What is Business Analysis?

The practice of enabling change in an organizational context, by defining needs and recommending solutions that deliver value to stakeholders.

disciplined approach

Business analysts identify and define the solutions that will maximize the value delivered by an organization to its stakeholders

Business analysts work across all levels of an organization and may be involved in everything from defining strategy, to creating the enterprise architecture, to taking a leadership role by defining the goals and requirements for programs and projects or supporting continuous improvement in its technology and processes.

Business Analysis is the set of tasks, knowledge, tools and techniques required to identify business needs and determine solutions to business problems [BABOK]

BA Solutions may include:

- Development of software systems
- Development of software components
- Extensions of existing software
- Improvements to the business process
- Changes to the organization

Role of BA in project phases

Supporting implementation work in order to ensure developers understand and implement the requirements properly

Business Analyst supports the project from the beginning through the system deployment (and sometimes to the system retirement).

Role of BA in project phases (cont)

Supporting testing, for example by validating test cases in order to ensure that testing will adequately cover all the requirements

Analyzing and documenting change requests for the requirements

Processing new requirements (new regulations, standards, etc.)

Processing the requests to fulfill new needs requested by the customer or user

What is an artefact?

Final or intermediate work products that are produced and used during a project

Might describe the function, architecture, and design of software

Might be concerned with the process of development itself, such as project plans, business cases and risk assessments

Should use version control

Should be correctly traced to their origin

What is a Business Goal?

A Business Goal is a short- or long-term objective of an organization. Business Goals should be characterized by the following qualities

- Specificity
- Optimism
- Realism
- Both short- and long-term scope

Setting Business Goals is important because:

What is a Business Goal? (cont)

- The organization needs to have a vision of what it wants to accomplish. This is facilitated by having clearly stated goals, along with establishing time periods in which they need to be achieved
- It keeps a clear picture of what the organization is trying to do with the business, and helps focus motivation
- It allows the organization to understand and maintain a commitment to the business' main objectives
- It provides a metric against which to measure the organization's progress

SMART

SMART is a system and a tool that is used to establish goals and define their quality objectives. SMART requires that all goals have the following characteristics

- Specific
- Measurable
- Attainable
- Relevant
- Timely

What is a requirement?

A condition or capability needed by a stakeholder to solve a problem, or achieve an objective.

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

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What is a requirement? (cont)

A documented representation of a condition or capability

Requirements are the foundation of systems, or system components. They can be obligatory (required functions, constraints, etc.), essential for the software to perform its functions, and meet the expectations and needs of the intended stakeholders

Requirements should be placed into one of the following categories

- Business requirements
- User requirements
- Functional requirements
- Non-functional requirements

Purpose of requirements:

- Provide a foundation for assessment, planning, execution and monitoring of the project activities
- Define customer expectations (expressed as real requirements and stakeholder's value of those requirements)
- Serve as a component of agreements, orders, project plans
- Establish system boundaries, scope of delivery, and the services classification of the requirements

Requirement classifications

Process requirements

- describe needs and limitations of the business processes
- Costs
- Marketing
- Processing time

What is a requirement? (cont)

- Sales and distribution
- Organisation
- Documentation

Product requirements

- functional and non-functional product requirements
- POV of customer and team

Types of requirement

- Customer requirements
- Solution or system requirements
- Product or component requirements

Requirement Analysis

Elaborate the solution definition in order to enable the project team to design and build a solution that will meet the needs of the business and stakeholders

Task: 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.

Inputs: Business Case, Solution Scope, Requirements

Outputs: Structured requirements

Task: Prioritize Requirements

Determine the business priority of requirements (including voting, ranking, benefit analysis and so forth). Identify logical dependencies between requirements and requirements packages.

Inputs: Requirements, Business Case

Outputs: Prioritized requirements

Task: Specify and Model Requirements

Requirement Analysis (cont)

Describes standard practices for writing textual requirements and creating models or diagrams. Specific models are addressed as techniques. Includes capturing the requirements attributes

Inputs: Requirements

Outputs: Specified or modeled Requirements

Task: Determine Assumptions and Constraints

Identify stakeholder requests that are not properly requirements but based on assumptions regarding what the solution team is capable of delivering

Capture and assess these requests

Outputs: Assumptions and Constraints

Task: Verify Requirements

Outputs: Verified requirements

Task: Validate Requirements

Validate that a requirement will satisfy a business need.

Outputs: Validated requirements

Elicitation

Business Requirements Elicitation is defined as a set of approaches, techniques, activities, and tasks used to capture the business requirements of a planned solution from the stakeholders and other available sources [

Purpose: Explore, identify and document stakeholder needs. Orienting the requirements toward the project vision. Excluding features that the customer does not want and need

Describes how we work with stakeholders to find out what their needs are and ensure that we have correctly and completely understood their needs.

Task: Prepare for Elicitation

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Elicitation (cont)

Purpose: Prepare for elicitation by ensuring all needed resources are organised and scheduled for conducting the elicitation activities

Outputs

- Scheduled resources
- Supporting materials

Task: Conduct Elicitation

Meet with stakeholder(s) to elicit information regarding their needs

Outputs

Elicitation activity results

Assumptions, constraints, risks, issues

Documentation based on technique (e.g., interview notes, workshop results, survey responses, etc.)

Task: Document Elicitation Results

Purpose: Record stakeholder info for use in analysis.

Outputs: Stated requirements

Task: Confirm Elicitation Results

Purpose: Play back the requirements to validate that the stakeholder's intentions have been correctly captured and understood.

Outputs: Validated stated requirements

Techniques

Questionnaires

Interviews

Self-recording

Reviewing existing documents

Reusing a specification from a previous project

Brainstorming

Field observation

Apprenticing

Elicitation (cont)

Conducting workshops to refine the requirements after each iteration

Requirements Elicitation should apply to enterprise requirements as well as user or customer requirements.

Requirement characteristics

Functionality

Reliability

Usability

Efficiency

Maintainability

Portability

What is a stakeholder

Any person involved in, or with an interest in, a project

Stakeholders on the vendor side

Project Managers

Business and System Analysts

Developers and Architects

Database designers

GUI designers

Technical writers

Testers and Quality Assurance staff

Installation and Operations personnel

Stakeholders on the customer side

Customer representatives (i.e., "Business")

Project sponsors

End users (from the customer company)

Installation and Operations personnel

External stakeholders may be:

End users who are not a part of the customer's organization

Other organizations (e.g., regulatory entities)

Stakeholder Identification Problems

A lack of understanding of the real operators of the business processes in the organization

Unclear definition of responsibilities within the customer's organization

Excluding stakeholders who are not clearly and directly related to the process

Incomplete analysis resulting in missing processes and activities, and the related stakeholders

Business Analysis Communication Planning

The main purpose of planning the Business Analysis communication is to define how to receive, distribute, access, update and escalate information to and from the project stakeholders, as well as how to organize the schedule and structure of the communication within a project.

Business Analysis is the starting point for designing and implementing a software solution. Its deliverables are inputs to many other project phases and processes, such as establishing the system architecture that will allow meeting the business goals, creating detailed functional and non-functional system specifications, and planning and executing QA activities.

Outputs from the Business Analysis are also inputs to system acceptance testing, which is the final check before the production release.

System acceptance testing is conducted to verify that the software is working as expected, and is needed in order to realize its goals (i.e., improving efficiency of performing the business process

BA provides info to the following

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Business Analysis Communication Planning (cont)

- Project management (scope planning, scheduling, and estimating development and testing)
- Systems analysis
- Design (system specification and architecture)
- Implementation
- Testing

Common methods of communication include:

- Workshops
- Presentations
- Reviews

Factors to be Considered

- Type of project
- Communication formality
- Communication frequency
- Geographical location
- Culture

Common BA techniques

Brainstorming

CATWOE (Clients, Actors, Transformation, Worldview, Owner, Environmental constraints)

Data Flow Diagrams

Five Why's

Functional decomposition

Interviews

MoSCoW

PESTLE (P for Political, E for Economic, S for Social, T for Technological, L for Legal and E for Environmental)

MOST (Mission, Objectives, Strategies, Tactics)

Prototyping

Requirements Workshops

Common BA techniques (cont)

Risk Analysis

Scenarios and Use Cases

SWOT

User stories

Principles for Successful Requirements

1. Understand the top level critical objectives
2. Think stakeholders, not just users and customers
3. Focus on the required system quality, not just its functionality
4. Quantify quality requirements as a basis for software engineering.
5. Don't mix ends and means
6. Capture explicit information about value.
7. Ensure there is "rich specification"; requirement specifications need much more information than just the requirement itself.
8. Carry out specification quality control (SQC).
9. Consider the total lifecycle and apply systems-thinking, not just a focus on software
10. Recognize that requirements change; use feedback and update requirements as necessary.

Acceptance and Evaluation Criteria

Acceptance criteria are used to define the requirements, outcomes, or conditions that must be met in order for a solution to be considered acceptable to key stakeholders. Evaluation criteria are the measures used to assess a set of requirements in order to choose between multiple solutions

Define measures of value attributes to be used for assessing and comparing solutions and alternative designs

Measurable and testable criteria allow for the objective and consistent assessment of solutions and designs

Acceptance criteria describe the minimum set of requirements that must be met in order for a particular solution to be worth implementing. They may be used to determine if a solution or solution component can meet a requirement.

Acceptance criteria are typically used when only one possible solution is being evaluated, and are generally expressed as a pass or fail

Valuation criteria define a set of measurements which allow for ranking of solutions and alternative designs according to their value for stakeholders.

Attributes that cannot be measured directly are evaluated using expert judgment or various scoring technique

Elements

Value attributes

- are the characteristics of a solution that determine or substantially influence its value for stakeholders

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Acceptance and Evaluation Criteria (cont)

- represent a meaningful and agreed-upon decomposition of the value proposition into its constituent parts, which can be described as qualities that the solution should either possess or avoid

examples

ability to provide specific information

ability to perform or support specific operations

performance and responsiveness characteristics

applicability of the solution in specific situations and contexts

availability of specific features and capabilities

usability, security, scalability, and reliability

Assessment

In order to assess a solution against acceptance or evaluation criteria, it must be constructed in a measurable format

Evaluation criteria provide a way to determine if features provide the value necessary to satisfy stakeholder needs.

The criteria are presented as parameters that can be measured against a continuous or discrete scale.

Acceptance criteria are expressed in a testable form

Acceptance criteria are presented in the form of statements which can be verified as true or false. This is often achieved through user acceptance testing (UAT)

Usage Considerations

Acceptance and Evaluation Criteria (cont)

Agile methodologies may require that all requirements be expressed in the form of testable acceptance criteria

Acceptance criteria are necessary when the requirements express contractual obligations

Acceptance criteria provide the ability to assess requirements based on agreed-upon criteria

Evaluation criteria provide the ability to assess diverse needs based on agreed-upon criteria, such as features, common indicators, local or global benchmarks, and agreed ratios

Evaluation criteria assist in the delivery of expected return on investment (ROI) or otherwise specified potential value

Evaluation criteria helps in defining priorities

Limitations

Acceptance criteria may express contractual obligations and as such may be difficult to change for legal or political reasons

Achieving agreement on evaluation criteria for different needs among diverse stakeholders can be challenging.

What is a business analyst?

A person responsible for:

identifying the business needs of the customer (external or internal) and other stakeholders

determining solutions to business problems

BA activities include identifying, analyzing, developing and managing the requirements.

Business Analyst is **not** responsible for determining the solution implementation (creating the product's design)

What is a business analyst? (cont)

The Business Analyst acts as a bridge between the customer and other stakeholders (e.g., the project team), identifying, negotiating and achieving a consensus between the needs of the various representative individuals and groups.

Why is Business Analysis Necessary?

Problems with requirements can cause projects to fail. In most cases those problems are caused by poor or incorrectly conducted Business Analysis (especially Requirements Engineering, a part of the Business Analysis knowledge area).

Common problems

- Ambiguous, under-specified, unclear, impossible, contradictory business requirements
- Instability of the requirements (frequent and uncontrolled changes in requirements)
- Poor translation of the business needs to requirements (incomplete, inconsistent, or not measurable requirements)
- Unclear objectives of the initiative
- Communication problems
- Language barriers
- Knowledge barriers
- Vague wording
- Overly formal wording
- Redundancy
- Gold plating (adding unnecessary scope)
- Insufficient user involvement
- Overlooked user classes

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Why is Business Analysis Necessary? (cont)

- Minimal specification

Consequences of low quality BA

- Problems during during scope definition
- Planning difficulties
- Implementation problems
- Testing problems
- Unclear requirements, or low quality business design of the solution, can lead to confusion and questions regarding the intended software product or process solution
- risk of the project's failure increases
- Requirements are imprecise
- Requirements are ambiguous
- Requirements are contradictory
- Requirements do not fulfill the agreed criteria
- Requirements are missing
- Business processes and artifacts are not covered by requirements or are described incompletely
- All stakeholders are not identified
- Business goals or needs are not identified causing the designed solution to fail to meet the organization's needs and not achieve the business goals

Common reasons for neglecting BA

- Time pressure
- Exclusive focus on fast results
- Exclusive fixation on costs

Why is Business Analysis Necessary? (cont)

- Perceiving documentation or the analysis and understanding of the business processes within an organization as a cost, not an added value

Requirements Elicitation

Requirements Elicitation is the collection of activities, approaches, tools and techniques for capturing the requirements for a planned software system (or other business solution) from the stakeholders\

Traceability

Traceability is an association that exists between different types of requirements and the following items:

- Requirements (mapping the higher level requirements that defined the needs and features to the more detailed requirements)
- Detailed requirements to design models
- Detailed requirements to test cases
- High level requirements to test cases
- Requirements to release/code branch/version

Allows BA to ensure all business requirements have been met.

Important from the change management perspective, to determine the impact of a change on the system or process

Traceability (cont)

For the testers and developers, traceability ensures that the requirements coverage has been achieved

What is Enterprise Analysis?

Purpose: Identify and propose projects that meet strategic needs and goals.

Task: Identifying business processes performed in the organization

Purpose: Evaluate the internal and external environment

Conducting feasibility studies to determine the optimum business solution

Define/refine current/future business architecture

Assess the current state of technology (infrastructure and applications)

Benchmark analysis

Competitive studies

Fully define business problem/opportunity

Output: Defined Problem/Opportunity

Task: Determine Solution Approach

Purpose:

- Identify potential solutions
- Analyze feasibility of options
- Recommend viable business solution
- Validate with decision makers

Output: Solution Approach

Task: Define Solution Scope

Projects inevitably struggle at some point or the other if the scope is not defined properly

Solution scope may be determined using the following techniques

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What is Enterprise Analysis? (cont)

- Work Breakdown Structure (WBS) - a decomposition of the work that is required to complete a project, and accomplish the business objectives
- Product Breakdown Structure (PBS) - a decomposition of the components of the product
- System Interface Analysis - a definition of the work required to integrate the new solution into the existing business and technical environments

Context diagram

Product Breakdown Structure

Output: Solution Scope

Task: Develop the Business Case

- Define project objectives and expected business benefits
- Develop project scope
- Estimate time, cost, resources
- Analyze cost vs. benefit
- Evaluate risk
- Inputs: Business Architecture, Business Goal(s), Defined Business Problem/Opportunity Solution Scope
- Outputs: Business Case

Solution Assessment and Validation

How to assess proposed solutions to determine which solution best fits the business need, identify gaps and shortcomings in solutions, and determine necessary workarounds or changes to the solution

Solution Assessment and Validation (cont)

How we assess deployed solutions to see how well they met the original need in order to enable businesses to assess the performance and effectiveness of projects.

Purpose: Assess solutions to ensure that strategic goals are met and requirements are satisfied.

Task: Assess Requirements Coverage

Purpose: Determine how well possible options for solution designs will meet the requirements. The assessment may include a recommendation of a particular solution, rejection of all solutions, or an assessment of possible trade-offs.

Examples: RFI/RFP responses, Internal designs, Manual procedures

Inputs: Solution Design Option(s)

Outputs: Solution Design Assessment

Task: Allocate Requirements

Purpose: Allocate requirements among releases and/or solutions components. Ensures that the possible release options are designed in a way to maximize the possible business value given the options and alternatives generated by the design team.

Activities

Allocate requirements to hardware, software, manual procedures, etc.

Recommend the release/delivery strategy

Understand trade-offs between different implementation approaches

Inputs: Solution Design, Validated Requirements

Outputs: Allocated Requirements

Task: Determine Organizational Readiness

Purpose:

Solution Assessment and Validation (cont)

Determine organizational readiness to effectively operate the new solution

- Conduct organizational readiness assessment
- Recommend ways to optimize the organizational deployment

Outputs: Organizational Readiness Assessment, Organizational Change Recommendations

Task: Validate Solution

Purpose:

Validate the verified and deployed solution meets the business need

Define acceptance criteria (including what level of conformance to requirements is acceptable)

Identify defects/shortcomings (this should be distinguished from functional testing)

Analyze impact

Define corrective actions

Validate corrective actions

When a problem is identified with the deployed solution determine what is the most appropriate response

Outputs: Validated Solution, Defect Impact Analysis, Validated Corrective, Actions

Task: Evaluate Solution

Purpose:

- Assess the value of the solution as deployed to the business (to determine if the original goals are met).
- Compare actual vs. expected costs and benefits.

Outputs: Cost/Benefit Analysis

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Stakeholder Identification Techniques

Investigating the business domain

Identifying owners of the business processes

Analyzing the structure of the customer's organization

Exploring the target market of the customer's organization

Analyzing relationships with external organizations (suppliers, etc.)

Stakeholder Needs and Expectations

Different stakeholders may have different needs and expectations regarding the planned solution. It is very important to identify all the stakeholders and their needs, and to find a common understanding of the purpose of a solution, in order to avoid the situation where the final product may meet the requirements of only a selected group of stakeholders.

Ensure that the features to be implemented will not conflict with the requirement of other stakeholders

One of the responsibilities of a Business Analyst is to identify all the stakeholders and define their requirements and expectations

Determines the initial scope and requirements of the system

Business Case Definition

Provides the reasoning for initiating a project

Describes a justification for the project in terms of the value added to the business as a result of the project outcomes, in comparison to the cost of developing the new solution

May be in form of

Business Case Definition (cont)

- Structured document
- Short argument
- Presentation

Topics may include

- Information about the opportunity (market trends, competitors)
- Qualitative and quantitative benefits
- Estimates of cost and time to breakeven
- Profit expectations
- Follow-on opportunities
- Cash flow consequences of the action, over time, and the methods used for quantifying benefits and costs
- The impact of the proposed project on the business operations or business process
- The impact of the proposed project on the technology infrastructure
- Constraints associated with the proposed project
- Estimated budget
- Alignment with priorities established by the business

Procedure of Building the Business Case

- Identify and quantify the benefits
- Identify and quantify the costs
- Prepare the Business Case
- Define the procedures that will be used to measure the costs and benefits

Requirements Documentation

Follow common standards and guidelines

Important guidelines

- Each requirement must be unambiguous, precise, and understandable
- Superfluous information should be avoided
- Templates should be used as an aid
- Models and diagrams should be used to make the specification document clear and more understandable for readers.
- Formal graphical notation should be used as a method for presenting complex requirements, dependencies, and relationships

A requirements document may include

- Introduction
- Secrecy clause
- Regulations
- Standards
- Stakeholders
- Purpose of the product
- Overall description
- Functional requirements
- Non-functional requirements
- Limitations and assumptions
- Dependencies
- Risks
- Safety requirements
- Document acceptance

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Requirements Documentation (cont)

When creating a requirements document, the Business Analyst should remember that requirements specifications must be complete, consistent, modifiable, and traceable [Wiegers].

Common Mistakes

Trivialities - Lengthy descriptions of commonly known issues should not be included

Information out of scope

Thinking in solutions - The requirements specification should discuss the problem to be solved not the technical design of the solution

Redundant details

Lacking rationale

Modelling

Modeling is a way of expressing requirements by representing parts, or the whole, of the proposed solutions

Way of presenting complex requirements and relationships in the form of a model, especially some graphical form such as diagrams, helps ensure the solution is understood by other stakeholders

Easier to read and comprehend than written text

Not mandatory but very helpful in big projects

Can skip modeling in the following situations

- The solution is fully understood by the stakeholders and is easy to implement.
- The requirements are mostly non-functional and difficult to express in the form of a model
- The problem domain is well known
- The solution is dedicated to use by very few people

Modelling (cont)

- The scope is declared as constant and there is a low probability of changes in the scope resulting from future requirements or needs.
- model representation would be less understandable by the key stakeholders than written text

Benefits of modeling

- simplified expression of real processes
- describe a complex system in the most clear and unambiguous way.
- Models present the whole system and its context in a single diagram and therefore help to look at the problem from the overall perspective.

Common techniques

- UML notation to express requirements as use case diagrams, activity diagrams, component diagrams, state machine diagrams, etc.
- BPMN
- Using prototyping as a technique of GUI modeling
- Using SysML notation to develop specifications, analysis, design, verification and validation documentation for systems and systems-of-systems. The specifications may include hardware, software, information, processes, personnel and facilities.

Quality criteria for business process models

Modelling (cont)

- Correctness (syntactic and semantic correctness)
- Relevance (no irrelevant details)
- Economic efficiency (designed for a particular purpose)
- Clarity (understandable by the audience)
- Comparability (based on the same modeling conventions within and between models)
- Systematic design (contains well-defined interfaces to other types of models)

Domain Knowledge

The goal of a Business Analyst is to provide business solutions to business issues by assessing business problems, and identifying and analyzing root causes.

The success of Business Analysis is determined by the benefit that the solution provides to the business either in terms of savings in costs, improvement in productivity, and/or increase in customer satisfaction.

To be able to provide a business solution that provides a measurable benefit to the organization, the Business Analyst must have knowledge of the business domain.

Importance

Domain knowledge makes it easier for the Business Analyst to connect and communicate with Business Users.

Domain knowledge makes understanding and analyzing business issues easier

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Domain Knowledge (cont)

Lack of domain knowledge may lead to delays in providing the solution, since the business process and business rules must first be understood

Tools and Techniques of Facilitation

Applying engagement strategies

Creating participation

Generating and organizing data

Initiating reflection

Mobilizing energy

Igniting action

Recording information

Applying SWOT analysis

Tools

Gap analysis

Flipcharts

Checklists

Multi-voting

Root cause analysis

Brainstorming

Managing conflicts tips sheet

Focus group framework

Process Improvement

Process Improvement supports the introduction of change into the current process in order to improve quality, reduce costs and/or accelerate schedules

Supporting Process Improvement is one of the tasks of a Business Analyst.

The Business Analyst models and analyzes business processes used within an organization in order to discover any ineffective elements.

Techniques

Process Improvement (cont)

- Manually re-design processes on the basis of experience and domain knowledge with the goal of eliminating bottlenecks and making the execution times shorter and more efficient
- Introduce tools, including software, to optimize the business processes in the organization (e.g., SAP, ERP, CRM software)
- Simulate and optimize processes
- Adopt a selected methodology or strategy

Methods:

Benchmarking

Business process improvement

Business process reengineering

Capability Maturity Model Integration/Capability Maturity Model (CMMI/CMM)

ISO 9000

IT Governance

Just In Time manufacturing

Lean manufacturing

Performance improvement

Process management

Process Improvement and Management (PI&M)

Six Sigma

Total Quality Management (TQM)

BA Knowledge Areas

1. Business Analysis Planning and Monitoring (Orange)
2. Enterprise Analysis (Dark Green)
3. Elicitation (Light blue)
4. Requirement Analysis (light pink)

BA Knowledge Areas (cont)

5. Solution Assessment and Validation
6. Requirements Management and Communication

Common Objectives of Business Analysis

Collect and document the requirements

Design business solutions to resolve the business problems

Assist in the timely completion of the project by providing accurate requirements identification and analysis

Improve efficiency by increasing the quality of requirements identification and analysis and therefore reducing the need for rework and fixes in the later stages of the project

Business Analysis influences other project areas

Significant impact on project management (especially scope and time management)

Design – Business Analysis determines the required business architecture and scope of the solution

Development – The Systems Analyst (who determines detailed requirement specifications) uses the Business Analysis to determine what has to be implemented.

Testing and other Quality Assurance activities – Products of Business and Systems Analysis are a basis for testing

Business needs

A Business Need describes the business problem or opportunity which the Business Analyst must understand and analyze in order to recommend appropriate solutions

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Business needs (cont)

before a project starts, the Business Need (understood as a problem or an opportunity) and Business Case (understood as costs vs. benefits) are defined, either formally or informally.

for the projects that help the organization reach its vision, strategic goals, and business objectives.

Business Analysts are often supported by Project Managers and Product Managers in defining Business Needs

One of the responsibilities of a Business Analyst is to cooperate with the person or group requesting the project, including users or proxy users, and to help them articulate the real need.

What is a business process?

set of activities aimed at producing a specific output for a particular customer or market.

focuses on how the work is done within an organization, the way of organizing work, activities, relationships and the dependencies between them. A process can be considered as the ordering of work activities across time and place, with a beginning, an end, and clearly defined inputs and outputs [

A business process must have the following characteristics

- Has a goal
- Has specific inputs
- Has specific outputs
- Uses resources
- Has a number of activities that are performed in some order
- Affects at least one organisational unit

What is a business process? (cont)

- Creates value for the customer (both internal and external)

Identification of processes allows the Business Analyst to understand the organization's goals,

Helps determine the activities and the flow required to achieve future planned business and strategic goals

Identification of business processes helps find possible gaps and ineffective parts of the process, which may then be improved via process optimisation

If business processes are not established and understood, then the organization may have a low maturity level, which makes measuring and controlling processes very difficult. In addition, there are likely to be significant problems with the definition of the business goals and needs.

BA in Phases of the Software Life Cycle

Analysis phase

- Identifying and evaluating the current business processes in an organization ("as is" analysis)
- Gathering initial requirements for the needed business solution ("to be" analysis)
- Creating and analyzing the business case
- Conducting a feasibility study
- Preparing ideas for the business solution

Specification phase

BA in Phases of the Software Life Cycle (cont)

- Identifying and documenting business requirements on a more detailed level
- Supporting the Systems Analyst in preparing the detailed system specifications (e.g., covering such items as data, mapping, integration issues, user interfaces)
- Validating the proposed software design with the customer and other stakeholders
- Managing any requirements changes

Development phase

- Supporting the development team during implementation (e.g., clarifying issues related to the requirements, validating business rules to be applied in the code)
- Validating the evolving solution according to the intended requirements and needs (when possible)
- Supporting testers in preparing test cases and test scripts at the business level and validating the resulting work products
- Managing any required changes to the requirements (resulting from detected defects, regulatory or legal changes, needs for new or extended functionality, etc.)

Testing phase

- BA role varies
- verifying test results

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BA in Phases of the Software Life Cycle (cont)

- resolving issues related to defects or gaps in the requirements
- Participating in the preparation of test cases for User Acceptance Testing
- Supporting the acceptance testers by answering questions during test execution

BA Planning and Monitoring

The parameters which are defined and set during the planning phase should retain their validity throughout the project phases and it becomes the responsibility of the business analyst to perform the activities classified under this knowledge area precisely.

Activities

Identify the stakeholders

- Identify stakeholders who may be impacted by a proposed initiative or who share a common business need.
- determining appropriate stakeholders for the project or project phase, and analyzing stakeholder influence, authority (approve, sign off, veto), and project attitude.

Outputs: Stakeholder list, Stakeholder roles and responsibility designation

- RACI matrix (also known as RASCI matrix) plays very important role in this process.
- Scope of the tasks and the dependency can be defined easily

BA Planning and Monitoring (cont)

- estimates related to cost, timings and resources

Communication Planning

- 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
- Communication plays very important role in any stage of project life-cycle and in order to avoid ambiguity or conflicts in the requirements and end results, the communication should be precise and controlled.
- Each stakeholder should understand the details of the requirements
- WHAT, WHO and WHEN are the important questions related to communication

Monitoring BA work

- metrics that can be used for monitoring business analysis work are determined.
- helps in improving future business analysis plans
- performance measures, reporting and corrective actions

Plan Business Analysis Activities

BA Planning and Monitoring (cont)

- Determine 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.
- Determine tasks in the Knowledge Areas:
- Identifies task dependencies
- Develop estimates for BA work (time, skill level, complexity of tasks, etc.)
- Inputs: Stakeholder list, Stakeholder roles and responsibility designation, Organizational Standards
- Outputs: Business Analysis Plans for each KA

Plan Requirements Management Process

- Describes how to determine the appropriate requirements process for a particular initiative
- Consider whether and how requirements are changed
- Which stakeholders need to approve
- Who will be consulted on, or informed of changes,
- includes the approach to requirements traceability and determining which requirements attributes we will capture

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BA Planning and Monitoring (cont)

- Output: Requirements Management Plan

RASCI: R- Responsible (does the work), A- Accountable (decision maker, only one), S- Support (provides support during any phase of lifecycle), C- Consulted (consulted prior to the work and provides input), I- Informed (informed about the work progress).

Requirements Management and Communication

How we manage conflicts, issues and changes and ensure that stakeholders and the project team remain in agreement on the solution scope

Purpose

Recognise 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

Task: 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)

Control multiple versions of requirements work products

Manage requirements conflicts and issues

Inputs: Stakeholder roles and responsibility designation, Requirements, Requirements management plan

Outputs: Approved Requirements, Decision Record

Requirements Management and Communication (cont)

Task: Manage Requirements Traceability

Purpose:

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

Support the allocation of requirements to the solution in Solution Assessment and Validation.

Outputs: Traced Requirements

Tasks: Maintain Requirements for re-use

Purpose:

Select which implemented requirements will be maintained after solution implementation

Name the responsible party who will maintain the requirements

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

Inputs: Implemented requirements

Outputs: Maintained/re-used requirements

Task: Prepare Requirements Package

Determine appropriate format for requirements, Create a requirements package

Outputs: Requirements package (e.g., executive summary, formal documentation, RFI, RFP, etc.)

Task: Communicate requirements

Interaction with all stakeholders before, during and after projects.

Requirements Management and Communication (cont)

Interaction with solution team to assure that requirements are correctly understood and implemented

Change Management process

Identifying a potential change

Requesting new functionality

Analyzing the change request

Evaluating the change

Planning the change

Implementing the change

Reviewing and closing the change request

Potential changes might be a result of:

A defect found in the code, documentation or requirements

System improvement efforts

External changes (regulatory, legal, etc.)

New or changing requirements (resulting from new regulations, changes within the business domain, new features requested by the users, etc.)

Business process improvement initiatives

Change Request

When the need for a change appears, there should be a Change Request raised by a stakeholder requesting new or modified functionality. Important elements of a change request are a unique identifier, the author, the deadline (if applicable), an indication whether the change is required or optional, the change type, and an abstract, or description, of the proposed change

All changes should be tracked in a Change Log or Change List

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Change Management process (cont)

Changes should be managed by the Change Control Board (CCB). The CCB is not allowed to submit, approve, reject, or implement changes without discussion with the other stakeholders.

may have significant impact on other elements of the system, such as components, interfaces, functionality, etc.

Impact analysis should be performed

Impact analysis includes analysis of the changes needed in the project schedule or budget that would be necessitated if the change were to be implemented

The planning of change implementation includes:

Updating plans as needed depending on the phase of the project (e.g., Project Plan, Development Plan, and Test Plan)

Updating business and system documentation (e.g., specifications, architecture design, user manuals)

Updating test cases and test scripts

Implementing the change (coding)

Testing by vendor or/and customer test team

Deploying the change to the production environment

Requirements Organization

Requirements can be organized (structured) into packages. This packaging conforms to the boundaries (limitations) and solution scope established during Enterprise Analysis and helps to further define those boundaries

BA decomposes the problem model to make each requirement more detailed

Ensure that the model correctly reflects the boundaries for the business problem

Ensure proper level of detail is achieved

Requirements Organization (cont)

Types of decomposition

Goal decomposition

- Goals are business requirements
- Goal decomposition helps to ensure the solution will satisfy stakeholder's needs

Feature list decomposition

- A feature is a service that the solution provides to fulfill one or more stakeholder need
- an abstraction of the solution of the problem expressed at a high-level
- A feature is developed into completely described functional and supplemental requirements

Functional decomposition

- breakdown of a list of items into classifications or groups based on the function each item performs or the use it provides
- identifies the high-level functions of the proposed solution, or the organization itself, and then breaks them down into sub-processes and activities.
- usually performed by a Systems Analyst

Quality Assurance

Quality Assurance is a process of systematic monitoring and evaluation of the various aspects of a project or solution. The goal is to maximize the probability that the solution has achieved a desired standard of quality

Quality Assurance (cont)

Quality Criteria for Requirements

Allocatable	Feasible
Complete	Measurable
Consistent	Necessary
Correct	Prioritized
Testable	Traceable
Unambiguous	Understandable

Does not determine solution

Checklists

One of the most common techniques for requirements' quality control is the use of checklists.

Acceptance and Evaluation Criteria

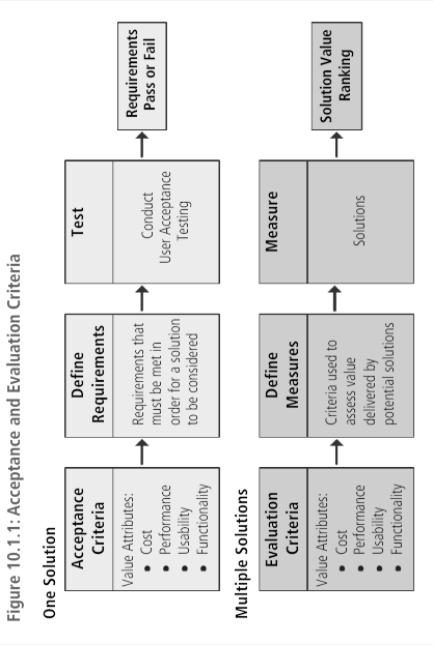

Figure 10.1.1: Acceptance and Evaluation Criteria

BA necessary skills

Analytical skills

Financial analysis

Statistical analysis

Operations research

Requirements analysis

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BA necessary skills (cont)

Systems analysis

Technical skills

Working knowledge of technology

Understanding of engineering principles

Ability to apply financial principles to feasibility studies

Managerial skills

Project management capabilities

Understanding of organizational behavior

Soft skills

Negotiation skills

- Ability to negotiate to obtain data
- Ability to negotiate with stakeholders to implement projects

Communication and writing skills

- Ability to communicate with all levels of management
- Ability to communicate with stakeholders of various knowledge levels
- Precision in articulating ideas and thoughts
- Ability to relate with line workers
- Good technical writing skills
- Strong communication skills in all forms (verbal, non-verbal, written, etc.)
- Public speaking skills

Facilitation skills

Facilitation can be defined as a process of enabling groups to work cooperatively and effectively. Facilitation provides leadership

Facilitation serves to improve the following skills

BA necessary skills (cont)

- Leading
- Solving issues
- Building team and community
- Empowering
- Resolving conflicts
- Transforming
- Evoking wise democracy
- Building personal effectiveness

Facilitator

facilitator is a person who contributes structure and process to interactions so that groups are able to function effectively and make high-quality decisions. The facilitator's goal is to support others and enable them to achieve high performance

Tasks and activities

- Helping the group to define its goals and objectives
- Providing processes to support members of the group to help them use their time effectively and to make high-quality decisions
- Guiding group discussions to ensure objectives are met, and noting any ideas and concepts raised by members during the discussion
- Supporting members of the group in assessing their current skills and building new skills
- Using consensus to enable the group to make decisions
- Managing conflicts using a collaborative approach

BA necessary skills (cont)

- Helping the group to communicate effectively and to access resources needed to make decisions

The facilitator must always stay neutral, listen actively and ask questions that allow the group to identify and collect ideas and concepts. One of the facilitator's tasks is to note and summarize all ideas raised by the members of the group.

Facilitator competancies

- Communicates well
- Processes ideas from people
- Shows a natural interest
- Listens well
- Maintains control
- Empowers the group
- Handles uncertainty
- Connects with the group quickly
- Focuses on the business not on personal solutions
- Negotiates between parties
- Understands group dynamics
- Helps the group to listen and draw logical conclusions
- Runs meetings
- Manages people's expectations
- Understands and explains the process

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