

Course: Software Business analysis

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Module 1:

Fundamentals of Business Analysis

Section Learning Objectives

- The learning objectives for this section are:
 - Key concepts of Business Analysis
 - Business analysis standards
 - Business analyst roles and responsibilities in organization, programs, projects
 - Main knowledge areas in Business analysis
 - Main competencies of a Business analyst
 - Overview on the Business Analysis Activities

Polling Question



The PMI *Pulse of the Profession*[®] report identified inaccurate requirements gathering as a primary cause of project failure. What percentage was reported?

- A. 16%
- B. 24%
- C. 34%
- D. 37%

* PMI's annual global *Pulse of the Profession*[®]

Polling Question



What percentage of organizations have the necessary resources in place to properly address requirements management activities?*

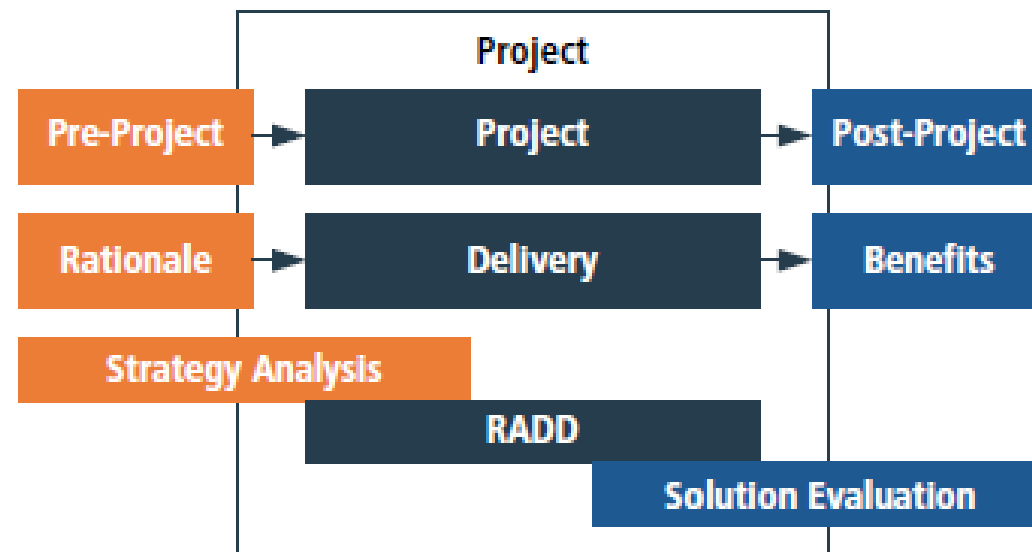
- A. 65%
- B. 82%
- C. 74%
- D. 49%

*PMI's Pulse of the Profession® In-Depth Report *Requirements Management a Core Competency for Program and Project Success*

Key concepts of Business analysis

“Business Analysis is the practice of enabling change in an enterprise by defining needs and recommending solutions that deliver value to stakeholders. Business Analysis enables an enterprise to articulate needs and the rationale for change, and to design and describe solutions that can deliver value”.

Figure 1.1.1: Business Analysis Beyond Projects



Key concepts of Business analysis

- Business analysis may be performed on a variety of initiatives within an enterprise - could be in the boundaries of a project or throughout enterprise evolution and continuous improvement.
- It can be used to understand the current state, to define the future state, and to determine the activities required to move from the current to the future state.

Group discussion

- Are we are doing the **right tasks** and are we do the **tasks right**?

Purpose of a Business Analysis Standard

- To define the profession of business analysis
- Provide a description of generally accepted practices in the field
- Help those who employ business analysts to understand what skills to expect
- Describe practices in use by a majority of business analysis practitioners

Business Analysis Standards

- **International Institute of Business Analysis™(IIBA®)** is a non-profit professional association with the purpose of supporting and promoting the discipline of business analysis.
 - **ECBA - Entry Certificate in Business Analysis**
 - **CCBA - Certification of Capability in Business Analysis**
 - **CBAP - Certified Business Analysis Professional**

- **Project Management Institute (PMI®)** is a non-profit professional association for project professionals. PMI services practitioners and organizations by providing standards and certifications to improve project performance and success rates.
 - **PMI Professional in Business Analysis (PMI-PBA)**



International Institute
of Business Analysis™



Business Analysis Standards

- **International Qualification Board for Business Analysis (IQBBA)** is an international and independent standard-giving body for business analysis and a special interest group (SIG) in the international organization GASQ - Global Association for Software Quality.
 - Certified Foundation Level Business Analyst (CFLBA)
 - Certified Advanced Level Business Analyst (CALBA)
 - Certified Agile Business Analysis (CABA)



**Certified Foundation Level
Business Analyst**

The Definition of a Business Analyst

“Any person who performs business analysis, no matter their job title or organizational role.”

BABOK® Guide, version 3

The Business Analyst (BA) is a person responsible for identifying business needs of stakeholders and for determining solutions to business problems with the aim of introducing change which adds value to the business. As mentioned in the BABOK Guide, the Business Analyst is someone who “helps organization change”.

Business analysis perspectives

- **The Agile Perspective:** Describes the business analysis when practiced in the context of agile environments.
- **The Business Intelligence Perspective:** Describes the business analysis when practiced in the context of transforming, integrating, and enhancing data.
- **The Information Technology Perspective:** Describes the business analysis when undertaken from the point of view of the impact of the change on information technology systems.
- **The Business Architecture Perspective:** Describes the business analysis when practiced in the context of business architecture.
- **The Business Process Management Perspective:** Describes the business analysis when practiced in the context of developing or improving business processes

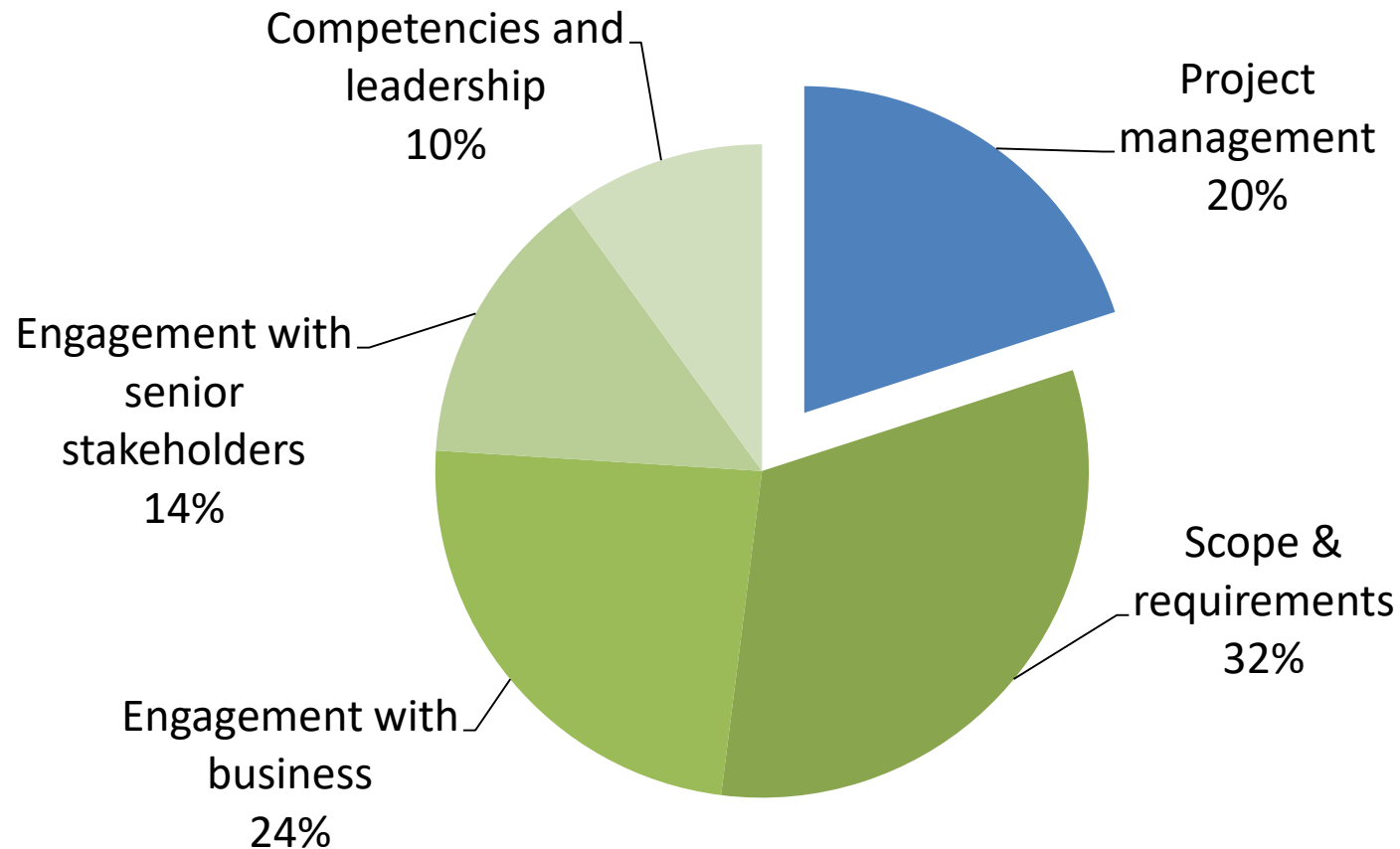
Group discussion

Which perspective do you have experience with?

The Role of the Business Analyst

- Business analysts play a role in aligning the designed and delivered solutions with the needs of stakeholders.
- Common job titles for people who perform business analysis include:
 - Product owner
 - Requirements engineer
 - Systems analyst
 - Process analyst
 - Business architect
 - Business systems analyst
 - Data analyst
 - Enterprise analyst
 - Management consultant
 - Product manager

A Business Analyst can influence project success factors



CHAOS report, Standish Group

Business analyst roles and responsibilities in organization, programs, projects

- A Business Analyst working at the organization level is typically responsible for collecting business needs and/or opportunities from the business environment
- A Business Analyst working at the program/project level can facilitate the delivering the agreed business solution.
- In the context of program/project role in Agile environment, BA role can be compared to the Product Owner.

Business analyst roles and responsibilities in organization, programs, projects (Cont.)

- The activities of the Business Analyst may vary depending on his role and scope of responsibility.
- Business Analysis tasks may differ depending on the product life cycle
 - Initial phase - needs and proposing a solution,
 - During solution development – help the team to build the right solution.
 - Released product/working in production -monitoring and improving its efficiency, and introducing changes where necessary.

BA Role vs. PM Role

- The Project Manager ensures PROJECT progress against schedule, risk management and mitigation, and delivering of the product of the project on time, within budget, and to specified quality standards.
- The Business Analyst, ensures that the PRODUCT of the project is well-defined throughout the project and meets the targeted business needs through expert requirements management, systems analysis, business analysis, and requirements analysis.

Polling Question



Which is not a necessary competency needed by a Business Analyst?*

- A. Project Management
- B. Business Knowledge
- C. Communication Skills
- D. Interaction Skills

*According to *BABOK Guide*[®], version 3

Test Your Analytical Ability



There are five people of different heights. Allen is taller than Dale who is taller than Earl. Carla is shorter than Bill, but taller than Allen.

Who is the third tallest person?

- A. Carla
- B. Dale
- C. Earl
- D. Allen
- E. Bill

Critical Thinking Mindset



Main competencies of a Business analyst

- The Business Analyst needs the following competencies to effectively understand and work within the defined environment:
 - Analytical thinking and problem-solving skills
 - Behavioral characteristics
 - Business knowledge
 - Basic technical knowledge
 - Interaction skills
 - Communication skills
 - Negotiation skills and diplomacy
 - Some level of managerial skills
 - Creativity

Communication Skills

- Comfortably use different types of communication methods:
 - **Verbal** - use spoken words to convey information
 - **Non-Verbal** - body movement, posture, facial expressions, gestures, and eye contact
 - **Written** - use text, symbols, models (formal or informal), and sketches to convey and share information
 - **Listening** - listen and understand information

Responsibilities of a BA

- Analyze and understand the business problems
- Elicit and document requirements
- Communicate effectively (written and spoken)
- Manage client relationships
- Facilitate discussions
- Negotiate and build consensus
- Model data and processes
- Plan and manage activities
- Facilitate and develop business strategy
- Understand and manage organizational change

Main knowledge areas in Business analysis

- Specific activities of Business Analysis are collected within knowledge areas (KAs).
- Comparison between IIBA and IQBBA

IIBA proposes the following KAs:

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

IQBBA proposes the following KAs:

- Strategy definition
- Management of Business Analysis process
- Requirements Engineering in Business Analysis
- Solution evaluation and optimization

Benefits of Business Analysis

○ Benefits of Business Analysis

- Ultimately, business analysts want to achieve the following outcomes:
- Reduce waste
- Create solutions
- Increase solution value
- Complete projects on time
- Improve efficiency
- Document the right requirements
- Identify the root causes of problems

Challenges of Business Analysis

- Lack of clarity in the scope of the business functions
- Business requirements not well-managed
- Conflict between business groups
- Business analysts not brought on to the project early enough
- Insufficient time allocated to requirements work
- Stakeholders not knowing what they want/need

Terms and Definitions : Requirements

- **Requirement:**

- (1) A condition or capability needed by a user to solve a problem or achieve an objective.*

- (2) A condition or capability that must be met or possessed by a system or system component to satisfy a contract, standard, specification, or other formally imposed documents.*

- (3) A documented representation of a condition or capability as in (1) or (2) [IEEE 610].*

- Requirements are the foundation of solution scope and design.

- Requirements are typically classified into categories to allow better management.

Requirements are Key

- Because the requirements are the foundation for the future solution development work, a thorough and unambiguous understanding of the requirements is vital to ensure that everyone is aware of what is expected from the solution.

Elicitation Resources

The elicitation process involves:

- The participation of domain-experts to ensure that the requirements have been accurately provided and understood
- A strong business analyst (or BA team) with sufficient facilitation, elicitation, and documentation experience.

Common Problems with Requirements

Written requirements are often:

- Ambiguous
- Conflicting
- Not measurable
- Not agreed upon
- Not timely (realistic)
- Not prioritized – the “Must Haves” are not easily identified from the “Nice to Haves”?

Discussion – Requirement Problems



What do you think are some of the reasons for why these requirements problems exist?

Business need

- Before requirements are elicited, the business analyst must work with the sponsor and key stakeholders to define the business need.
- The business need states why a change to the enterprise and supporting organizational systems is required
- The business need defines the problem that the business is solving or the opportunity they are pursuing
 - Defining the business need is one of the most **critical steps** in the business analyst process!

Define the Business Need

- The business need serves as a starting point to further business analysis work which is pursued to better understand the need.
- Defining the business need is a critical step because the business need determines:
 - Which areas of the enterprise to analyze,
 - Which stakeholders will be consulted, and
 - Which solution options will be evaluated.

Discussion - Business Needs



- Give an example of what happened on one of your projects when the business need was not clearly identified and defined.
- What were the reasons why the business need was not understood or clearly articulated?
- What might have been done differently to have avoided the issue?

Understanding Why

- Before pursuing any changes, the enterprise must understand 'why' change is needed.
- The definition of the business need provides the context that supports the 'why'.
- If the business need is not understood, the proposed change will be misdirected.
- Requirements elicitation is dependent on correctly identifying and understanding the need

Situation Statements

- A business need can be stated in the form of a 'situation statement'.
- The situation statement provides a format which guides a clear definition of the problem or opportunity.
- Various formats exist. One common format is:
 - The problem/opportunity of < >
 - Is having the effect of < >
 - Resulting in the impact of < >

Moving from Situation Statement to Requirements

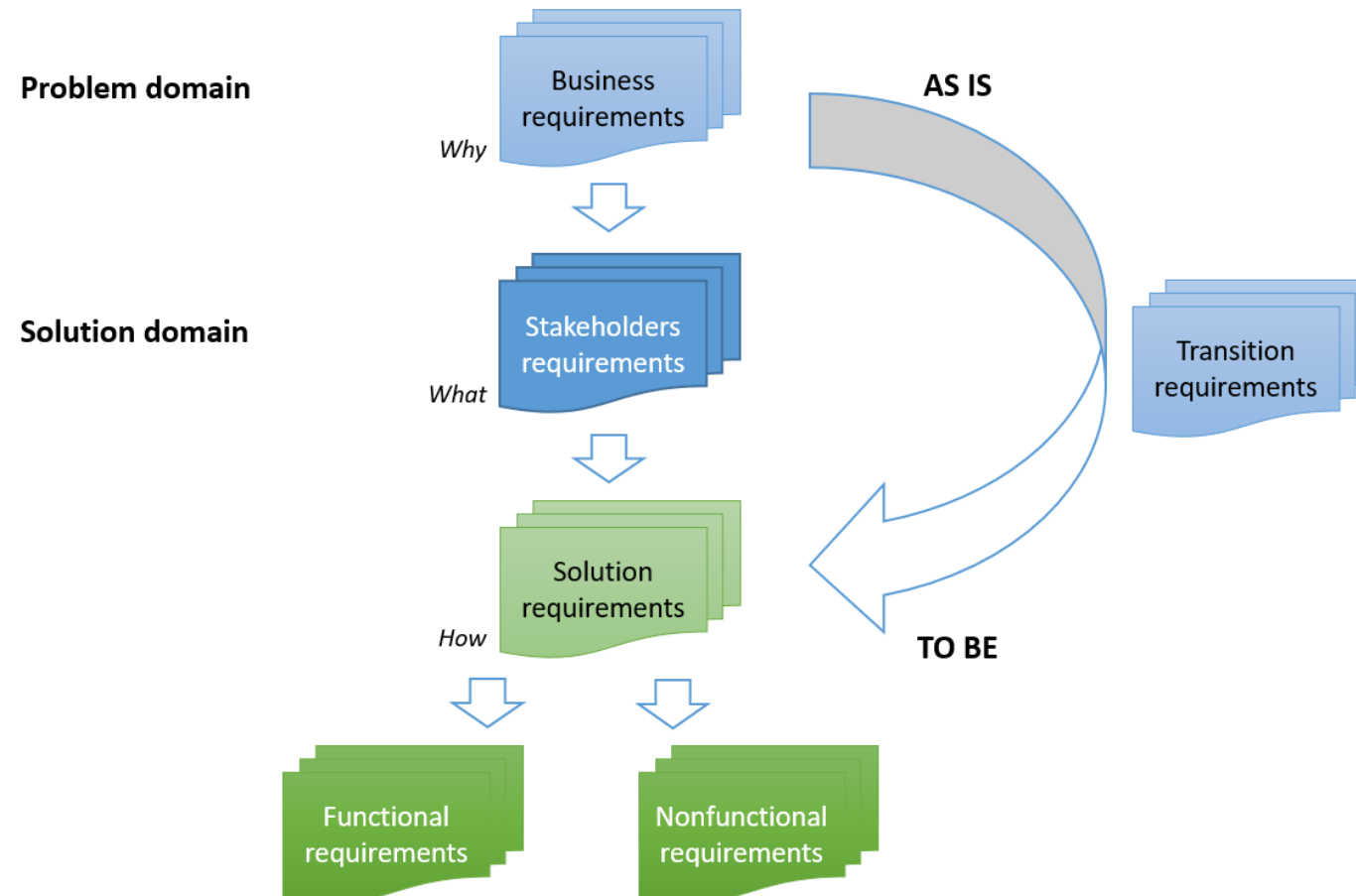
As more information is discovered about the business need and ultimately the solution, requirements progress from high level statements into detail level statements of the features/functions the solution must deliver.

Terms and Definitions : Requirements

- The BABOK Guide proposes the following classification, representing the abstraction levels for requirements:
 - Business requirements
 - Stakeholder's requirements
 - Solution requirements
 - Functional requirements
 - Non-functional requirements
 - Transition requirements

What else can be captured?

Levels of requirements



Examples of Requirement Types

BUSINESS

- Reduce the number of misspelled words in corporate communications

USER

- Find spelling errors.
- Maintain a global dictionary.

FUNCTIONAL

- The spell checking function shall find & highlight misspelled words.
- The spell checking function shall display a dialog box with suggested replacements

NON-FUNCTIONAL

- The spell checker shall highlight a misspelled word within 1 second of detection

Meaning of different types of requirements

- **Business requirements** – the highest level of requirements, developed during Strategy Definition activities. Business requirements define the high-level goals, objectives and needs of the organization.
- **Stakeholder requirements** – elaboration of business requirements, defining the needs of stakeholders and how they will interact with a solution.
- **Transition requirements** – the solution capabilities required to transition from the current to the future state and are no longer needed once the transition is complete
- **Solution requirements** – the most detailed type of requirements describing the solution characteristics that will be needed to meet the higher-level business and stakeholder requirements.
 - **Functional requirements** – the capabilities that a product must provide to its users
 - **Non-functional requirements** – quality attributes, design and implementation constraints and external interfaces that must be possessed by the product

Business Requirements

- Describe in business terms *what* must be delivered or accomplished to provide value.
- Business requirements are usually expressed in terms of broad outcomes the business requires, rather than specific functions the system may perform.
- Documented in some form of a project initiation document. Specific design elements are usually outside the scope of this document, although design standards may be referenced

Polling Question

Which of the following is a business requirement?



- A. When a user leaves the website with items left in their shopping cart, the system shall send an email reminder to them after 3 hours
- B. The system shall be able to handle 500 concurrent users
- C. Customers who renew memberships during the early-bird period will receive a 10% discount on any event they attend
- D. Our company needs to increase its use of renewable energy by 25%.

Stakeholder/User Requirements

- Statements of the needs of a particular stakeholder or class of stakeholders
- The needs that a given stakeholder has and how that stakeholder will interact with a solution
- Serve as a bridge between *business requirements* and the various categories of *solution requirements*
- Are statements of the needs of the actual end-users of the solution
- There may be conflict between different stakeholder groups



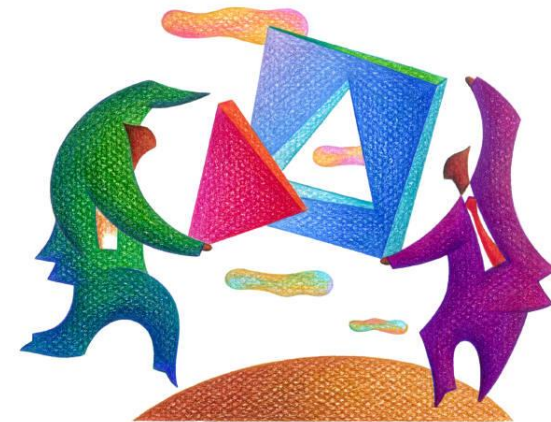
Stakeholder/User Requirements Examples

- *All measurements on blueprints must be expressed in units adhering to local standards. For example, US blueprints must show feet & inches. Canadian blueprint measurements must be provided with measurements in metric units*
- *The customer service representative must have access to zip code information and the customer's home address in order to be able to tell the customer the closest service location to their home*



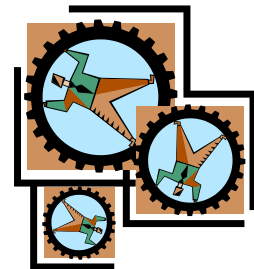
Solution Requirements

- A characteristic of a solution that meets the business and stakeholder requirements
- Solution requirements are divided into:
 - Functional Requirements
 - Non-Functional Requirements



Functional Requirements

- The behavior and information that the solution will manage
- Behaviors or operations the solution (system) must perform – actions or responses
- **WHAT** the user or solution needs to DO to accomplish a task
- **Example:** *The system must have a display screen the user can access from the main menu which shows order status information*



Non-functional Requirements

- Capture conditions that do not directly relate to the behaviour or functionality of the solution, but rather describe environmental conditions under which the solution must remain effective
- Refer to qualities that the solution must have, such as performance, usability, capacity, speed, security, or availability
- Also called quality of service requirements

Example: *The system must be available to users across all continental time zones, restricting scheduled maintenance windows to 3 am – 6 am Eastern Time Sunday*



Non-Functional Examples

Nonfunctional Requirements

1. Operational Requirements

- 1.1 The system will operate in Windows and Mac environments
- 1.2 The system will be able to read and write MS Word documents, RTF, and HTML
- 1.3 The system will be able to import .gif, .jpeg, and .bmp graphics files

2. Performance Requirements

- 2.1 Response times must be less than 7 seconds
- 2.2 The Inventory database must be updated in real time

3. Security Requirements

- 3.1 No special security requirements are anticipated

4. Cultural and Political Requirements

- 4.1 No special cultural and political requirements are anticipated.

Terms and Definitions : Requirements

- IQBBA extends the above classification to add information supporting solution design and requirements management:
 - Business constraints
 - Solution constraints
 - Business assumptions
 - Technical assumptions

Overview on the Business Analysis Activities

- Strategy definition
 - Internal analysis
 - External analysis
 - Business need definition
 - Gap analysis
 - Solution proposal (including feasibility analysis)
 - Solution delivery or maintenance program/project initiation
- Management of Business Analysis processes
 - Business Analysis process definition (for organization, program, project or other forms of change development or implementation works etc.)
 - Communication planning
 - Work products management
 - Tools and techniques selection

Overview on the Business Analysis Activities (Cont.)

- Requirements Engineering in Business Analysis
 - **Requirements Management**
 - Requirements communication
 - Requirements tracing
 - Requirements configuration and change management
 - Requirements quality assurance
 - **Requirements Development**
 - Requirements elicitation including stakeholders and/or product requirements development
 - Requirements analysis and specification
 - Solution modeling
 - Requirements validation and verification
- Solution evaluation and optimization
 - Assessing the solution options (proposals)
 - Evaluating performance of the solution
 - Solution/business process optimization

Work products of Business Analysis activities

○ Strategy definition

- List of stakeholders
- Business processes
- Gaps
- Market research results
- Business needs
- Business requirements
- Solution options
- List of business risks
- Opportunities
- Business constraints
- Business case

○ Management of the Business Analysis process

- Business Analysis approach
- Communication plan
- Business Analysis assets (templates, etc.)
- Quality gates for requirements and/or solution design



Work products of Business Analysis activities (Cont.)

- Requirements Engineering in Business Analysis
 - Stakeholder requirements
 - Solution/product requirements
 - Solution constraints
 - Solution design options
 - RTM (Requirements Traceability Matrix)
 - Requirements configuration
- Solution evaluation and optimization
 - Solution performance assessment
 - Improvement plan



Section Learning Objectives Reflection

Key concepts of Business Analysis

- Business analysis standards
- Business analyst roles and responsibilities in organization, programs, projects
- Main knowledge areas in Business analysis
- Main competencies of a Business analyst
- Overview on the Business Analysis Activities
- Exam questions