirements • Approve requirements (according to the approval authority stated in the Requirements Management Plan) • Baseline requirements • Manage formal and informal change control on requirements • Control multiple versions of requirements work products • Manage requirements conflicts and issues	• Stakeholder roles and responsibility designation • Requirements • Requirements management plan	• Approved Requirements • Decision Record

- **Once the requirements are elicited and analyzed, they need to be checked, whether they are within the boundaries of the defined framework.**
- **These requirements are then base lined with due approval of the stakeholder and the change in these requirements shall be classified under change request.**
- **Managing these requirements into a file /repositories i.e. paper/electronic is really important, because the BA might have to change/add/delete them going further and hence keeping a track of them is essential.**
- **There could also be a scenario, wherein the requirements sign-off has been declined by the stakeholder ,then the BA needs to inform the PM and this could lead to a considerable delay.**

Manage Requirements Traceability

Tasks	Purpose	Inputs	Outputs
Manage Requirements Traceability	• Trace requirements (update and maintaining relationships between requirements components) • Perform impact analysis when changes are requested and supply this information to the change control process (in previous task) • Support the allocation of requirements to the solution in Solution Assessment and Validation.	• Requirements	• Traced Requirements

- **Trace-ability within the requirements is really important:-**
  - **During Change Request – Need to ascertain the Overall Impact.**
  - **Double Checking, whether all the requirements pertaining to the required functionalities , have been incorporated.**
  - **Allocation of the Requirements to various components in the Final Solution.**
  - **Advantages :-**
    - **Re-usability of Requirements**

Requirement Management and Communication OF-2

Tasks	Purpose	Inputs	Outputs
Maintain Requirements for re-use	• Select which implemented requirements will be maintained after solution implementation • Name the responsible party who will maintain the requirements (i.e. custodian, librarian) • Facilitate ongoing use of requirements for impact analysis and solution maintenance • Facilitate re-use of requirements on related projects to encourage enterprise consistency of business models	• Implemented requirements	• Maintained/re-used requirements
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Communicate requirements	• Interaction with all stakeholders before, during and after projects. • Each KA involves communication that will be noted here • Interaction with solution team to assure that requirements are correctly understood and implemented	• Requirements package • Business analysis communications plan	• Communicated requirements

Enterprise Analysis

Chapter 4

Enterprise Analysis

FOCUS AREA

- Describes the Business Need
- Refines and Clarifies the definition of that need
- Define a solution scope, feasibly implemented by the business.
- Covers problem definition and analysis

PURPOSE

- Identify and propose projects that meet strategic needs and goals.

Enterprise Analysis – Overview Functions -1

Tasks	Purpose	Inputs	Outputs
Identify Business Need	• Evaluate the internal and external environment ◇ Internal: → Define/refine current/future business architecture → Assess the current state of technology (infrastructure and applications) ◇ External: → Benchmark analysis → Competitive studies • Fully define business problem/opportunity	• Business Architecture • Business Goal(s)	Defined Business Problem/Opportunity
Determine Solution Approach	• Identify potential solutions • Analyze feasibility of options • Recommend viable business solution • Validate with decision makers	• Business Architecture • Defined Business Problem/Opportunity	Solution Approach

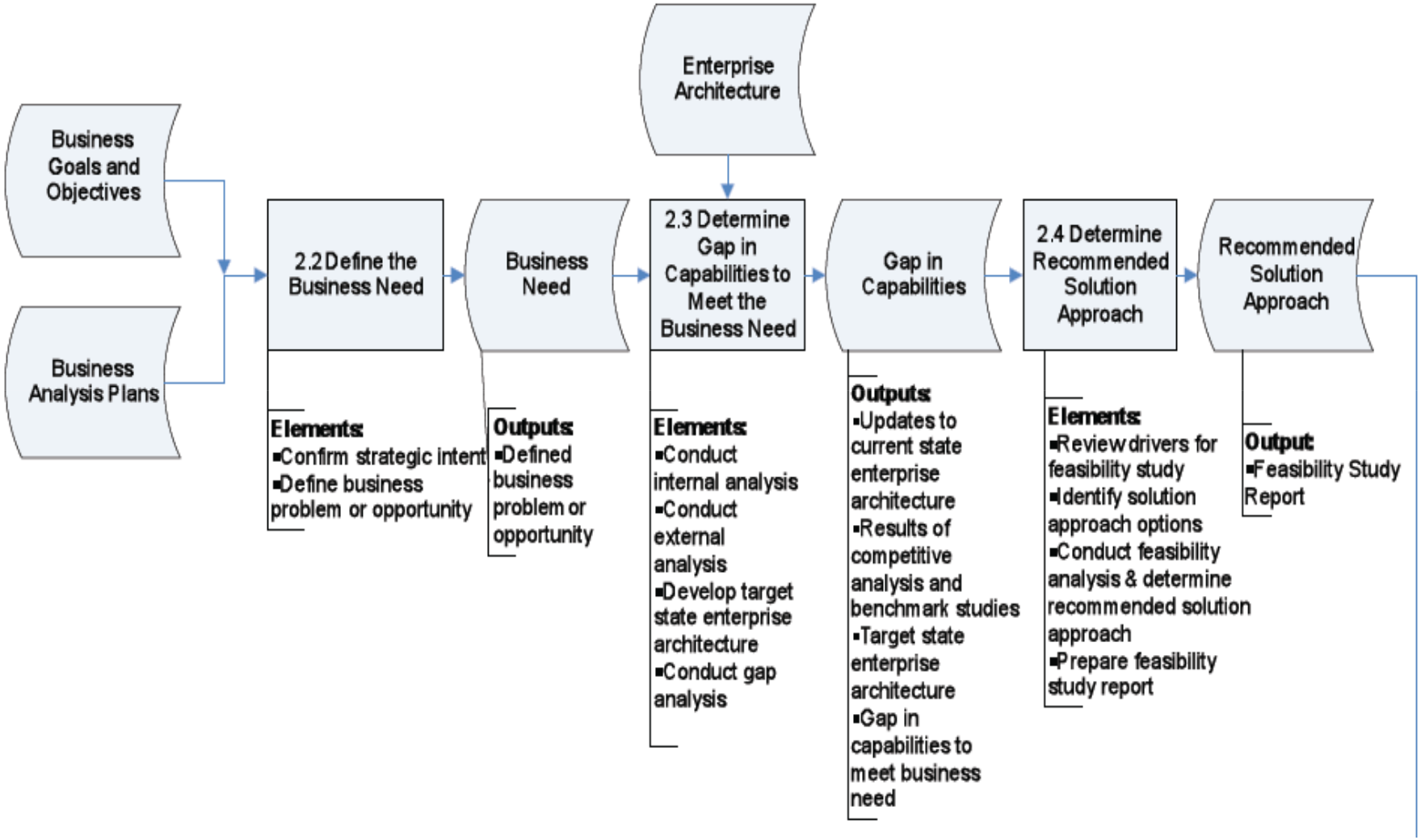
Enterprise Analysis – Overview Functions -2

Tasks	Purpose	Inputs	Outputs
Determine Solution Approach	• Identify potential solutions • Analyze feasibility of options • Recommend viable business solution • Validate with decision makers	• Business Architecture • Defined Business Problem/Opportunity	Solution Approach
Define Solution Scope	• Context diagram • Product Breakdown Structure	• Business Architecture • Defined Business Problem/Opportunity • Solution Approach	Solution Scope
Develop the Business Case	• Define project objectives and expected business benefits • Develop project scope • Estimate time, cost, resources • Analyze cost vs. benefit • Evaluate risk	• Business Architecture • Business Goal(s) • Defined Business Problem/Opportunity • Solution Scope	Business Case

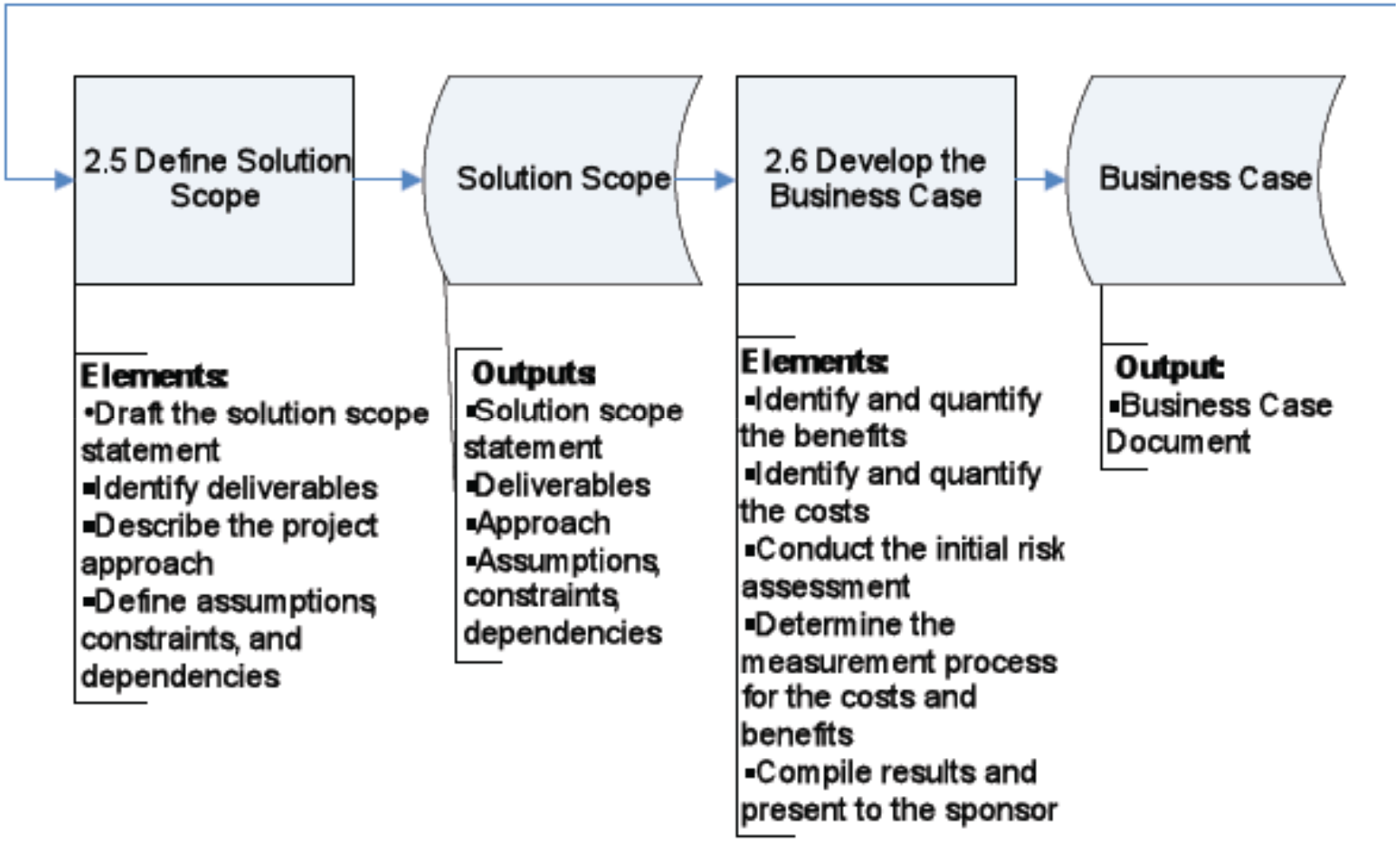
Identify Business Need & Determine Solution Approach

- BA needs to have a detail understanding of the strategic goals of the organization.
  - So that new initiatives (Project) – Business problems are sorted out by providing the solution, which are in line with the Organization goals and Business strategy
  - Determine the most feasible business solution, provide the solution scope, Build / Manage the Business Case and other relevant information regarding new project opportunities.
  - Also define the business need , opportunity cost loss , gain in market share , cost of the project , benefits , Risk Assessment

Enterprise Analysis Knowledge Area Part 1



Enterprise Analysis Knowledge Area Part 2 Cont..



Define the Business Need

- Confirm the Strategic intent
  - ✓ To ensure that Enterprises Analysis activities and recommend solution is strategically aligned to overall required perspective.
- Define Business Problem
  - ✓ Document the Problem in detail
  - ✓ Adverse effects of the problems and it impacts
  - ✓ Determine how fast the problem could be resolved
  - ✓ The Cost of doing Nothing

TECHNIQUES

- The various Techniques employed by the BA's to define the business needs are
  - ✓ Goal Analysis
  - ✓ Opportunity Analysis
  - ✓ Problem Analysis

Determine Gap in Capabilities to Meet the Business Need

- To understand the amount of change required to achieve the business goals and objectives. These changes will be in any of the components of the enterprise
  - ✓ Business Process
  - ✓ Functions
  - ✓ Lines of Business
  - ✓ Organization structures
  - ✓ Staff Competencies
  - ✓ Knowledge and skill sets
  - ✓ Technological Infrastructure

TECHNIQUES

- The various Techniques employed by the BA's to define the business needs are
  - ✓ Internal Analysis
  - ✓ External Analysis
  - ✓ Develop Target State Enterprise Architecture
  - ✓ Gap Analysis

Enterprise Analysis – Overview Functions -2

Tasks	Purpose	Inputs	Outputs
Determine Solution Approach	• Identify potential solutions • Analyze feasibility of options • Recommend viable business solution • Validate with decision makers	• Business Architecture • Defined Business Problem/Opportunity	Solution Approach
Define Solution Scope	• Context diagram • Product Breakdown Structure	• Business Architecture • Defined Business Problem/Opportunity • Solution Approach	Solution Scope
Develop the Business Case	• Define project objectives and expected business benefits • Develop project scope • Estimate time, cost, resources • Analyze cost vs. benefit • Evaluate risk	• Business Architecture • Business Goal(s) • Defined Business Problem/Opportunity • Solution Scope	Business Case

Determine Recommended Solution Approach

- To Determine and define the most viable solution approach to met the business need.
- Feasibility Study is a preliminary analysis of the solution alternatives or options to determine the most viable option.
- The various set of activities are :-
  - ✓ Review and Validate, the business drivers for the feasibility analysis
  - ✓ Identify all the potential solution approaches
  - ✓ Conduct feasibility analysis on all the approaches
  - ✓ Prepare Feasibility study report

Define Solution Scope

- To Develop the high level scoping information that is required to build the business case for the proposed initiative.
- The various set of activities are :-
  - ✓ Draft the Solution Scope Statement
  - ✓ Identify Deliverables
  - ✓ Describe Project Approach
  - ✓ Define assumptions , constraints and Dependencies

TECHNIQUES

- The various Techniques employed by the BA's to define the Solution Scope are
  - ✓ Decomposition
  - ✓ Scope Models

Develop Business Case

- It define the justification for the project in terms of the value to be added to the business as a result of deployed solution.

- The business case will include the following information.
  - ✓ Opportunity in Terms of market trend
  - ✓ Qualitative and Quantitative benefits
  - ✓ Estimate on Cost and Time to Achieve Break Even
  - ✓ Profit Expectations
  - ✓ Follow-on Opportunities

- The various set of activities required to Develop the Business Case are :-
  - ✓ Identify and Quantify the Benefits
  - ✓ Identify and Quantify Cost
  - ✓ Conduct the Initial Risk Assessment
  - ✓ Determine the Measurement Process for the Cost & Benefits
  - ✓ Compile Results and Present to the Project Sponsor

Techniques

- **Internal Analysis :-**
  - *Ascertain the Business Drivers , which have contributed to the need of change*
  - *Gather Information of the Current State of Architecture*
  - *Scope of the Enterprise under Analysis*
  - *Models are used to depict the whole diagram*
- **External Analysis :-**
  - *External Research activities to uncover general information about the area of enterprise under review such as*
    - *Industry*
    - *The Competitive Environment*
    - *Best Practices*
- **Target State Enterprise Architecture :-**
  - *Develop Model of the Future Architecture*
  - *Determine the Gap in Capabilities needed to achieve the business objectives*
  - *Validate and refine the objectives*
  - *Document the Target state Business Vision , Strategy , Goal and Objective*

Techniques

- **Decomposition :-**
  - *Develop a high-level Work Breakdown Structure*
  - *Creating a high-level work breakdown structure (WBS) involves decomposing the work that must be performed into lower-level deliverables.*
  - *The WBS is used to further define the project scope, and for cost and schedule estimating. In this early pre-project analysis,*
  - *the WBS should be decomposed only to levels 2 or 3.*

  - *2) the scope of the effort*
  - *Plan the activities*
  - *• Create or update the documents and drawings*
  - *• Conduct a quality review of the Business Architecture components.*

3 Develop Cost and Time Estimates

- *Develop initial cost and resource requirement estimates, including costs to procure, develop, integrate, test, deploy and operate the new business solution. In addition, develop the initial milestone schedule.*

Techniques

- **Technique – Goal Analysis :-**
  - *It is a method of identifying the changes needed to the enterprise in order to achieve a strategic goal – It is actually comparing the current – and the target architecture*
  - *The overall strategic goals are broken down into SMART objective … Specific, Measurable, Achievable, Relevant, Timely*
    - *Specific :- Describing something that has an observable outcome*
    - *Measurable :- Tracking and measuring the Outcome*
    - *Achievable :- testing the feasibility of the approach*
    - *Relevant :- in sync with the key goals*
    - *Timely :- time frame that is linked with business need*

- **Technique – Feasibility Analysis :-**
  - *The main purpose of the study is to ascertain the likelihood of each potential solution alternative's probability of satisfying the business need in terms of economic, operational and technical feasibility.*

    - *Example : - is RFI/RFP which are solicited by company to various vendors , where-in they would have to complete the capability matrix of their individual product fitting into the need of the customer*
    - *COTS – commercial of the shelf product always needs to be modified inorder to meet the requirements of the customer and that also requires an extra effort*

Techniques

- **Gap Analysis :-**
  - *It is a method of identifying the changes needed to the enterprise in order to achieve a strategic goal – It is actually comparing the current – and the target architecture*
- **Opportunity Analysis :-**
  - *Examination of the Business activity in depth to analysis the overall increase in business going Forward*
- **Problem Analysis :-**
  - *It is driving deep into the problem , gathering a lot of information , identifying the pain areas , Determine the root causes*
- **SWOT Analysis :-**
  - *Strengths , Weakness , Opportunities , Threats*
- **Estimation Techniques :-**
  - *It is a methodology designed to forecast the cost of a proposed new business solutions*
    - *Top down Estimates*
    - *Bottom –up Estimates*
    - *Function Point Analysis*
    - *Work distribution Estimates*
    - *Comparision Estimates*

Techniques

- **Economic Models and Benefit Analysis :-**
  - *These are defined to determine the economic feasibility of the proposed new project*
  - *It translates into the justification of the business solutions including the ROI, Cost of Ownership Analysis*
  - *The various Techniques include are*
    - *Discounted Cash Flow*
    - *Net Present Value*
    - *Internal Rate Of Return*
    - *Average Rate of Return*
    - *Pay Back Period*
    - *Cost Benefits Analysis*
- **Decision Analysis :-**
  - *It is an approach to decision making under the uncertain conditions that examines and models each alternative decision path*
  - *The Technique is logical , when there are only a few alternative to test.*
    - *Prepare a graphical representation of all the decision paths*
    - *Forecast the probability of success , cost and rewards*
    - *Using Economic Forecasting , determine the expected monetary value of each alternative*
    - *Disadvantage : is difficult and requires specialized skills*

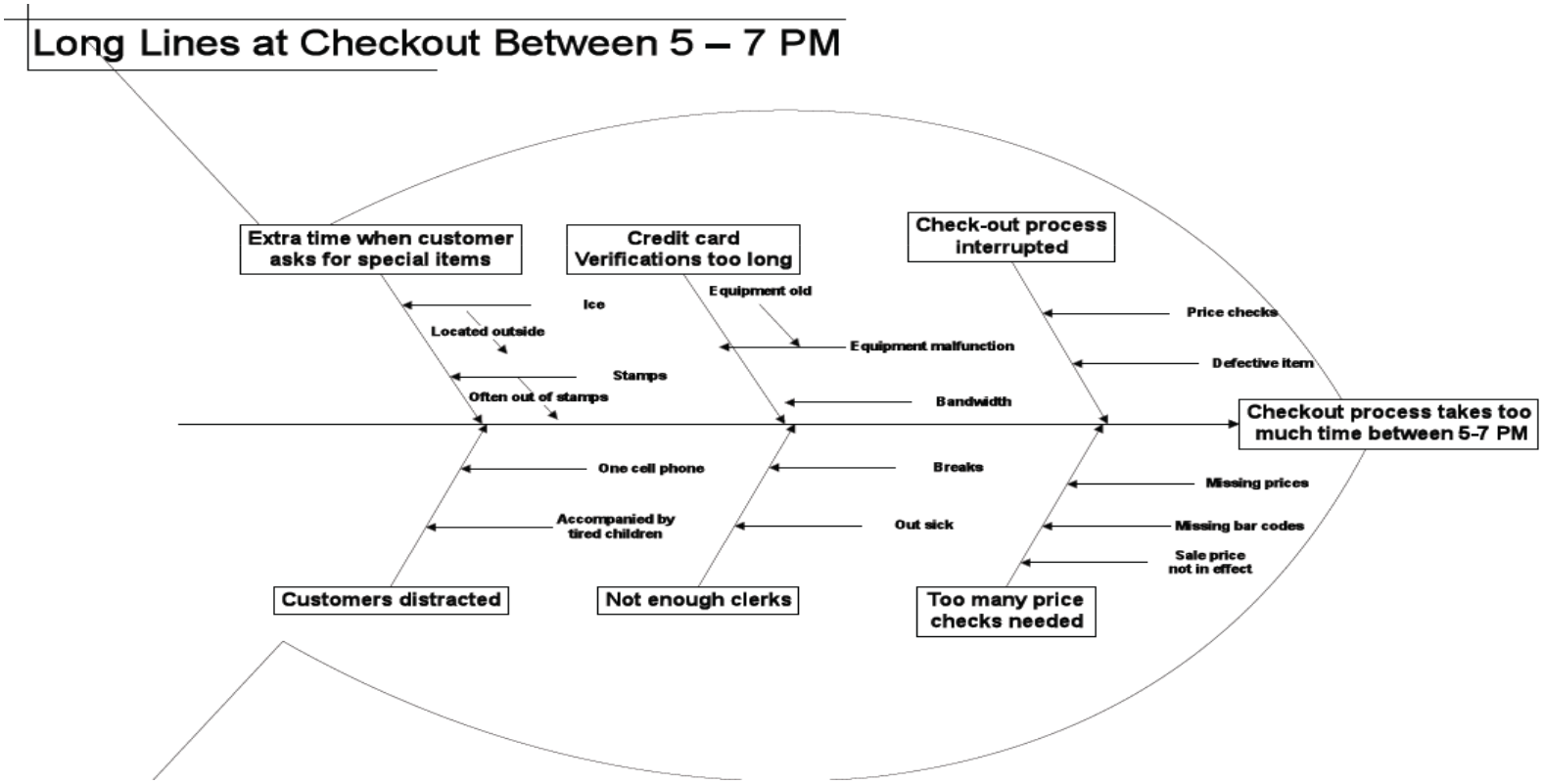
Techniques

- Benchmark analysis :-
  - ***Used to determine, how companies achieve their superior performance levels***
  - ***Bench mark analysis is basically you try to get a view of the market (external), which gives you a fair idea of what's happening in the external environment***
- Scope Analysis :-
  - ***Defines the forecast of work that must be performed to deliver the new business solution***

Scope Dimension	Potential Scope Models
Who	Stakeholder List; Stakeholder Categories, Organisational diagrams
What	Context Diagram, Glossary, Relationship Map, work breakdown structure, product breakdown structure
When	Event-Response Table, Transition State diagrams
Why	Business Policies, Business Rules matrix, Market trends and patterns
How	Process Maps, Use Case Diagrams, Process Architecture

The Fishbone Diagram- Problem Analysis tool

- It is a structure Process to identify the problem , gather a lot of information , identify charts and root causes, generate recommendations and develop and corrective plan
- Actually it is a cause and effect diagram to identify and organize the possible causes of the problem



Elicitation

Chapter 5

Elicitation

FOCUS AREA

- Ways to work with stakeholders to find out what their needs are
- Ensure that their needs have been correctly and completely understood needs.

PURPOSE

- Explore, identify and document stakeholder needs.

Elicitation

Overview Functions -1

Tasks	Purpose	Inputs	Outputs
Prepare for Elicitation	Prepare for elicitation by ensuring all needed resources are organized and scheduled for conducting the elicitation activities.	• Stakeholder list • Stakeholder roles and responsibility designation • Either (Defined Business Problem/ Opportunity) or (Business Case and Solution Scope) • Elicitation plan	• Scheduled resources • Supporting materials
Conduct Elicitation	Meet with stakeholder(s) to elicit information regarding their needs	• Supporting materials • Either (Defined Business Problem/ Opportunity) or (Business Case and Solution Scope) • Organizational standards	• Elicitation activity results • Assumptions, constraints, risks, issues • Documentation based on technique (e.g., interview notes, workshop results, survey responses, etc.)

Elicitation Techniques

Elicitation Technique	Synonym(s)
Brainstorming	
Document Analysis	Review existing documentation
Focus Group	
Interface Identification	External Interface Analysis
Interview	
Observation	Job Shadowing
Prototyping	Storyboarding, Navigation Flow
Requirements Workshop	Elicitation Workshop Facilitated Workshop Joint Application Design (JAD)
Reverse Engineering	
Survey	Questionnaire

Elicitation Techniques

Brainstorming	✓ *1939 – Alex Osborn – used this terminology to define – using the brain to storm the problem* ✓ *It is a diversion type of thinking* ✓ *Focus on out of box thinking* ✓ *Generation of New Ideas*
Document Analysis	✓ *Facilitated via the reading the documentation of existing system (as if) – understanding the rules, entities and attributes* ✓ *Getting a cross verification with the SME on various issues and to get a clear understanding of the existing systems*
Focus Group	✓ *It is actually interaction of a set of people, to know their perception about the system*
Interface Identification	✓ *No of interfaces – for the input of data , output of data , connections* ✓ *Teams who are involved in the interface settings – since it would help in setting up of the boundaries of the interfacing system , the total cost , the expected delivery date*
Interview	✓ *Interviewing The Stakeholder, End User, SME, Members Of The Solution Team To Get A The Requirement In Place* ✓ *The Success Of This Would Depend On The Following Factors* *Length Of Interview* *Skills Set Used In The Interview* *Knowledge Of The People , Who Are Being Interviewed* *Identification Of The Best People , With The Required Interview Skill Set* ✓ *Questions could be open ended , closed end questions , applying a logical flow of the interview*

Elicitation Techniques

Observation	✓ ***It is actually called as job shadowing – following the people on their job,*** ✓ ***There are two different approaches for it: - to do so – Visible and an Invisible approach*** ✓ ***May suggest the person being observed to '' think aloud'', so that notes, intentions could be said forth*** ✓ ***After taking the notes, it could be followed with interview session asking question to person and finding rational reasoning behind their actions***
Prototyping	✓ ***This actually aims to discover and visualize High level interface requirements use cases, scenario, data and business rules*** ✓ ***Horizontal and vertical type, both of them are shallow, although a vertical has a little depth, but give the overview of the system*** ✓ ***The final product could be derive via the help of story boards***
Requirements Workshop	✓ ***A single session, which would bring all the SME, stakeholders under the same roof and to able to take out the requirements***
Reverse Engineering	✓ **It is actually decomposition of the system** ***Black Box Theory: functionality – domain – without understanding the inside structure*** ***White box: - understanding the code – the internal structure***
Survey /Questionnaire	✓ **A written set of questionnaire**

Elicitation

Overview Functions -1

Tasks	Purpose	Inputs	Outputs
Prepare for Elicitation	Prepare for elicitation by ensuring all needed resources are organized and scheduled for conducting the elicitation activities.	• Stakeholder list • Stakeholder roles and responsibility designation • Either (Defined Business Problem/ Opportunity) or (Business Case and Solution Scope) • Elicitation plan	• Scheduled resources • Supporting materials
Conduct Elicitation	Meet with stakeholder(s) to elicit information regarding their needs	• Supporting materials • Either (Defined Business Problem/ Opportunity) or (Business Case and Solution Scope) • Organizational standards	• Elicitation activity results • Assumptions, constraints, risks, issues • Documentation based on technique (e.g., interview notes, workshop results, survey responses, etc.)

Elicitation

Overview Functions -2

Tasks	Purpose	Inputs	Outputs
Document Elicitation Results	Record the information provided by stakeholders for use in analysis.	• Elicitation activity results	• Stated requirements
Confirm Elicitation Results	Validate that the stakeholder's intentions have been correctly captured and understood.	• Stated requirements	• Validated stated requirements

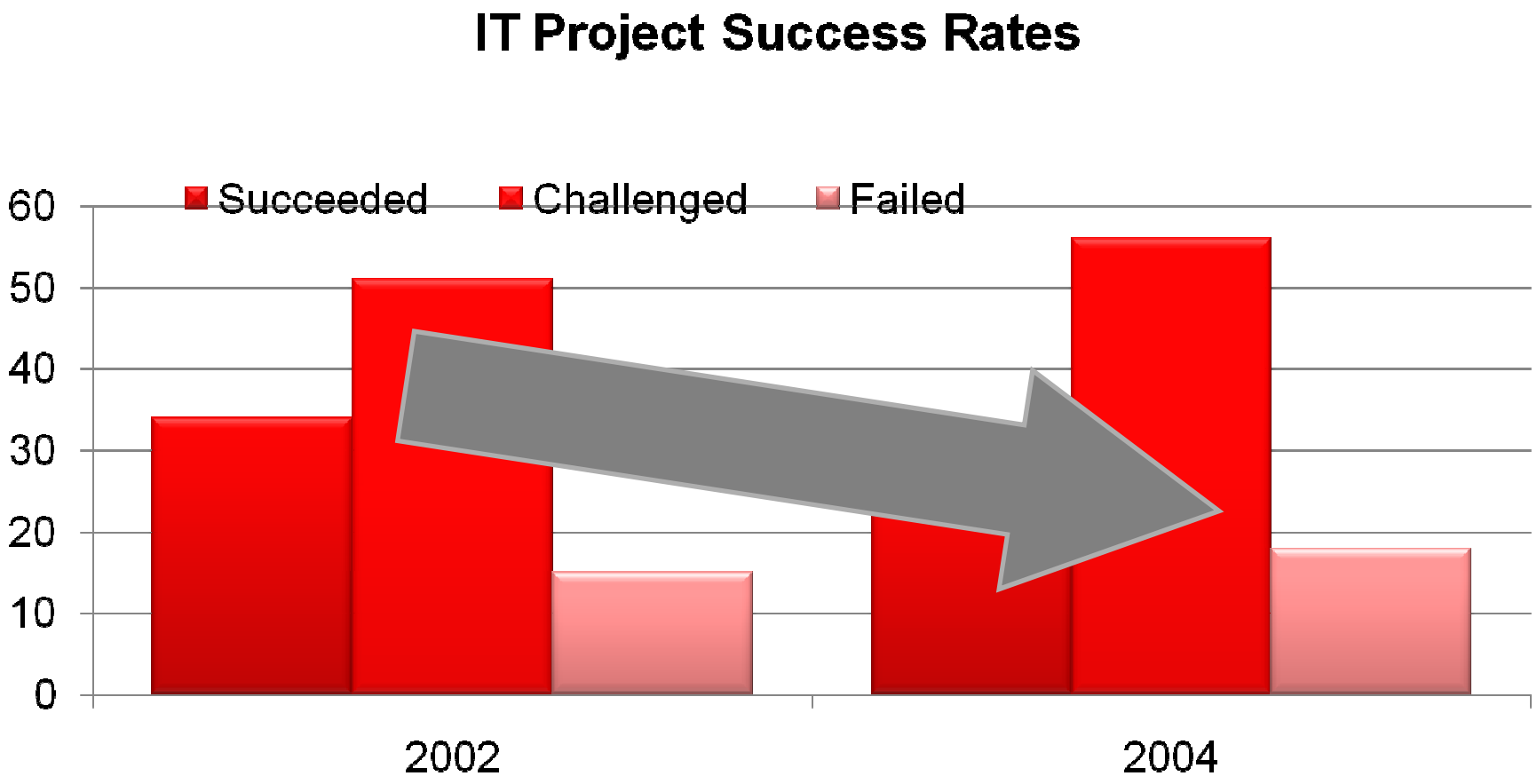
Requirements Analysis

Chapter 6

Why Requirements Matter

Reason for Failed Projects is Poor, Missed or Changing Requirements.

Source: *2004 CHAOS Report, Standish Group*



Problems of Requirements Analysis

- Stakeholders don't know what they really want.
- Stakeholders express requirements in their own terms.
- Different stakeholders may have conflicting requirements.
- Organisational and political factors may influence the system requirements.
- The requirements change during the analysis process. New stakeholders may emerge and the business environment change.

Requirements Definition

Two areas of focus

- **Requirements definition**
  - ✓ A REQUIREMENT may range from a high-level abstract statement of a service or of a system / to a detailed functional specification.
- **Requirements management**
  - ✓ The quality of the requirements vary substantially based on knowledge of stakeholders
  - ✓ Challenges with requirement definition are magnified by off shoring of technical work at various locations were knowledge might be restricted

Requirements Analysis

FOCUS AREA

- A way to progressively elaborate the solution definition
- Enable the project team to design and build a solution , meeting needs of the business and stakeholders.
- To analyze the stated requirements of our stakeholders to ensure that they are correct,
- Assess the current state of the business to identify and recommend improvements, and ultimately verify and validate the results.

PURPOSE

- Progressively elaborate stated requirements to sufficient level of detail that accurately defines the business need within specified scope
- Validate requirements meet the business need
- Verify requirements are acceptable quality Explore, identify and document stakeholder needs.

Requirements Analysis

Tasks	Purpose	Inputs	Outputs
Organize Requirements	Structure and organize a set of requirements into logical sets. The organization may be based on defining multiple "levels" of requirements, packaging related functions together, and so forth.	• Business Case • Solution Scope • Requirements	Structured requirements
Prioritize Requirements	Determine the business priority of requirements (including voting, ranking, benefit analysis and so forth). Identify logical dependencies between requirements and requirements packages.	• Requirements • Business Case	Prioritized requirements
Specify and Model Requirements	Describes standard practices for writing textual requirements and creating models or diagrams. Specific models are addressed as techniques. Includes capturing the requirements attributes.	Requirements	Specified or modeled Requirements

Requirements Analysis

Tasks	Purpose	Inputs	Outputs
Determine Assumptions and Constraints	As we analyze stakeholder requests we will find that some of their desires are not properly requirements but are rather based on assumptions regarding what the solution team is capable of delivering. These should be captured and assessed but are not properly requirements .	Stakeholder Statements	Assumptions and Constraints
Verify Requirements	Determine that the requirements are correctly and completely defined.	Specified or modeled Requirements	Verified requirements
Validate Requirements	Validate that a requirement will satisfy a business need.	Verified requirements	Validated requirements

Organize Requirements

Tasks	Purpose	Inputs	Outputs
Organize Requirements	Structure and organize a set of requirements into logical sets. The organization may be based on defining multiple "levels" of requirements, packaging related functions together, and so forth.	• Business Case • Solution Scope • Requirements	Structured requirements

- **The two main objectives are as follows:**
  - ✓ **Create an Organized structure**
    - ✓ **Structure /Disciplined /Logical Approach**
      - ✓ ***It means to apply the Top-down modularity, which allow progressively elaborating the requirements into more detailed one***
      - ✓ ***All the Requirements are then classified to various modules***
  - ✓ **Identifies Requirements Interrelationships and Dependencies**
    - ✓ **Requirements are simple in Nature**
    - ✓ **It's the interdependencies and inter- relationships among requirements basically adds the elements of complexity. Hence organized requirements explicitly bring out the relations for the users**

Requirements Analysis – Organize Requirements

•Organizing Techniques :-

Hierarchical Decomposition

- ✓ Decomposition is a technique to structure the requirements into business functions or in some logical breakdown
- ✓ When the scope is known and the requirements are then they are classified , this procedure is called as Conceptual Modeling
- ✓ The ultimate goal of the Decomposition is to break down the high level business view into the smaller pieces to allow for the analysis of the detail functions , processes and physical solutions

Network

- ✓ This is known as a Bottom up Approach
- ✓ Taking one aspect or element of the problem under analysis , followed by a detailed understanding of the problem and then working out the relationship to other aspects, each one of them can be understood in detail on a step by step basis
- ✓ The best example of it can be defined as the use cases and scenarios

Other Techniques

- ✓ Business Rules , Data Models , Events and State Modeling, Goal Analysis Metrics and Reporting , Organizational Modeling , Personas and User Profiles, Process Modeling , Prototyping and Scenarios and Uses Cases

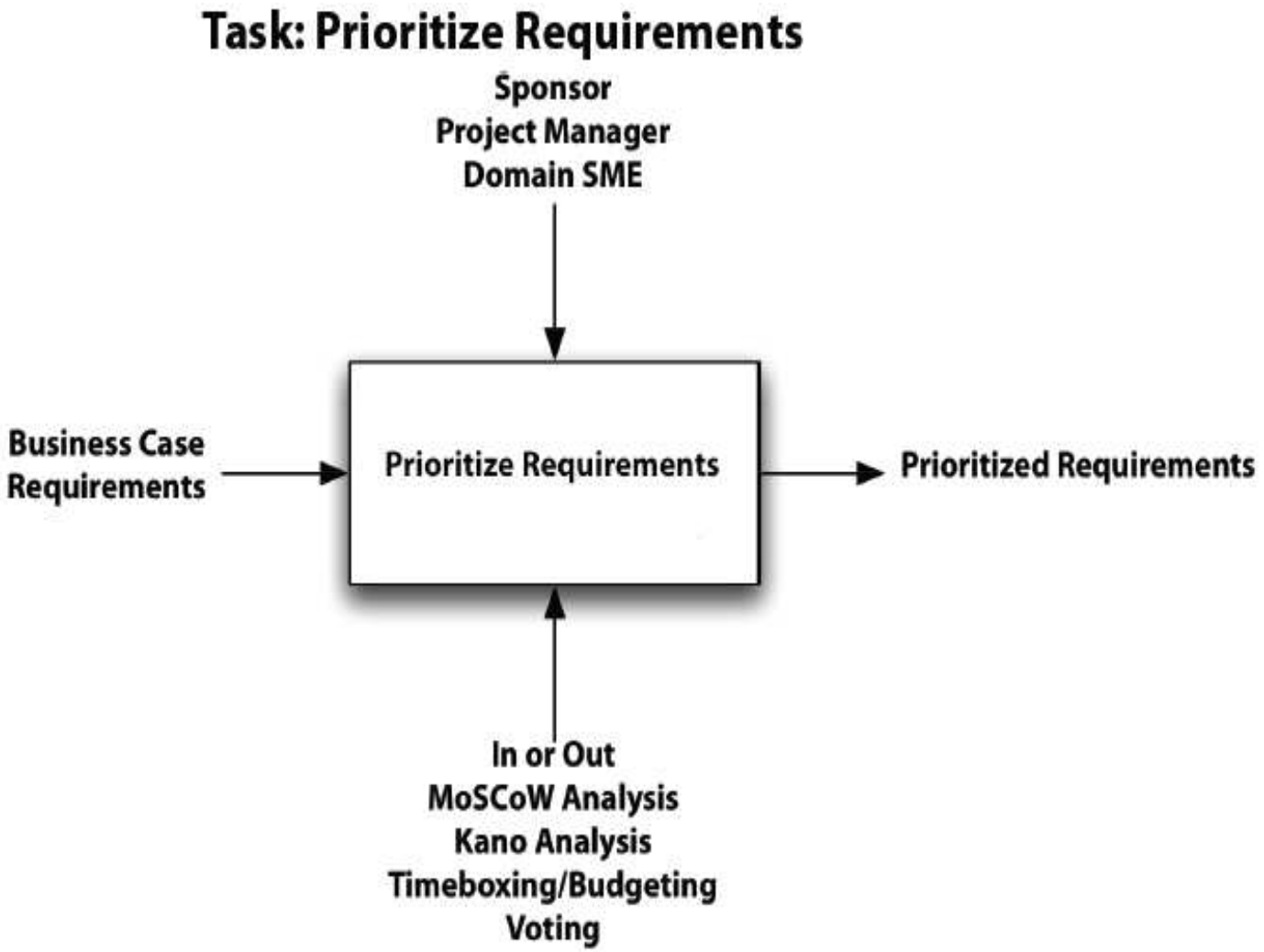
Prioritize Requirements

Tasks	Purpose	Inputs	Outputs
Prioritize Requirements	Determine the business priority of requirements (including voting, ranking, benefit analysis and so forth). Identify logical dependencies between requirements and requirements packages.	• Requirements • Business Case	Prioritized requirements

- **Requirement Prioritization is a decision process , where-in the important of the requirements based on the relative value, risk, difficulty of implementation , or other criteria's**

- **The requirements are prioritized on the basis of**
  - ✓ **Business Value**
  - ✓ **Business and Technical Risk**
  - ✓ **Implementation Difficulty**
  - ✓ **Like hood of success**
  - ✓ **Policy Compliance**
  - ✓ **Stakeholder Agreement**

Prioritize Requirements



Prioritize Requirements

- **Various Techniques for the prioritization of the Requirement are :-**
  - **MOSCOW Analysis**
    - ✓ ***Must , Should , Could , Won't***
  - **KANO Analysis**
    - ✓ ***Threshold :- Needed in the Product***
    - ✓ ***Performance :- Enhance the Product performance***
    - ✓ ***Excitement :- Add excitement Flavor in the product***
  - **Time-Boxing**
    - ✓ ***Prioritize the requirements based on the amount of work that the project team can delivering in a et of time allocated.***
  - **Budgeting**
    - ✓ ***This is done when the project team is given a fixed amount to work with.***
      - ✓ ***All In***
      - ✓ ***All Out***
      - ✓ ***Selective***
  - **Voting**
    - ✓ ***Each member votes for the requirements and the highest one (maximum votes – get developed***

Specify and Model Requirements

Tasks	Purpose	Inputs	Outputs
Specify and Model Requirements	Describes standard practices for writing textual requirements and creating models or diagrams. Specific models are addressed as techniques. Includes capturing the requirements attributes.	Requirements	Specified or modeled Requirements

- ***Requirements cannot be specified or modeled until it has been identified***
- ***The said requirements must be explicitly stated and should be very clear***
- ***They should be documented in simple textual sentences or paragraphs, along with tables and graphs to indicate the sequential logic and dependencies***

Guidelines for Writing Requirements

- *Express one and only one requirement at the time*
- *Avoid complex conditions clauses , if a scenario of a complex nature exists , these clause need to be broken down into individual conditions*
- *Never assume that the reader has business domain knowledge*
- *Use simple and basic terminology*
- *Express the requirement in a Verb or verb phase*
  - *Action Verb :- Create , Delete , check , Assign , Display , obtain and Update*
- *Write in active voice , clearly defining who or what is responsible for fulfilling the Requirements*

Guidelines for Writing Requirements

Structuring of the Requirements

- ***The Requirements need to be structured in a clear manner, with the help of the following elements :-***

  - ***Continuances :- Phrases that introduce the specifications at Lower Level***
    - ***e.g.. – as follows , listed , such as***

  - ***Directives :- Phrases that point to illustrative information within the requirements. These strengthen the document specification statements and make them more understandable.***
    - ***e.g.. – note , for example***

  - ***Event/Condition :- Describes when the requirement must be fulfilled . This could be possible due to an external event that triggers the requirement , or a condition under which the solution is operating.***
    - ***e.g.. – Payments will parked in the warehouse, if they miss the cut-ot time buffer***

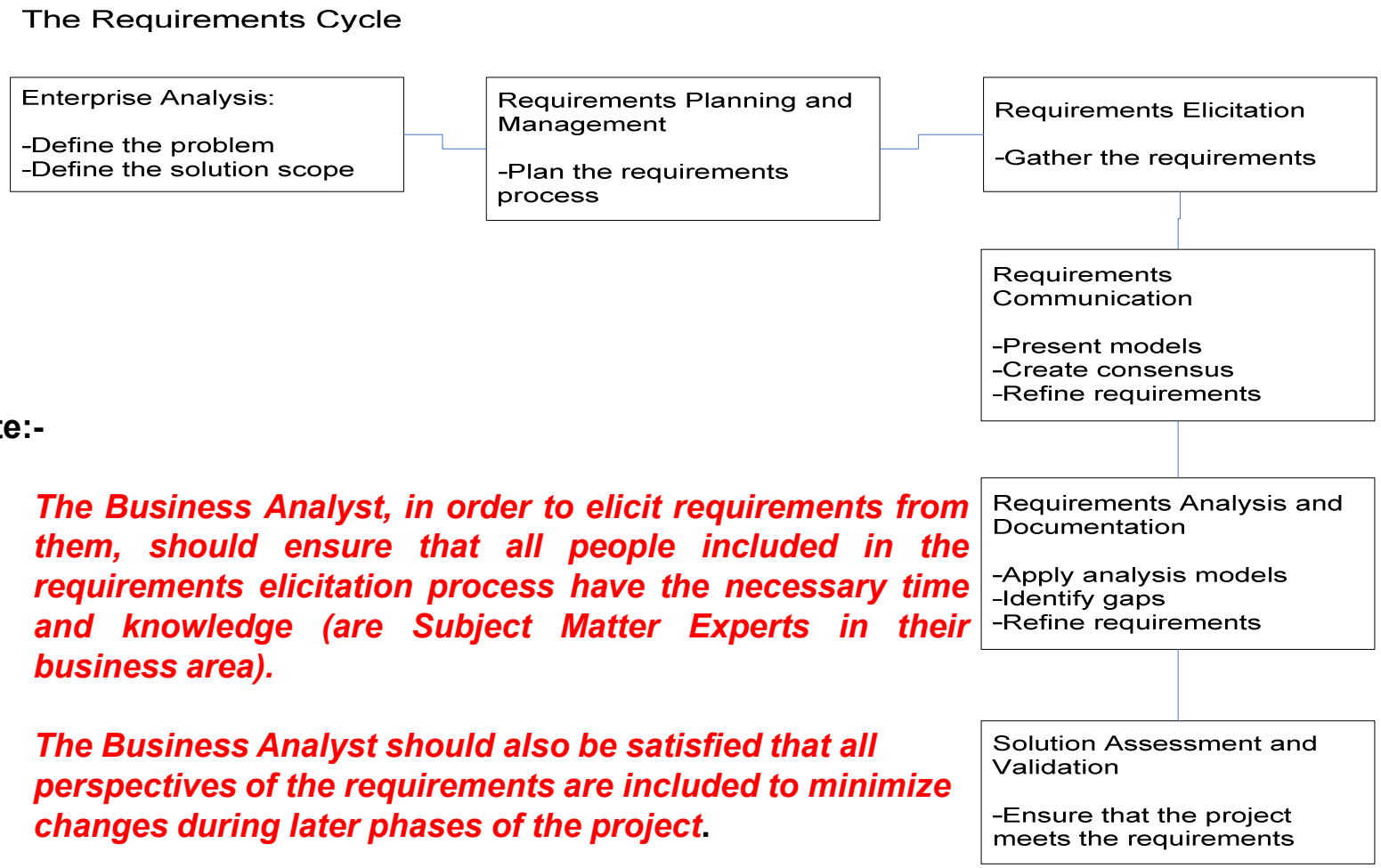
  - ***Imperative Word and Phrases which command something should be included.***
    - ***e.g.. – shall , must , must not , is required to***

Guidelines for Writing Requirements

Structuring of the Requirements

- ***The Requirements need to be structured in a clear manner, with the help of the following elements :-***
  - ***Subject :- Who perform the operations. This may be a person or a system, but the respond to the event or condition in an effort to fulfill the requirements***
  - ***Object :- The entities or Data that are involved in fulfilling the requirement***
  - ***Outcome :- Describe the desired result, including any criteria used to determine that the requirement has been successfully***

The Requirements Cycle



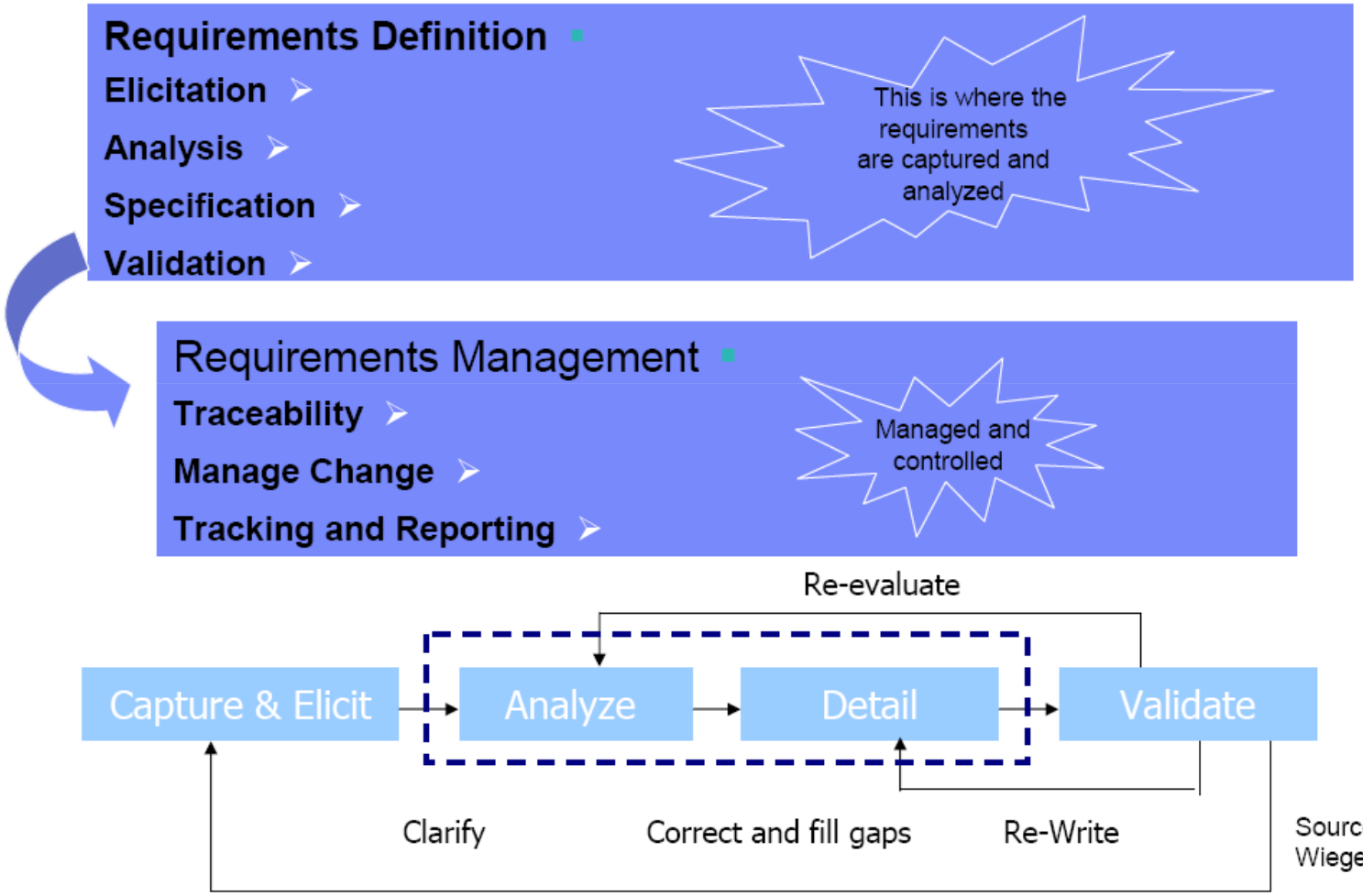
Note:-

The Business Analyst, in order to elicit requirements from them, should ensure that all people included in the requirements elicitation process have the necessary time and knowledge (are Subject Matter Experts in their business area).

***The Business Analyst should also be satisfied that all perspectives of the requirements are included to minimize changes during later phases of the project*.**

The Requirements Life Cycle

Adopt a requirements lifecycle



Requirements Classification

Determine Assumptions and Constraints

Tasks	Purpose	Inputs	Outputs
Determine Assumptions and Constraints	As we analyze stakeholder requests we will find that some of their desires are not properly requirements but are rather based on assumptions regarding what the solution team is capable of delivering. These should be captured and assessed but are not properly requirements .	Stakeholder Statements	Assumptions and Constraints

- ***Assumption and Constraints should be clearly documented and listed down***
- ***Assumptions are factor , which are believed to be true , but are not confirmed***
- ***Constraints are restrictions and Limitations to the process***
- ***Assumptions and Constraints are identified through elicitation from stakeholders:-***
  - ***Business Constraints :-*** *are due to budgets, time restrictions ,*
  - ***Technical Constraints :-*** *may be due to Hardware , software platform and application software*

Verify Requirements

Tasks	Purpose	Inputs	Outputs
Verify Requirements	Determine that the requirements are correctly and completely defined.	Specified or modeled Requirements	Verified requirements

- ✓ ***Verify Requirements focuses on the completeness , correctness , and usability of the requirement from the quality standpoint***
- ✓ ***Validate Requirement focuses whether or not the stated Requirements support and are in sync with business goal and objective and satisfy the needs of the end user***
- ✓ ***These Requirements need to be clearly defined correctly , which would then translate into good quality***

Characteristic of Requirements Quality

- ✓ ***Cohesive :- Must ensure that it specifies only one thing , even though cohesion may vary with different type of Requirements***
- ✓ ***Complete :- Each requirement must be a self contained without any missing information . It must define all the possible situations that it could encounter and appropriate response to each***
- ✓ ***Consistent : - Ensure that individual Requirements focuses on the completeness , correctness , and usability of the requirement from the quality standpoint***
- ✓ ***Correct : - Defects in requirements will lead to defects in solution***
- ✓ ***Feasible :- The Requirements , must be implementable within the existing infrastructure with budget , timeliness , and resources***
- ✓ ***Mandatory: - Ensure that individual Requirements should by the very nature , be mandatory and important for the overall success of the project***
- ✓ ***Modifiable : - Each requirement should be such that they could be clustered and grouped together in-order that they could be modifiable***
- ✓ ***Unambiguous : - Each requirement should be such that they could be clustered and grouped together in-order that they could be modifiable***
- ✓ ***Testable : - Each requirement should be of testable nature***

Validate Requirements

Tasks	Purpose	Inputs	Outputs
Validate Requirements	Validate that a requirement will satisfy a business need.	Verified requirements	Validated requirements

- ***One of the most important Technique of the validation of the requirements is checking of all the rules (Business Rules) which have been incorporated to achieve the business goal***
  - ***Stated in Business Terms to enable the business users to validate the rules***
  - ***Documented Independently of How they will be enforced***
  - ***Stated at the atomic level and in declarative Format***
    - ***E.g. – checking the status of the account is a process***
    - ***The rule that , if the account is delinquent for four billing period is called terminated account***

Validate Requirements

- ***Structured Walkthrough***
  - *It is actually workshops/meeting with the user/customer to solicit that these requirements agreed on their need*
  - *Identify inconsistencies between the documentation and needs of the user and customers*
  - *Determine whether cost and time is sufficient to achieve the product and project objective*
- ***Data Modeling***
  - *A data model usually takes the form of the diagram supported with textual content*
  - *Entity Relationship Diagram*
  - *Use Cases / Process Modeling*
- ***UML – covered in the 2 slides later***

Data Modeling Vs. Process Modeling

- Data models are similar to process and logic models, but there are differences.

- Similarities are :
  - Data modeling is a “Requirements Structuring” technique along with process and logic models.
  - Data modeling is based on requirements gathering techniques such as interviewing, questionnaires and JAD.
  - There are many ways to model data, e.g. ERDs or class diagrams.
    - ERDS are very popular as they are semantically very rich.
  - There are many versions of ERD notation, but no official standard exists.

- Difference include:
  - Whereas business processes are fairly dynamic, the fundamental data for an organization do not normally change over time.
    - For this reason, many people hold data models in the highest regard compared to process models.
  - Think of an ERD as depicting the skeleton of the information system
    - A Data Flow Diagram depicts the blood flowing through the system

Conceptual Data Modeling

- Data can be modeled at many levels, including the conceptual, logical and physical level.
- What is conceptual data modeling?
  - It is a very high level representation of organizational data.
  - The purpose is to show the basic building blocks for the organization, i.e. the entities and rules about their meaning and interrelationships
- Logical data modeling
  - adds more detail to conceptual modeling, but is still concerned only with how the organization/business uses data.
- Physical data modeling
  - adds more detail, but is especially concerned with the actual physical implementation of the data.
- Gathering Information for Conceptual Data Modeling
  - There are two perspectives
    - Top-down :- Data model is derived from an intimate understanding of the business
    - Bottom-up :- Data model is derived by reviewing specifications and business documents
- Process of Conceptual Data Modeling
  - First step is to develop a data model for the system being replaced
  - Next, a new conceptual data model is built that includes all the requirements of the new system
  - In the design stage, the conceptual data model is translated into a physical design
  - Project repository links all design and data modeling steps performed during SDLC

UML

- UML stands for Unified Modeling Language
- The UML combines the best of the best from
  - Data Modeling concepts (Entity Relationship Diagrams)
  - Business Modeling (work flow)
  - Object Modeling
  - Component Modeling
- The UML is the standard language for visualizing, specifying, constructing, and documenting the artifacts of a software-intensive system
- It can be used with all processes, throughout the development life cycle, and across different implementation technologies
- The UML may be used to:
  - Display the boundary of a system & its major functions using use cases and actors
  - Illustrate use case realizations with interaction diagrams
  - Represent a static structure of a system using class diagrams
  - Model the behavior of objects with state transition diagrams
  - Reveal the physical implementation architecture with component & deployment diagrams
  - Extend your functionality with stereotypes

Solution Assessment and Validation

Chapter 7

Solution Assessment and Validation- Chapter 7

- Delivering the best solution
  - Ensures the solution meets the stakeholder objectives while supporting the needs of the developers
  - Guides detailed specifications & development of the solution, testing & implementation
  - Establishes ways to assess the project success after implementation
- Value
  - Articulates how the Business Analysis professional should work with the other project team members to produce the solution design
  - Identifies the approach to evaluating alternative solutions once requirements have been formally signed off
  - Ensures that the solution is implemented smoothly
  - Verifies that the solution is thoroughly tested

Solution Assessment and Validation

- Some of the Solutions Example are:-
  - *Utilize existing Software /Hardware that is available within the Organization*
  - *Purchase and lease software /Hardware from an Outside organization*
  - *Design and Develop custom software*
  - *Add Resources to the Business or make Organizational Change*
  - *Change the Business Procedures/ Process*
  - *Combination of the above*

- Implementation Procedure always involves a SME along with a Business Analyst:-

  - *The Implementation SME's will provide the specialize expertise on the design and construction of the solution components that fall outside the scope of the business analysis*

  - *They along with BA , will identify the various options , evaluate them and then make the recommendation and acquire/build the solution and deploy it to the business area.*

Solution Assessment and Validation

- Involvement with QA team and activities to be performed :-
  - ✓ *Assist with the Development of the solution test plan*
  - ✓ *Review the solution Test plan*
  - ✓ *Review the results of developer run units test*
  - ✓ *Facilitate the generation of the test cases*
  - ✓ *Review test cases and procedures for compliance with requirements*
  - ✓ *Trace Requirements to the Test cases to assure Complete Coverage*
  - ✓ *Plan and assist business stakeholders with the User Acceptance Testing*

Solution Assessment and Validation

- Sometimes to Option for the solution via the following procedures :-
  - *RFI – Request for Information*
  - *RFQ :- Request for quote*
  - *RFP – Request for Proposal*
- Solutions Components :-
  - The Business analyst will have to do the following :
    - To develop the business case that justify the additional investments
    - Need to support some of requirements , which might not have big credentials , but are of prime importance in acting as a subsidiary to some high value requirements
    - W.r.t allocation of requirements , whether they can be effectively fulfilled manually or through automation

Solution Assessment and Validation

- For effective implementation , needs to understand the organizational readiness to accept the solution
- Can use structured Walkthrough as one of the tools to help answer the questions regarding validations
- UAT

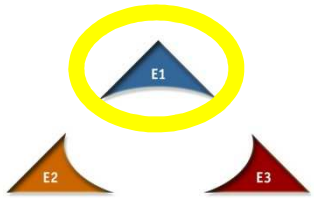
BUSINESS ANALYSIS
OTHER CONCEPTS

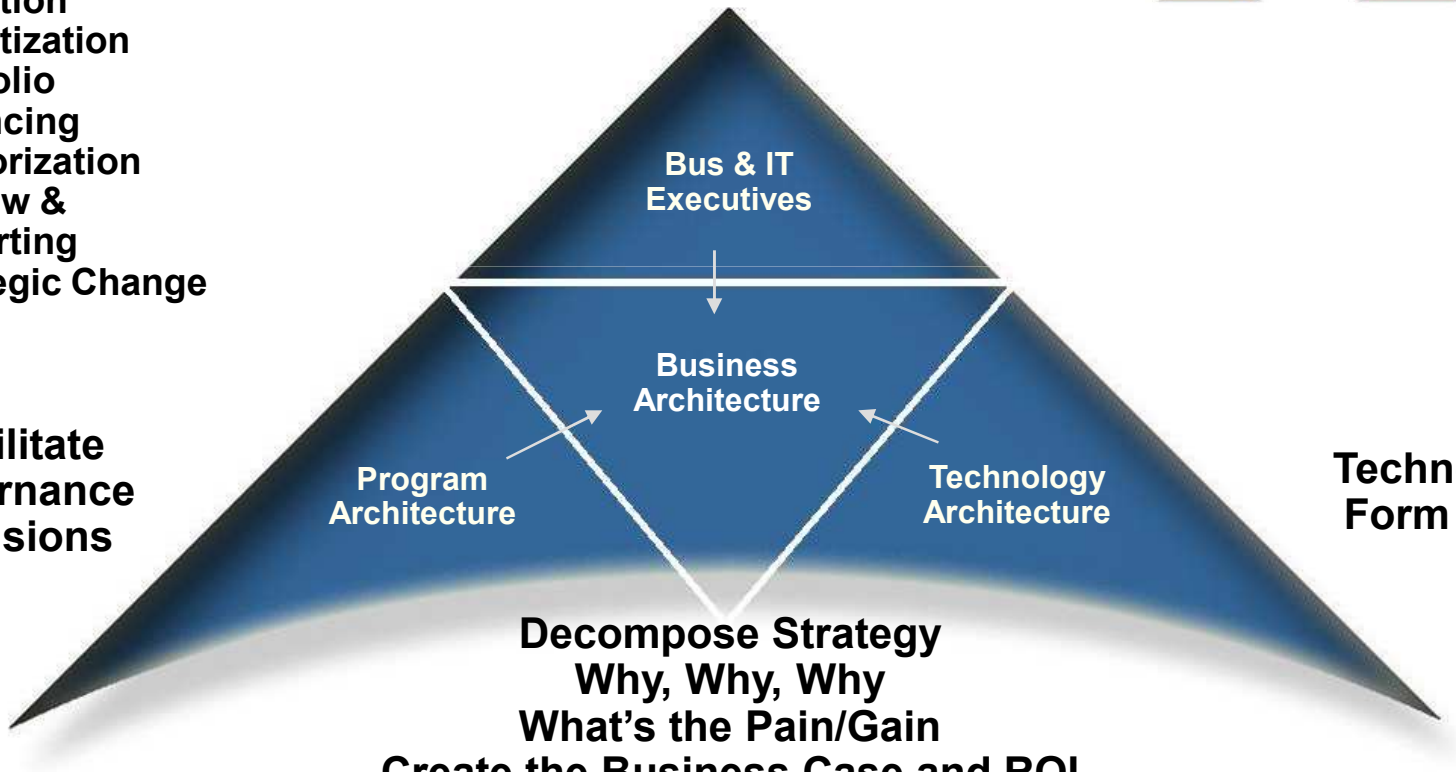
Business Analysis in the Organizational Model

Business Analysis in Governance Model & Processes – E1

Identification
Categorization
Evaluation
Selection
Prioritization
Portfolio
Balancing
Authorization
Review &
Reporting
Strategic Change

Determine
Strategy



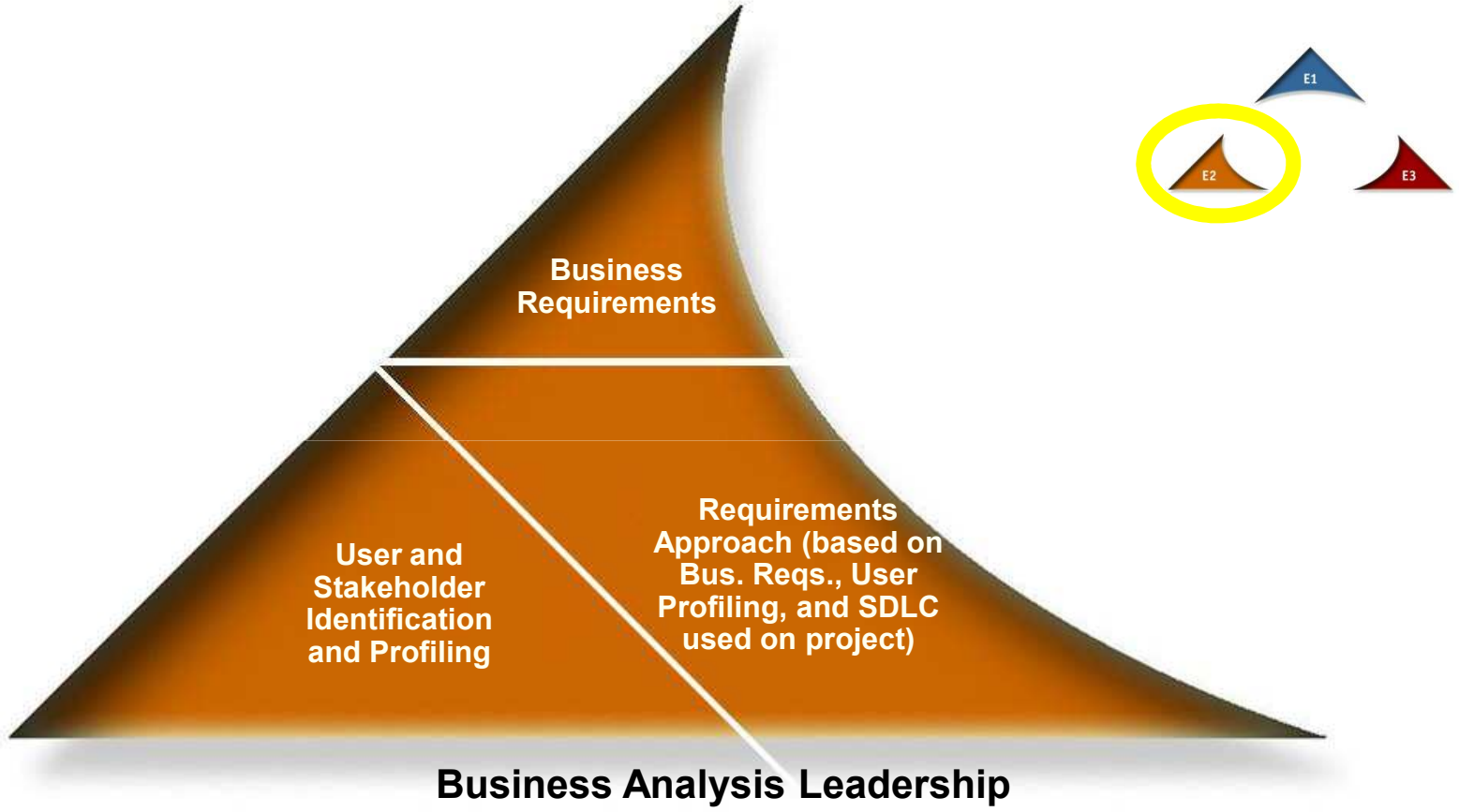


Facilitate
Governance
Decisions

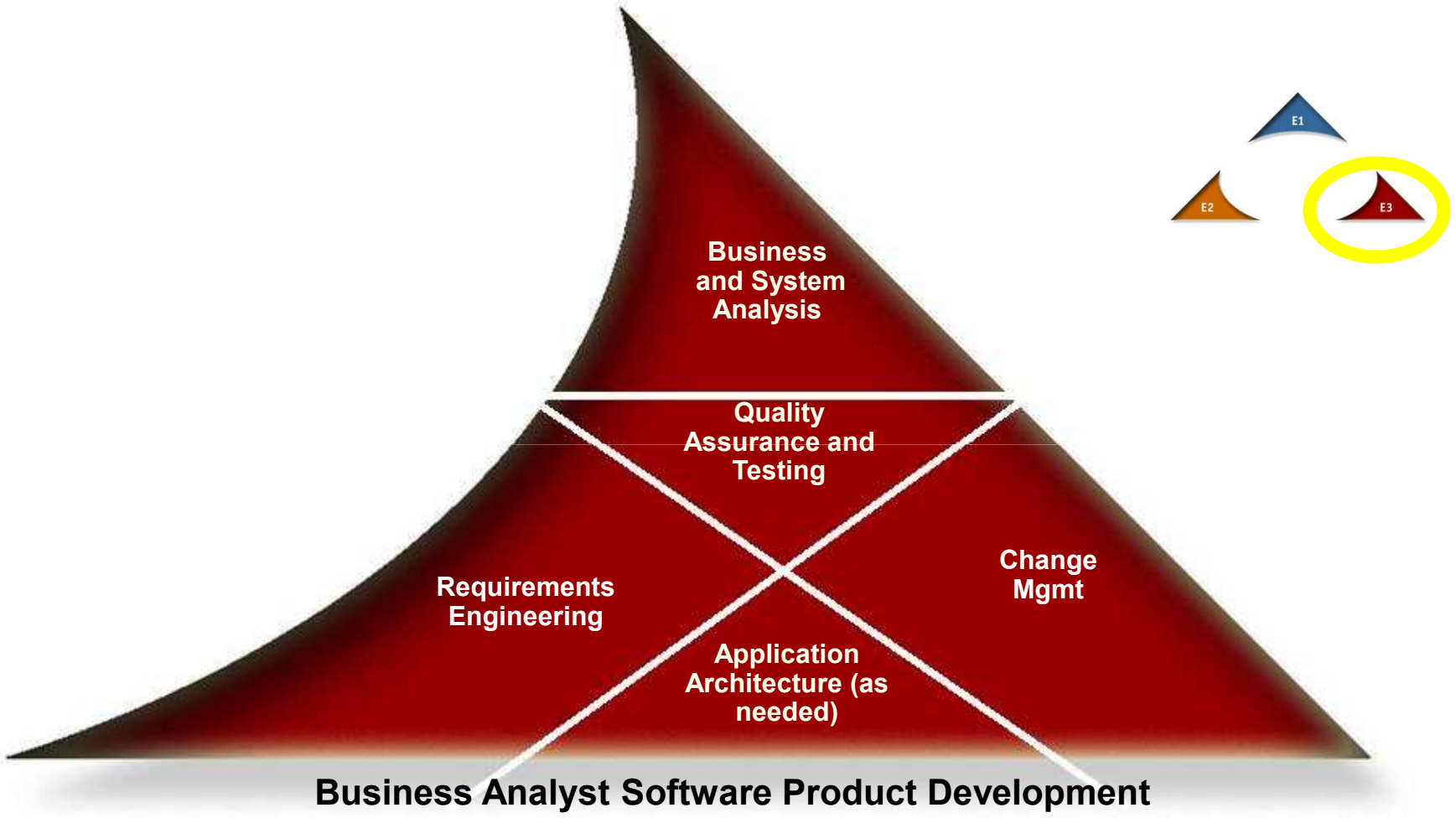
Technology
Form & Fit

Decompose Strategy
Why, Why, Why
What's the Pain/Gain
Create the Business Case and ROI
Model the business as Static and In-motion (process)

Business Analysis in the Project Management Model –E2



Business Analysis in Product Development Model- E3



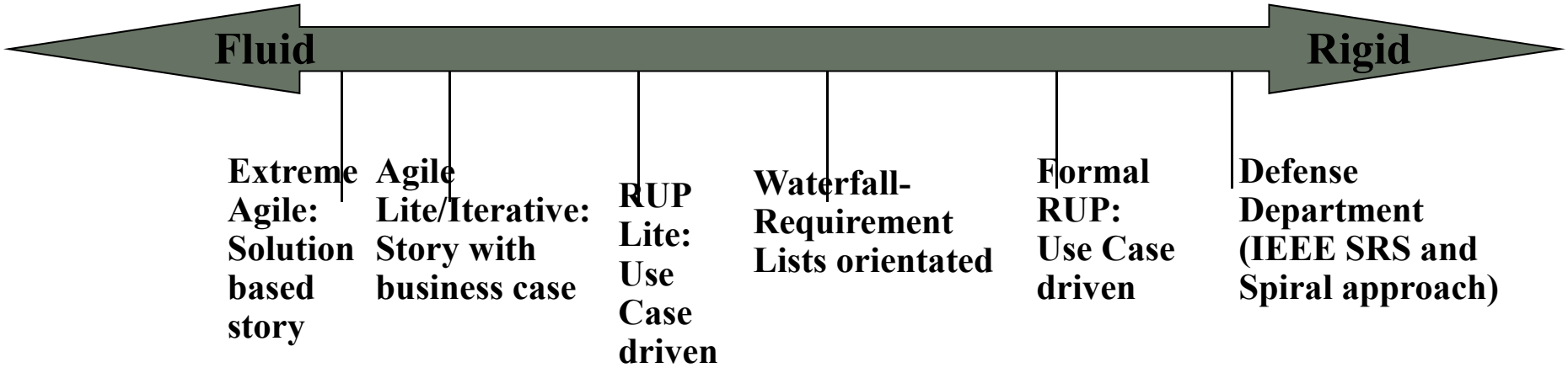
Business Analysis – Requirements Continuum

The Drivers of Good Requirements

Where does an organization think they are on the Requirements continuum?

Where is the organization really at on the Requirements continuum?

Where does the organization want to be on the Requirements continuum?



Business Analysis – Requirements Continuum

What are the business drivers that affect the Requirements? (E1)

Explicit versus implicit business knowledge

Product speed to market

Operational Scalability

Increase Product Profit Margins

Cut Operational Costs

Regulatory Compliance

Increase Product Market Share

Increase Customer Satisfaction

Keep the lights on

Business Analysis – Requirements Continuum

What are the project and cultural drivers that affect the Requirements? (E2)

Business Engagement

Executive Sponsorship

Physical Location of Project Team(s)

Culture Maturity
(ex: Requirements capability)

New or Existing Business

Project Governance: Scorecard and Project Reporting

Residual Knowledge of the Business Architecture

Business Analysis – Requirements Continuum

What are the technology drivers that affect the Requirements?(E3)

System Complexity:
Standalone vs. Integrated

Development Tools:
Example Agile and XML work well

Residual Knowledge of the Technology Architecture

New or existing Technology

Development Costs

Resource Skill Sets

Technology Support Costs

Resource Demand

Outsourcing

Business Analysis – Requirements Continuum

So what should the Requirements Continuum be set at for my organization?

The Requirement approach must be chosen on the <u>Situational Needs</u> of the project to produce good requirements.

- **The Business Drivers, Technology Drivers, and Cultural/Project Drivers all work together to move the Requirements location on the continuum based on priority.**
- **The three Drivers fit right into the Essential Business Model.**
- **The Requirements Engineering Process, Tools, and People (Analysts and Technical staff) must fit the chosen Requirements approach.**

Role of the Project Manager

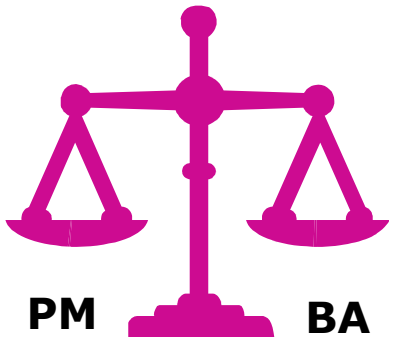
- Usually the 1st person assigned to the project
- Responsible for planning the project and ensuring the team follows the plan
- Manages changes, handles problems, keeps the project moving
- Manages people, money, risk
- Chief communicator of good or bad news to the Business Sponsors and IT Management

Role of the Business Analyst

- Usually assigned to the project after it has started
- Responsible for bridging the gap between the Business and IT
- Learn the business inside and out
- Essentially the architect of effective business systems
- Job title, definition and responsibilities viewed inconsistently across the industry

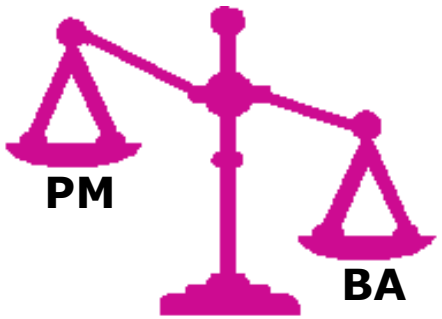
Skills Comparison - Similarities

Project Manager		Business Analyst
• Strong communication skills	⟷	• Strong communication skills
• Understanding of the SDLC	⟷	• Understanding of the SDLC
• Negotiation/ consensus building	⟷	• Negotiation/ consensus building
• Strong interpersonal and client management skills	⟷	• Strong interpersonal and client management skills



Skills Comparison - Differences

Project Manager		Business Analyst
• Ability to see the “big picture” for the project	⟷	• Detail-oriented
• Directs project team	⟷	• Listens to people (SMEs)
• Helps people (project team) get things done	⟷	• Helps SMEs describe how and why they perform tasks
• Ensures the product is delivered on time, within budget	⟷	• Ensures the product is built right according to the requirements



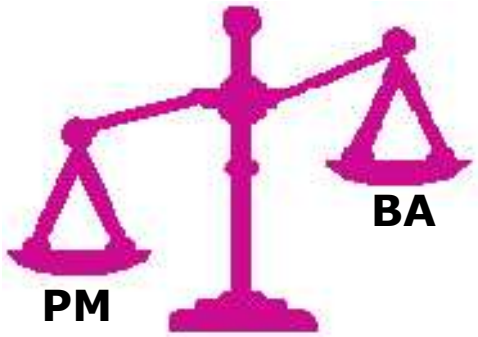
Skills Comparison - Differences

Project Manager

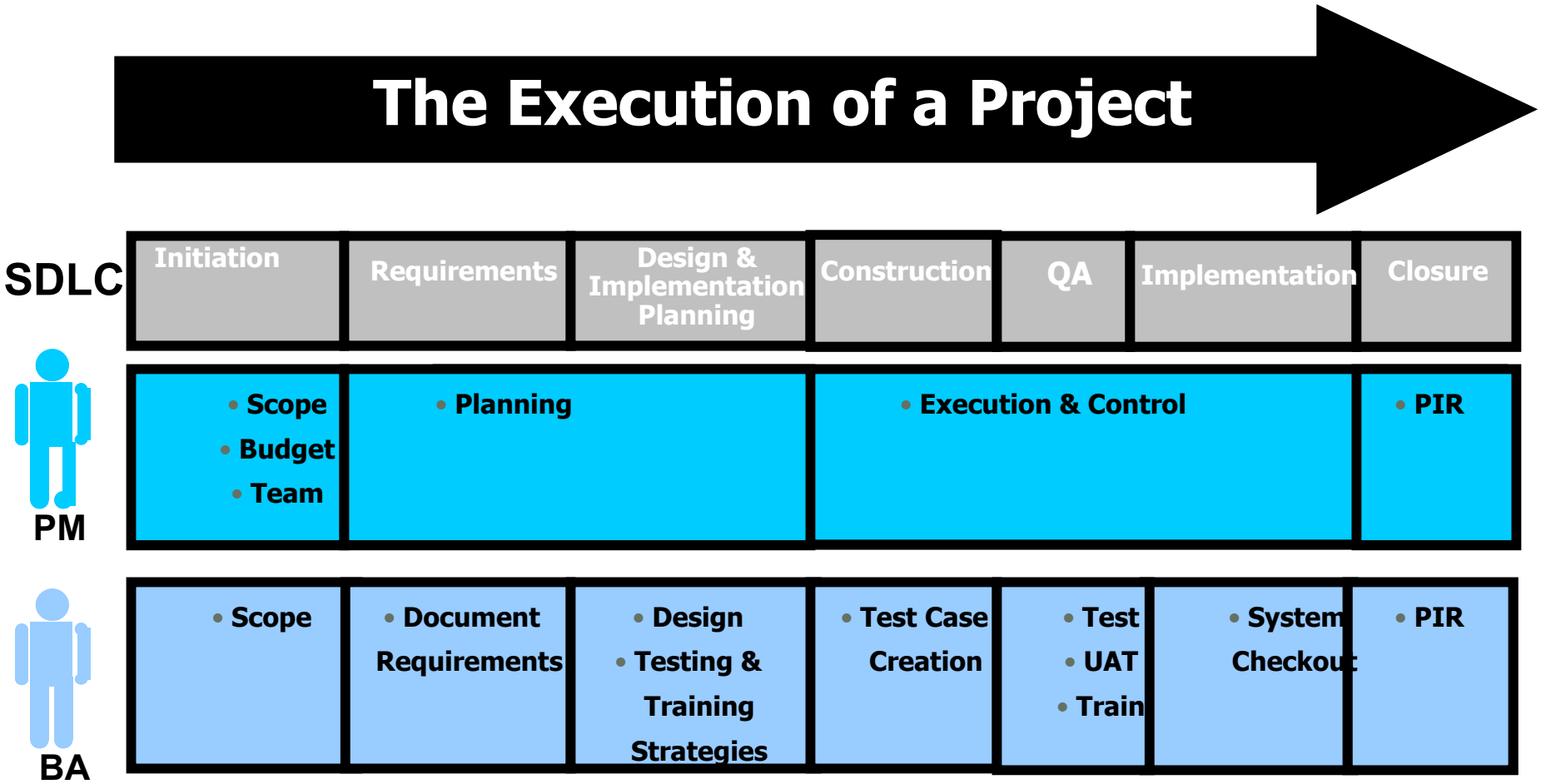
- Removes issue barriers
- Manages project change control
- Manages the Work Breakdown Structure (WBS)
- Management skills

Business Analyst

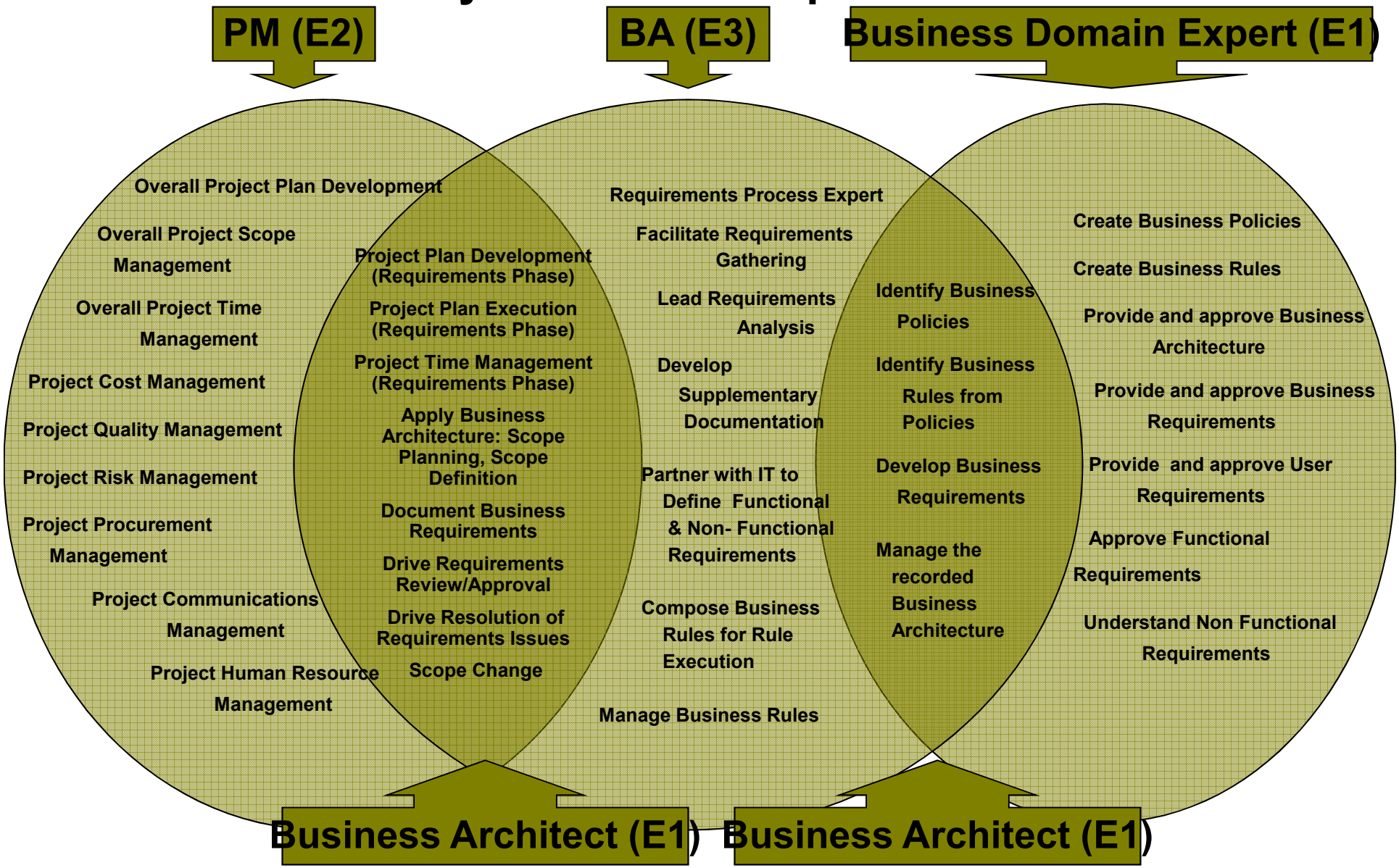
- Identifies business issues
- Manages requirements change requests
- Performs requirements-related tasks in the WBS
- Investigative skills



How do a PM and a BA Work Together?



Business Analysis - Role Comparison



Business Analysis – Role Comparision

- It's common to assume that a BA and PM are interchangeable. There are skills that a true BA and a true PM share, which are represented in the overlap. Most of these are "art" skills – communication, building relationships and negotiation – all things they are very good it. They also understand SDLC (Software Development Lifecycle), which means that know what work needs to be done and when.
- BUT – there are other skills that are specific to each discipline that are vastly different.
- From a PM perspective, big picture means looking at ALL work. The PM directs the team and controls the work – changing resources as needed if the critical path changes. The PM's responsibility is to help people get their work done by removing the obstacles that exist (organizational, political). Most PM's focus on time, cost and scope/quality – the triple constraint as that's what their sponsor's focus on.

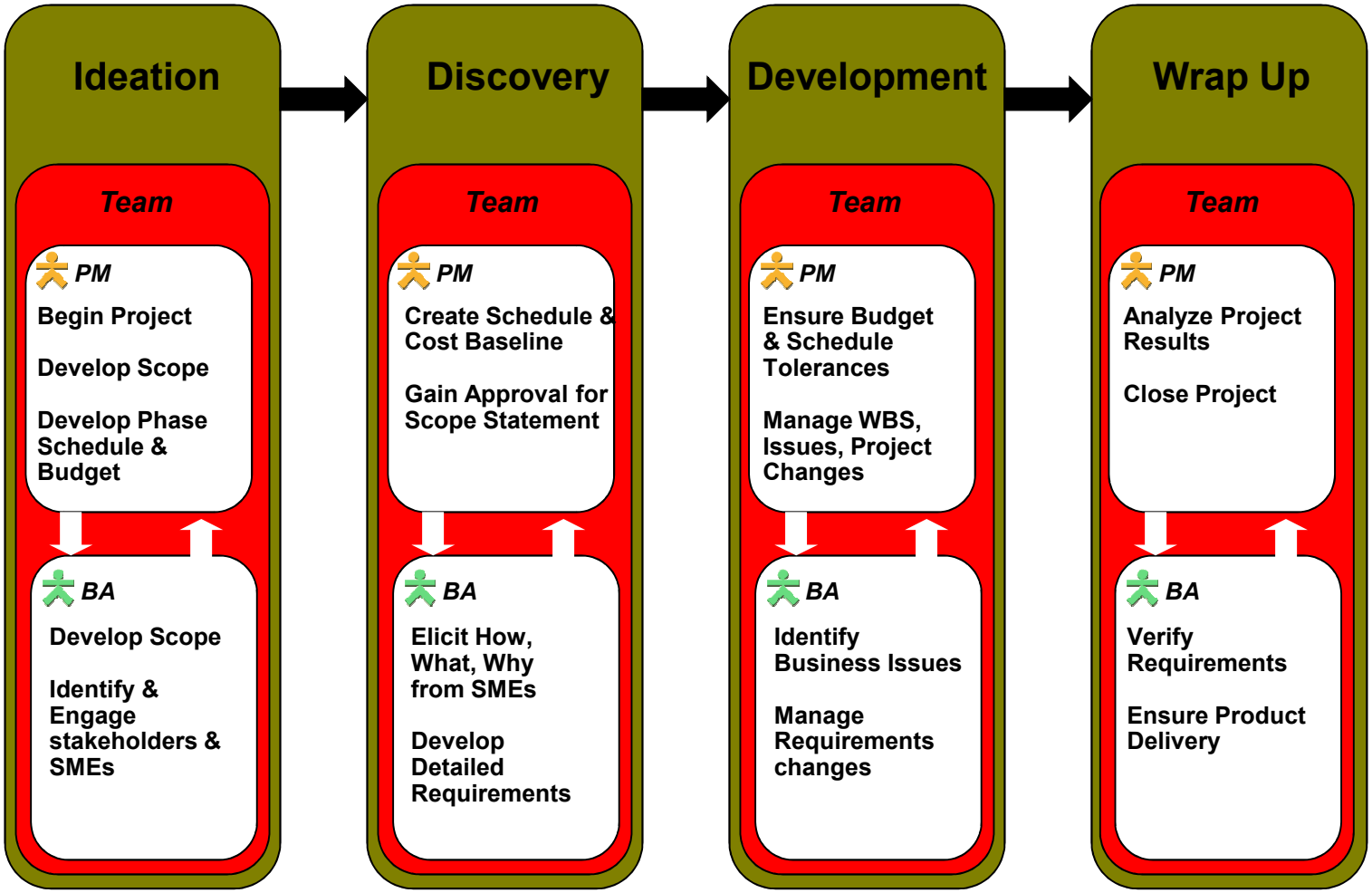
Business Analysis – Role Comparison

- *These skills are more managerial in nature – unlike the skills necessary for a BA…*
  - *A Business Analyst lives in the details.*
  - *Further clarify the information*
  - *Build consensus on what the system will do and look like.*
  - *Ask lots of questions. A favorite word of the BA is "WHY?"*
  - *Listen to not only what the client says, but what do they mean.*
  - *Focus is developing the PRODUCT, not running the PROJECT*

Business Analysis in Enterprise Architecture

- *Business analysis is critical to enterprise architecture, because it derives the business functions, processes, activities, and tasks.*
- *Coupled with some other basic data and systems analysis, BA determines the information requirements of the business and the systems (manual or automated) that serve those up.*
- *It helps in the identification of gaps, redundancies, roadblocks, and opportunities which are used by enterprise architecture to drive business process improvement, reengineering, and the introduction of new technologies*.

Role Delineation



Role Delineation

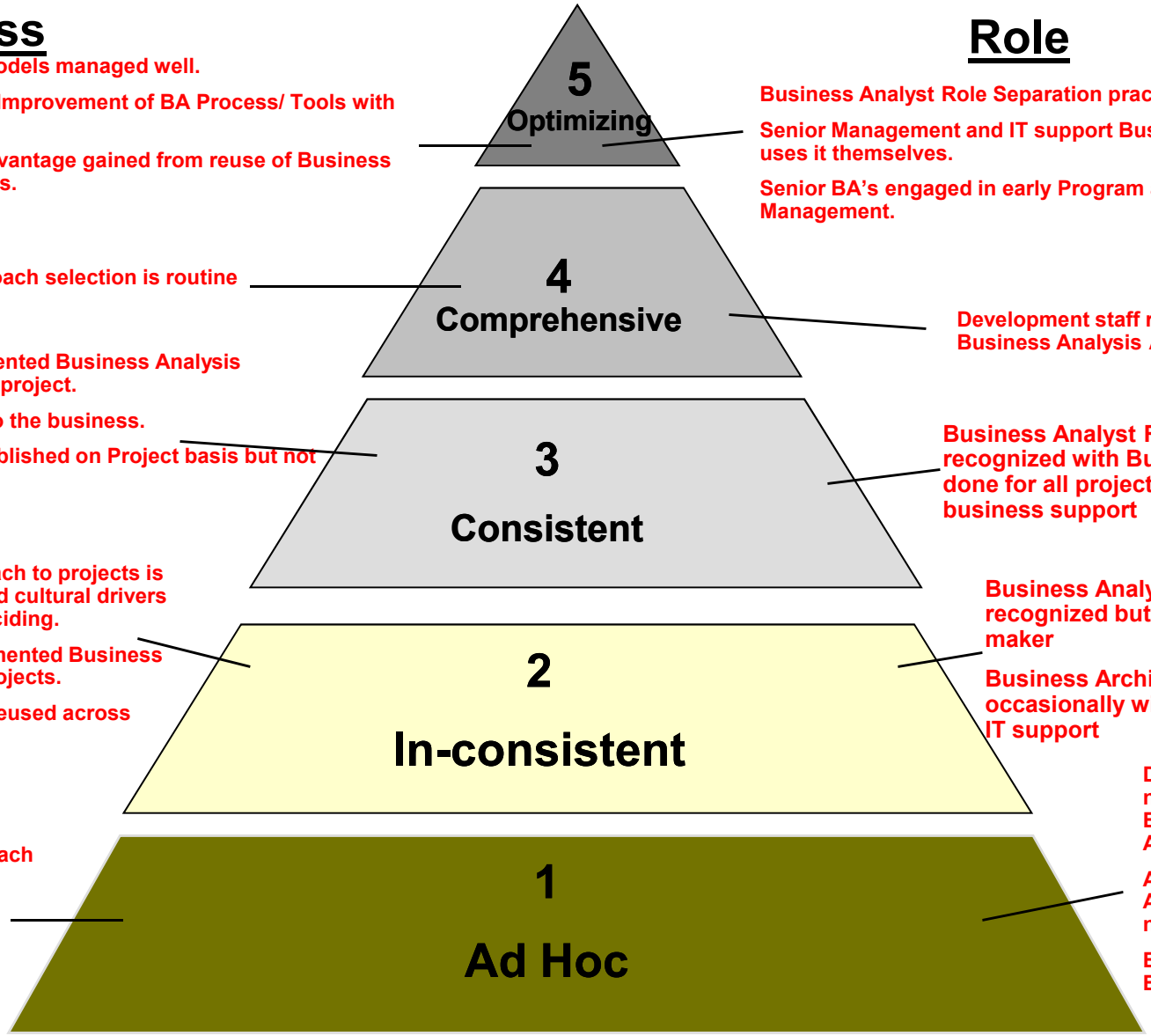
- Ideation phase for BA
  - *Works with the PM to define the scope of the project.*
  - *Identifies the business areas impacted by the project*
  - *Works with the PM to have SMEs assigned to the project.*

- *Discovery phase for BA:*
  - *Identify business processes.*
  - *Each process, ----- detail out the requirements – iterative process of requirements elicitation, analysis, representation and validation*
  - *Use facilitated sessions wherever possible*
  - *Culmination -------- approval by the SMEs of the requirements packet.*
  - *PM ---- progress of the sessions*
- *Development of BA:*
  - *Review session.*
  - *Design*
  - *Prototypes*
  - *Issues --- negotiate a solution*
  - *Changes to the requirements -----*
  - *Documented,*
  - *Estimated by the development team as to the impact to the project*
  - *Signed off by the business before they are considered part of the project.*

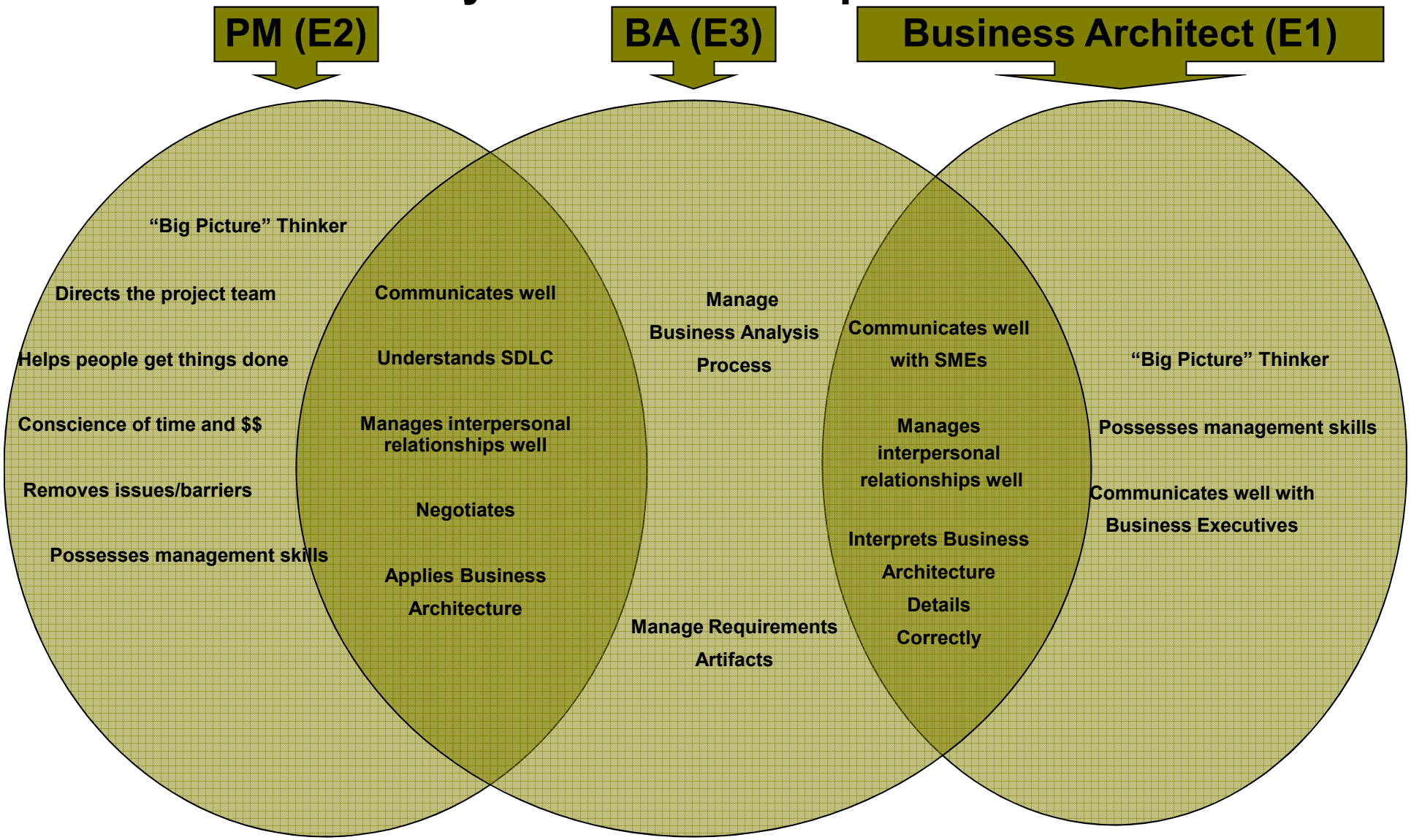
Role Delineation

- *Wrap for BA*
  - *user acceptance testing*
  - *training*
  - *communication to users of implementation*.

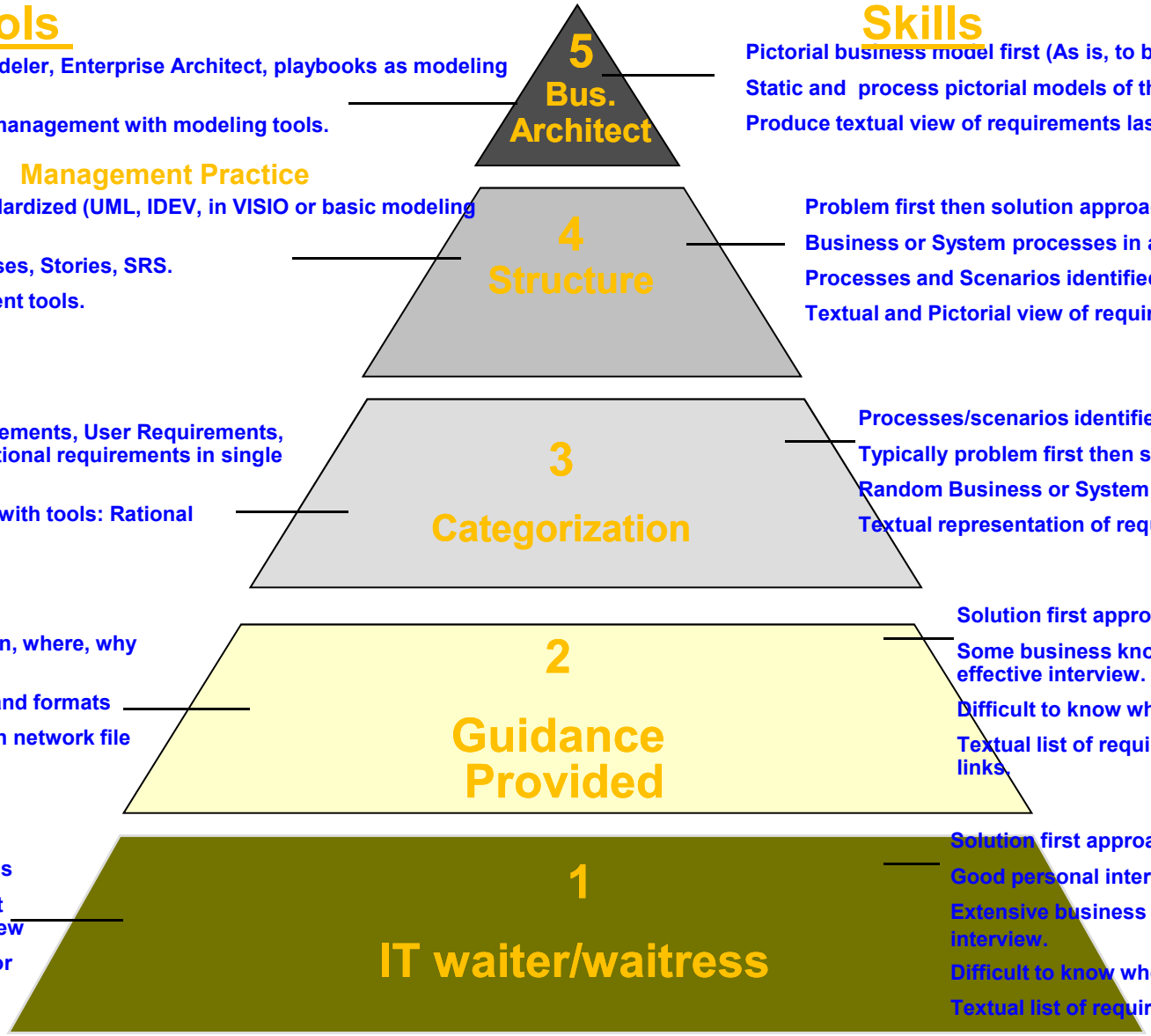
Business Analysis- Maturity Levels



Business Analyst- Skills Overlap



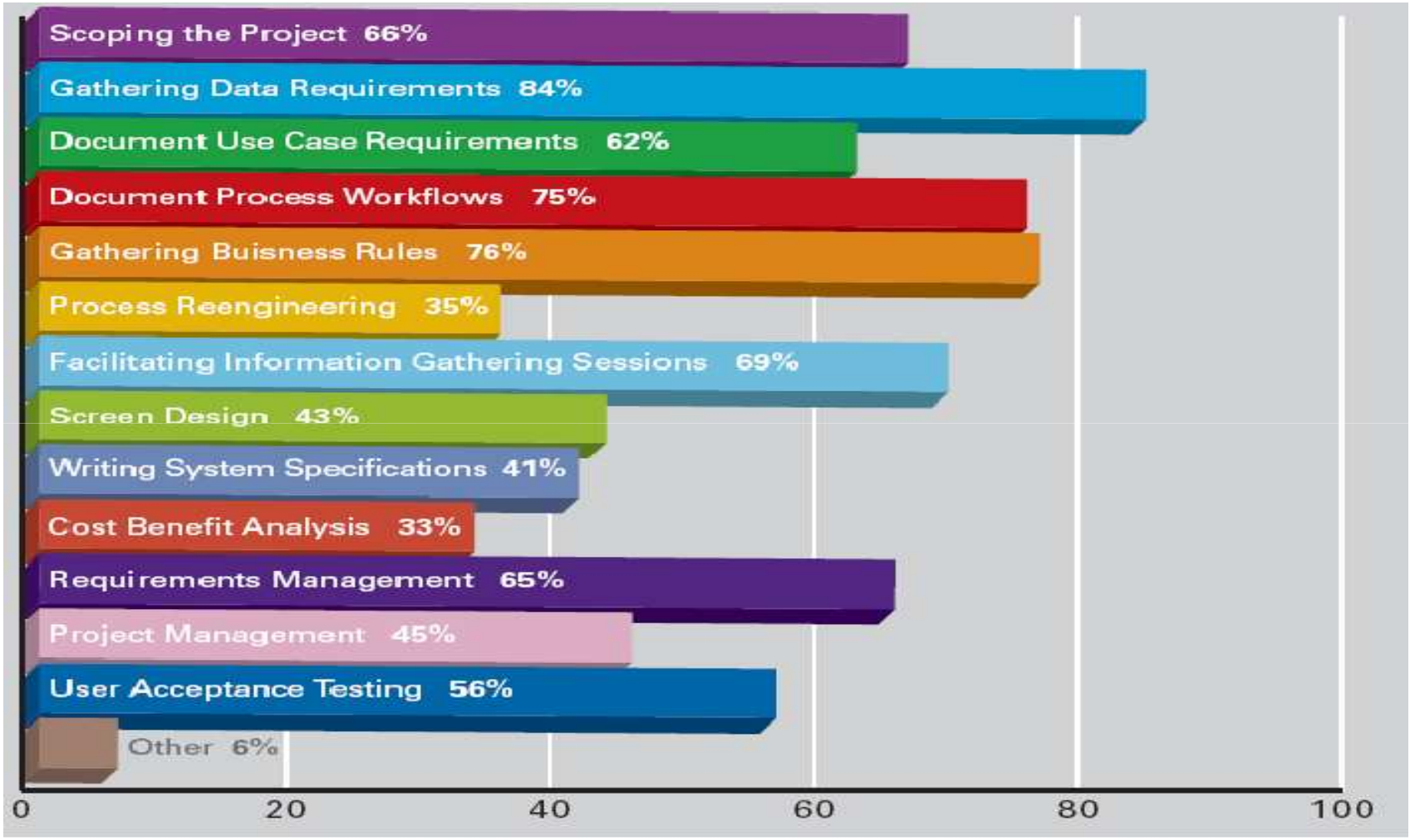
Business Analyst - Maturity Levels



BA Knowledge and Skill Set Required

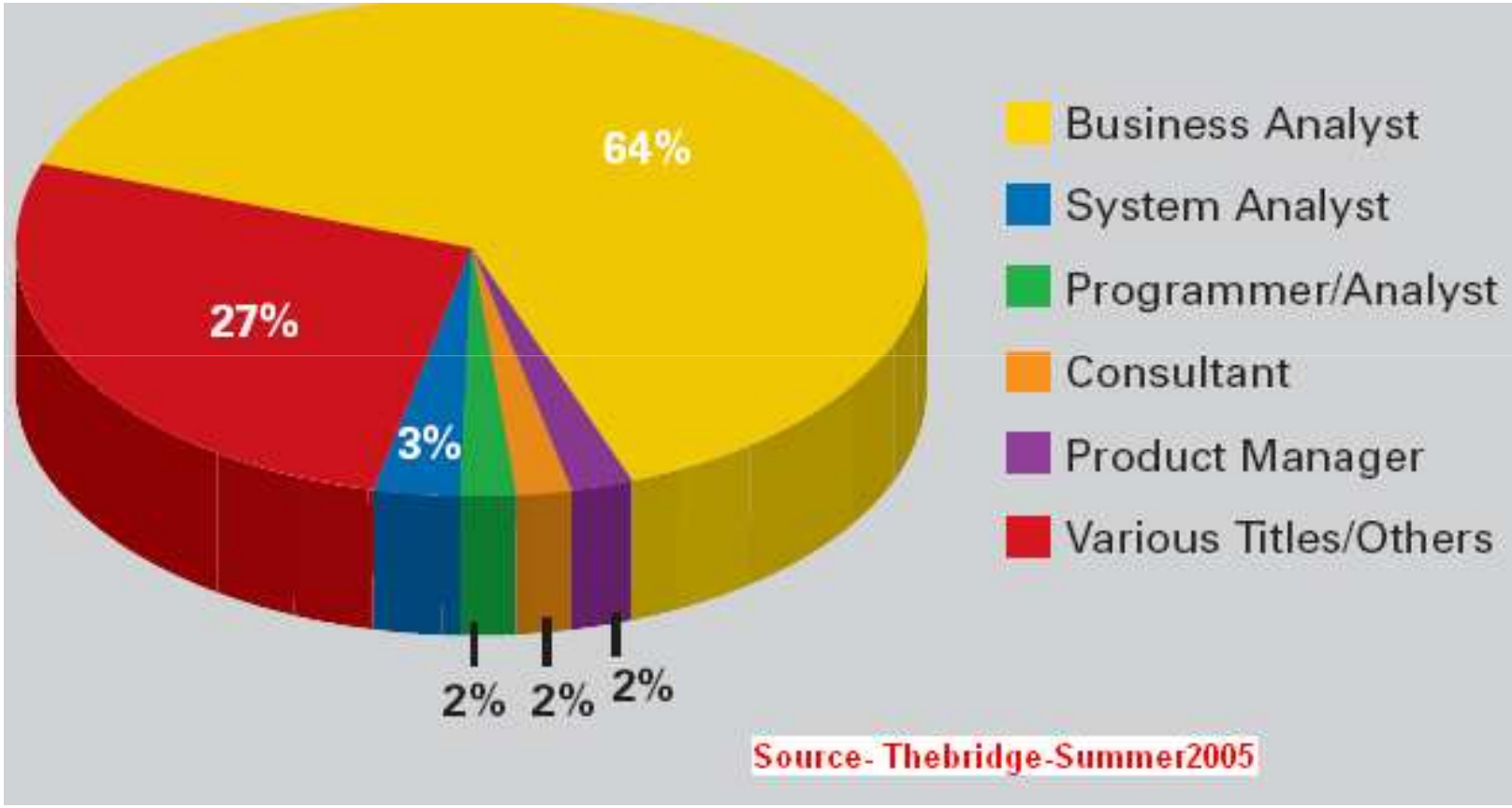
Technical	Analysis	Business	Leadership
Systems engineering concepts and principles	Fundamentals of business analysis	Business process improvement and reengineering	Fundamentals of project management
Complex modeling techniques	Ability to conceptualize and think creatively	Strategic and business planning	Capacity to articulate vision
Communication of technical concepts to non-technical audiences	Techniques to plan, document ,analyze, trace, and manage requirements	Communication of business concepts to technical audiences	Problem solving, negotiation, and decision-making
Technical writing	Requirements risk assessment and management	Business outcome thinking	Organizational change management; management of power and politics
Rapid prototyping	Administrative, analytical, and reporting skills	Business writing	Team management, leadership, mentoring, and facilitation
Technical domain knowledge	Cost / benefit analysis	Business case development	Authenticity, ethics, and integrity
Testing, verification, and Validation	Time management and personal organization	Business domain knowledge	Customer relationship management

Primary Roles Performed by BA



Source :Thebridge-summer2005

PRIMARY JOB TITLE FOR BUSINESS ANALYSTS



WHO MAKES A GREAT BUSINESS ANALYST?

- Should be an outstanding communicator
- Must understand the SDLC
- Must enjoy very detailed research and recording
- Must be skilled at organizing and managing large amounts of information in various forms
- Must be customer-focused
- Must be flexible
- Must come prepared with a toolkit of techniques to elicit excellent requirements

Business Analysis Assessment Scope

Business and System Analysis – the organizational glue of software development

	People-BA roles	Process	Tools	Essential Model Domain
Portfolio	X	X	X	E1
Program	X	X	X	E2
Project	X	X	X	E2
Analysis	X	X	X	E3
Development	X	X	X	E3
Testing	X	X	X	E3

Project Management Office

Agile Business Analyst – Comparison

- **Requirements planning activities :-** to set the stage for requirements, the team strives to create a shared understanding of the product by all the stakeholders

Traditional Analysis	Agile Analysis Adaptation
Attend project chartering sessions to define a vision, glossary, requirements risks, and product stakeholders.	• **Design, facilitate, or participate in product vision and road mapping workshops.** • **Help your customer understand which roles and themes to best deliver in each product release.** • **Help your customer and team identify logical groupings of value-based requirements, and use these groupings to create a product roadmap showing incrementally delivered requirements over time. These requirements often take the form of minimally marketable features, stories, or epics (i.e., large stories that cross releases), use cases (high level only), events, or a combination.**
Review and modify a list of tasks, time, and delivery dates in a work breakdown structure plan developed by the project manager.	• **Design and facilitate (or participate in) release and iteration planning workshops.** • **Regularly prune the product backlog by collaborating with team members to generate a relative size estimate for backlog items.** • **Conduct analysis "spikes" (short, time boxed research stories) to elaborate on backlog items that need more analysis, researching requirements and their priorities.**
Generate a SWAG ("S#*&-Wild-Ass-Guess") estimate of time, effort, or cost for each requirement in the specification or user requirements document.	• **During iteration planning, together with the rest of the team, write down the needed tasks to deliver each user story, and estimate how many hours they will take.** • **Share actual time usage information with your team so that the team can track progress via visual graphs ("information radars") such as burn down, burn up, or cumulative flow diagrams.**

Comparison cont..

- **Requirements elicitation activities :-** During requirements elicitation, the team identifies the sources of requirements and then discovers, derives, evokes, and elicits requirements from those sources.

Traditional Analysis	Agile Analysis Adaptation
Plan how to elicit requirements using a variety of techniques.	• **Use face-to-face, collaborative elicitation techniques (workshops, prototypes) as much as possible while avoiding techniques (interviews, surveys, documentation study) that require longer lapse times or interpretation.**
Plan, design, and facilitate requirements workshops over weeks (or months).	• **Plan and facilitate short, informal requirements modeling sessions throughout each iteration.** • **Plan and facilitate product vision and road mapping workshops and release planning workshops.** • **Teach your customer about supplemental analysis models so that they can question, participate, critique, review, and approve them (this should be done in traditional projects as well).** • **Sketch out prototypes and identify user acceptance test data in real time, while a story is being designed, coded, and prepared for testing.**

Comparison cont..

- **Requirements analysis activities :-** During analysis, the team seeks to understand and define requirements so that stakeholders can prioritize their needs and decide which requirements to build.

Traditional Analysis	Agile Analysis Adaptation
Define the scope up front by using a set of requirements models as the basis for detailed modeling.	• **Help your customer define the vision and the scope up front-at a high level only.** • **Help your customer and team create lightweight models during product road mapping and release planning. These models help customers carve out a value-based release schedule that balances business priority with architectural dependencies.** • **Collaborate with architects and developers on design to ensure that requirements include the technical aspects of the product.**
Develop analysis models for the entire set of requirements that are in scope.	• **Help your customer and team develop stories (user stories as well as stories that incorporate or separately define quality attributes).** • **Help your customer and team develop and extend analysis models that support understanding backlog items selected for delivery in an iteration-if and when needed.**
Ask the customer to prioritize requirements using a ranking scheme. If the customer is not available, do the ranking yourself.	• **Help your customer assign a business value and a ranking to each backlog item.** • **Help your customer understand requirements dependencies that might warrant adjustments to backlog rankings.** • **Question rankings based on goals or themes for upcoming release or iterations.** • **Assist your customer and team to right-size high-priority backlog items that are too big to deliver in combination with other high-priority backlog items in the next iteration.**

Comparison cont..

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Comparison cont..

- **Requirements specification activities :-** Specification involves refining and organizing requirements into documentation (typically a software requirements specification). This includes the entire set of functional and nonfunctional requirements to be transformed into design, code, and tests

Traditional Analysis	Agile Analysis Adaptation
Write requirements specification.	• **Help your customer and team write stories (or if you're acting as proxy customer, you write them).** • **Create doneness criteria for stories so that each becomes a well-defined, small piece of valuable software for delivery in the next (or current) iteration.** • **Create user acceptance tests or sample input and output data for each story.** • **Determine the form and format of documentation that is necessary and sufficient for requirements-related work-in-progress, handover, or product documentation**

Comparison cont..

- **Requirements validation activities :-** During validation, the team assesses whether the product satisfies user needs and conforms to the requirements

Traditional Analysis	Agile Analysis Adaptation
Set up and run meetings to review and sign off on requirements documents, and help customers run acceptance tests after the entire product's code has been created.	• **Meet with the customer and some team members to prune the backlog (once or twice each week).** • **Participate in iteration demonstrations and listen to stakeholder feedback on the delivered requirements to learn the customer's real needs and determine how to adapt the evolving product.** • **Plan and facilitate, or participate in, iteration retrospectives, and learn from the customer how you can help deliver value faster.**
Communicate with developers or testers (or respond to their e-mails and calls) to explain information in the requirements document; attend or run formal requirements review meetings.	• **Conduct just-in-time analysis modeling with customers and your team to validate the business value of each story and to ensure it will be delivered to the customer's satisfaction.** • **Participate in daily stand-ups.** • **Sit with developers and testers as they are building code and tests to explain the story and its doneness criteria.**
Help testers create user acceptance tests, or run those tests, after the entire product has been designed, coded, and unit/system/integration tested.	• **Define input data and expected results or specific user acceptance tests as part of defining doneness for each user**

Comparison cont..

- **Requirements management activities :-** Requirements management involves monitoring the status of requirements and controlling changes to the requirements baseline

Traditional Analysis	Agile Analysis Adaptation
Establish the requirements baseline, document change control processes, and generate requirements trace matrices.	• **Help the customer and team establish a product backlog and define the smallest necessary requirements attributes for each backlog item.** • **Help the customer and team define "just enough" requirements tracing needed to satisfy external regulatory body expectations.** • **Help the team determine simple, meaningful requirements mapping and organizing (features to stories, events to stories, etc.).** • **Define simple, unobtrusive ways to trace stories, with the aim of capturing metrics that will be useful for reuse and promoting development efficiencies.**
Attend or schedule change control meetings.	• **Help the customer and team prune the product backlog continually (reprioritize items, break down stories, assign rankings, estimate size, and explore requirements dependencies that will impact architecture and therefore release planning).** • **Help the customer maintain the product backlog items (on story cards on a wall, in a spreadsheet, or using an industrial strength agile requirements management tool) - or do this on behalf of the customer.**

Comparison cont..

- **Learning: The heart of agile success :-** A mantra for agile teams is "inspect and adapt." This means regularly checking on the delivered product and the processes used. Continuous improvement (called "kaizen" in lean approaches) is essential to agile success.

Traditional Analysis	Agile Analysis Adaptation
• **Participate in milestone or project "lessons learned" sessions to find out what went wrong, what went right, and who is responsible for the problems. The project manager fills out the lessons learned template and writes the closeout document.** • **Sit with your manager once or twice a year for a performance review, and get feedback on your performance, months or weeks later. Sometimes that feedback includes second-hand comments from your customer and team.**	• **Use acceptance tests, examples, sketches, simple drawings, and face-to-face communication to get feedback on your understanding of requirements.** • **Participate in daily stand-up status meetings to hear the impact you are having on other people's ability to deliver.** • **On any given day, as an item you committed to deliver is deemed done, show it to the customer to get feedback on it and confirm that the conditions of satisfaction have been met.** • **Design and facilitate, or participate in, iteration and release retrospectives (every two or three weeks, depending on your iteration timebox) to learn what works, learn what to adapt, and collaboratively agree on one or two things to do differently in the next iteration or release. The goal is to learn, adapt, get better, and experience joy in your work.**

What a Business Analyst Does?

	Technique	Description
1	Define Acceptance and Evaluation Criteria	Specifies tests and decisions regarding the approach or methodology, tools and techniques, priorities and risks associated with the acceptance phase of project.
2	Competitive Analysis and Benchmark Studies	Competitive analysis is a process which identifies key information to predict the actions of your most significant competitors. Competitive analysis is a process which identifies the key information to predict the actions of your most significant competitors. Benchmarks are created to allow you to compare your practices to best-in-class practices.
3	Facilitate Brainstorming Sessions	This is a general technique for eliciting many creative ideas for a target area of interest.
4	Identify Business Rules	Business rules are a set of operative or structural statements (facts, inferences, or calculations) that define how a business will operate independent of technology. Rules also document complex business logic or control flows.
5	Data Dictionary and Glossary	A data dictionary (glossary) is used to ensure that stakeholders agree on the format, properties, and content of desired information. Record the definitions and agreements in an appropriate repository or tool to manage the consistent use of these elements.
6	Diagramming Data Flow	A Data Flow Diagram (DFD) provides a visual model of how information and physical material moves through a system. It shows inputs, processes, storage, and outputs from a system, and the external entities that interface to the system.

What a Business Analyst Does?

	Technique	Description
7	Perform Data Modeling	A data model: represents data entities, key attributes, relationships between entities, and the nature of those relationships. Information Usage Analysis: is a technique to elicit requirements that identify or quantify data that the solution has to maintain and/or track. Class Diagrams: Depicts the attributes, methods and relationships amongst all classes of objects for the area in question. Normalization: Groups attributes into logical units based upon established rules of normalization. The most common, desired in 3rd normal form.
8	Apply Decision Analysis	Decision Analysis is a formal, structured approach to determine the most desired opportunity from candidate opportunities.
9	Analyze Documents	Document analysis determines requirements by studying existing documents and extracting data, functions, business rules, interfaces, and constraints.
10	Estimate Effort, Duration and Cost	There are eleven recognized techniques: Analogous, Parametric, Bottom-up, Rolling Wave, 3-point, Vendor Bid, Historic Analysis, Expert, Delphi, Function Points, and Comparison to closed projects. You should have experience in a minimum of five of them.
11	Perform Focus Groups Studies	Focus groups are a means to capture ideas and attitudes about products, opportunities, or services. The group is often not part of the company , but they do have an interest in the topic.
12	Decompose Requirements	Decompose business requirements into functional, informational, performing, constraining, and subjective requirements.
13	Identify Interfaces (aka: System Usage Matrixes)	A table showing the interaction between all impacted systems.
14	Perform Interviews (five types)	Solicit and capture business and information system requirements through various interview techniques.
15	Identify and Evaluate Lessons Learned	Lessons learned analysis exists to compile and documents what went wrong and what went well and how this information can be used to improve the future.
16	Develop Indicators, Metrics, and Reporting	Use Structured walkthroughs, Feasibility studies, Stakeholder defined acceptance criteria, Metrics, Prototyping, etc.

What a Business Analyst Does?

	Technique	Description
17	Document Non-Functional Requirements (aka: Quality, Performance, or Service Level Requirements)	A list of measures that will be used once the solution is in production to ensure that it performs at acceptable levels. A specific statement that describes a qualitatively or quantitatively measurable behavior of the solution. They often end in "ability"; (Usability, Reliability, etc).
18	Observe the working environment	Observe the Visible, Working Components of the System and how the SMEs and users act. aka: Analysis by walking around.
19	Model the Organization	This is the use of Org models to determine who does what and how they are related to other elements of the org. This helps answer the question of "Who does what to whom, when, and why?"
20	Record Defects and Issues (aka: Problem Report	Defines an error situation that arose during a walkthrough, user acceptance testing, or during the productive use of an application.
21	Perform Process Modeling (Function Modeling)	Shows the control transfer between activities; often represented with swim lanes (aka: Activity Diagrams), Business Process Models: Documents business or system processes, data transformations, transportation, storage, and indicates the scope of the project using external entities. Work Flow Diagrams: A representation of the sequence in which people do their jobs including their interaction with or reliance upon information technology, Sequence Diagrams: A representation of communication between individual objects of an application, their creation and destruction, in the sequence in which they are carried out, Process Mini Specs: Represent the inner workings of a process typically expressed in business rules, logic or algorithms or similar tools. Context Diagram: A high-level Business Process model depicting the information exchange between various organizational units or specific individuals within the organization. CRUD Matrices: A table that shows the creation, retrieval, update and deletion of attributes of entities by processes; commonly used in affinity analysis.
22	Prototype (aka: UI, User Interface)	A representative view of the look, feel and usability of the solution, typically showing screens, reports, interaction, etc.)
23	Plan and Execute Requirements Workshops	Prepare and facilitate a Joint Application Development (JAD) session.

What a Business Analyst Does?

	Technique	Description
24	Risk Analysis	Risk analysis involves analyzing systems and projects for uncertainties that can impact an initiative, solution, or organization. Risk analysis attempts to identify, prioritize, and plans for mitigation or elimination fof the identified risks. Rist analysis requires assessment, response and costs.
25	Analyze Problem / Symptoms, AKA Root causes	Based on problem analysis, list real (business) problems, symptoms of problems, potential solutions, and out-of-scope problems which will not be solved by the project.
26	Develop Use Cases and Scenarios	USE Case: a single interaction between the user (which may be a human or another automated system) and the system in question depicting a basic course of events, alternate and exception paths with other relevant information: also has a diagram component, and is also part of UML. Scenarios: a specific example (instance) of the use case.
27	Perform Scope Modeling	Scope models are used to clearly define the scope of analysis or the scope of a project. Scope models define and bound the scope of business analysis and project. Scope models define the "complete" scope—that is, the boundaries of the scope correspond with the natural boundaries of a business domain. They can be Context Models, Events models, and Use Case Diagrams.
28	Perform Process Modeling (Function Modeling)	Shows the control transfer between activities; often represented with swim lanes (aka: Activity Diagrams), Business Process Models: Documents business or system processes, data transformations, transportation, storage, and indicates the scope of the project using external entities. Work Flow Diagrams: A representation of the sequence in which people do their jobs including their interaction with or reliance upon information technology, Sequence Diagrams: A representation of communication between individual objects of an application, their creation and destruction, in the sequence in which they are carried out, Process Mini Specs: Represent the inner workings of a process typically expressed in business rules, logic or algorithms or similar tools. Context Diagram: A high-level Business Process model depicting the information exchange between various organizational units or specific individuals within the organization. CRUD Matrices: A table that shows the creation, retrieval, update and deletion of attributes of entities by processes; commonly used in affinity analysis.
29	Model Events and States (diagrams)	Event: Represents business and/or system events with the related responses as a way of delineating the system from its environment. State: Represents the status of an object in any given point, the potential for transforming the object into a different status, and the conditions/events that can trigger the transformation.
30	Perform Structured Walkthroughs and Create Reports	Describes the process, the product, the participants, and the results of a meeting designed to identify errors or omissions in a specific deliverable, its impact, and recommended resolutions.

What a Business Analyst Does?

	Technique	Description
31	Create and Analyze Surveys and Questionnaires (closed and open)	This is a set of questions for stakeholders and SMEs. The results are analyzed and distributed to other parties for confirmation.
32	Perform SWOT Analysis	Identify strengths, weaknesses, opportunities, and threats and propose improvements in how the organization could use its information resource.
33	Manage User Stories Workshop	These are descriptions of functionality written by and valuable to the customer. They is used to extract requirements and use cases.
34	Vendor Assessment	If solutions are provided by external vendors or the solution is outsourced, then there may be specific requirements related to the involvement and relationships of the vendor. There could be requirements of the vendor to prove financial security, meeting specific staffing levels, to identify appropriately skilled staff, to meet regulatory compliance, etcetera. Non-functional requirements are often used to define the service levels requirements. You should be able to create and evaluate the responses to these documents, RFI, Request for Information, RFQ, Request for Quote, and RFP, Request for Proposal. Vendor assessment is conducted to ensure that the vendor is reliable and that service levels will meet an organization's expectations.
35	RACI Matrix	The RACI matrix describes the roles of those involved in business analysis activities. It describes stakeholders as having one or more of the following responsibilities for a given task or deliverable:
36	Stakeholder Map	Stakeholder maps are visual diagrams that depict the relationship of stakeholders to the solution and to one another. There are many forms of stakeholder map, but two common ones include:
37	Variance Analysis	The purpose of this technique is to analyze discrepancies between planned and actual performance, determine the magnitude of those discrepancies, and recommend corrective and preventive action as required. Variances can be related to planned versus actual estimates, cost, scope, product expectations, or any measures that have been established during the planning process.
38	Baselining	Once requirements are approved, they may be baselined, meaning that all future changes are recorded and tracked, and the current state may be compared to the baselined state. Subsequent changes to the requirement must follow the change control process.
39	Signoff	Requirements signoff formalizes agreement by stakeholders that the content and presentation of documented requirements is accurate and complete. A formal sign-off of requirements documentation may be required by organizational standards or for regulatory reasons

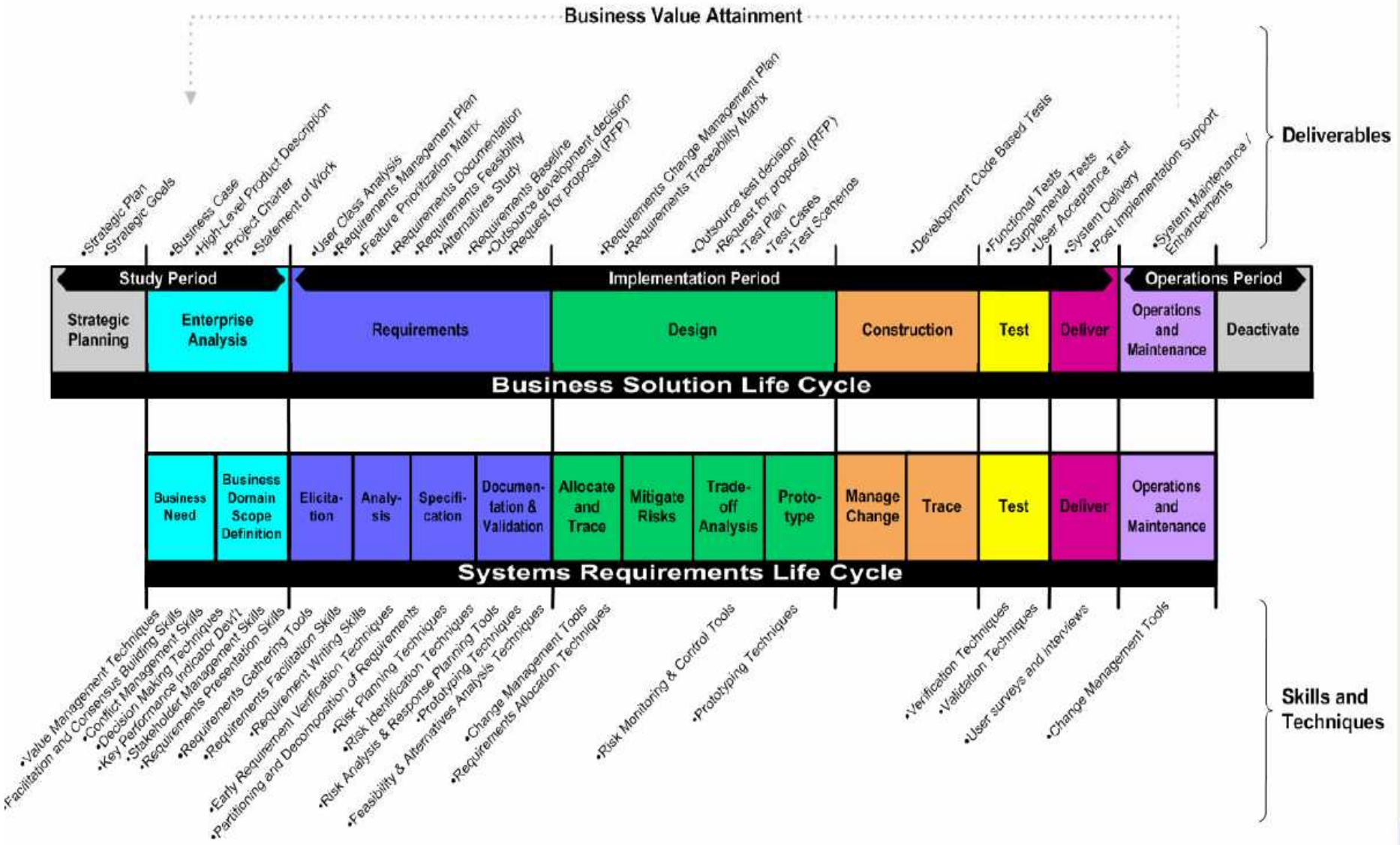
What a Business Analyst Does?

	Technique	Description
40	Coverage Matrix	A coverage matrix is a table or spreadsheet used to manage tracing. It is typically used when there are relatively few requirements or when tracing is limited to high-level requirements (e.g. features or models).
41	Feasibility Analysis	For small, relatively straightforward efforts, the solution approach can be determined by the business analyst alone or with a small team of experts examining the approaches in an informal working session. For larger change initiatives requiring significant investment, a more formal feasibility study may assist with determining the most viable solution option.
42	Problem or Vision Statement	A problem or vision statement states the business need, identifies key stakeholders, and briefly describes the positive impact that meeting the business need will have on those stakeholders.
43	MoSCoW Analysis	MoSCoW analysis divides requirements into four categories: Must, Should, Could, and Won't.
44	Timeboxing/Budgeting	Timeboxing or budgeting prioritizes requirements for investigation and implementation based on allocation of a fixed resource. It is used when the solution approach has been determined. Timeboxing prioritizes requirements based on the amount of work that the project team is capable of delivering in a set period of time. By contrast, budgeting is used when the project team has been allocated a fixed amount of money. The approach is most often used when a fixed deadline must be met or for solutions that are enhanced on a regular and frequent basis. There are a number of approaches that can be taken to determine which requirements can be included in a timeboxed iteration:
45	Voting	Voting is a prioritization method that allocates a fixed amount of resources (votes, play money, or other tokens) to each participant for them to distribute among proposed features or requirements.

What a Business Analyst Does?

	Technique	Description
46	Checklists	Checklists are useful as a quality control technique for requirements documentation. They may include a standard set of quality elements that the business analyst or other reviewers use to validate the requirements or be specifically developed to capture issues of concern to the project. The purpose of a checklist is to ensure that items that the organization or project team has determined are important are included in the final requirements deliverable(s), or that process steps that the organization or project team has determined must be followed are addressed. Checklists may also be developed on a project basis to help ensure consistency of approach and outcomes, particularly on large projects where multiple sub-project teams are working.
47	Force Field Analysis	Force field analysis is a graphical method for depicting the forces that support and oppose a change. It involves identifying the forces that support and oppose a change, depicting them on opposite sides of a line, and then estimating the strength of each force in order to assess which set of forces are stronger. Once this analysis is complete, the next step is to look for ways to strengthen the forces that support the desired outcome or generate new forces.
48	Requirements Documentation	Requirements are frequently captured in a formal document. Many templates for requirements document exist and are in common use. The selection of templates and documents is dependent on the business analysis approach chosen.
49	Requirements for Vendor Selection	If the solution team thinks that a potential solution is available from an outside party, the business analyst may capture the requirements in the form of a Request for Information (RFI), Request for Quote (RFQ), or Request for Proposal (RFP).

Business Solution Life Cycle



Risk

Appendix 1

Enterprise Analysis – Risk

Project Type Project Attribute	Small, Low Risk (SMALL)	Low-to-Moderate Risk (MEDIUM)	Significant, High Risk (LARGE)
Estimated Elapsed Time	< 6 Months	6 – 12 Months	12 - 24 Months
Timeframe	Schedule is Flexible	Schedule can undergo minor variations, but deadlines are firm	Deadline is fixed and cannot be changed. Schedule has not room for flexibility
Complexity	Easily understood problem and solution. The solution is readily achievable	Either difficult to understand the problem, the solution is unclear or the solution is difficult to achieve	Both problem and solution are difficult to define or understand and the solution is difficult to achieve
Strategic Importance	Internal interest only	Some direct business impact and/or relates to a low priority	Affects core service delivery and/or directly relates to key initiatives
Level of Change	Impacts a single business unit	Impacts a number of business units	Enterprise impacts
Dependencies	No major dependencies or inter-related projects	Some major dependencies or inter-related projects, but considered low risk	Major high-risk dependencies or inter-related projects

Enterprise Analysis – Risk

- Significant, high-risk projects are likely to need robust
  - **Enterprise Analysis performed by a core team of subject matter experts and facilitated by the Business Analyst.**
  - **Referencing the Project Sizing Grid, significant high-risk projects are characterized by:**
    - **Level of Change = enterprise impacts; or**
- Low-to-moderate risk projects are likely to need a more moderate amount of enterprise analysis performed by the Business Analyst prior to investment Significant,
  - **Referencing the Project Sizing Grid, low-to-moderate risk projects are characterized by:**
    - Four or more categories in the Medium column; or
    - One category in Large column and three or more in Medium column

Enterprise Analysis – Risk

- Small, low risk projects are likely to need little or no enterprise analysis performed by the Business Analyst prior to investment
  - **However, decisions to invest in even small projects should be made based on a cost vs. benefit analysis to ensure the project will add value to the organization.**
  - **Referencing the Project Sizing Grid, low-to-moderate risk projects are characterized by the remaining combinations.**

Other Important Reference Materials

http://images.globalknowledge.com/wwwimages/whitepaperpdf/WP_ExecutiveGuide_BAPMTerms.pdf
http://www.xelaration.com/presentations_baworld/business_analysis_best_practices_of_the_unified_process.pdf