Business Analysis (Foundation)

By: HPS Pro Inc.

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- Introduction
- Module 1 – Role of the Business Analyst
- Module 2 – Supporting the Project Portfolio
- Module 3 – Developing the Solution Vision and Scope
- Module 4 – Understanding Requirements and Business Rules
- Module 5 – Eliciting Requirements
- Module 6 – Analyzing and Documenting Requirements

Day 2

- Module 6 – Analyzing and Documenting Requirements (contd.)
- Module 7 – Overview to Modelling Requirements
- Module 8 – Assessing and Validating Requirements
- Summary

Introduction

The course is designed to provide introductory understanding for anyone interested to dive into the field of Business Analysis.

Understanding of SDLC and interest in the field of business analysis is mandatory.

Course Scope

- Business analysis best practices
- Role of Business Analyst
- Project portfolio
- Solution vision and scope
- Requirements planning, elicitation, analysis and documentation
- Modelling requirements
- Requirement assessment and validation

Course Objectives

By the end of the course, you will be able to :

- Identify business analysis best practices
- Identify the role and responsibility of the BA
- Define requirements
- Explain the importance of managing risk
- Identify phases in the business analysis process
- Define the solution vision and scope

- Plan the requirement elicitation process
- Recognize the importance of analyzing and documenting requirements
- Explain the role of modelling for documenting and communicating requirements
- Perform requirement validation and traceability

Course Teaching Method and Materials

- This course uses and instructor-led teaching method with participant interaction (for example, sharing participant work experiences with business analysis)

- The course material includes-
  - Participant Guide
  - Reference Manual
  - Multiple Choice Exams

Participant Introduction

- Name, Company & Position
- Current Responsibilities
- Experience in Business Analysis
- Expectation from this course

Objectives

By the end of this module you will be able to -

- Identify business analysis best practices
- Explain the implementing business analysis best practices help reduce risk
- Describe the BABOK and role of IIBA

What is Business Analysis?

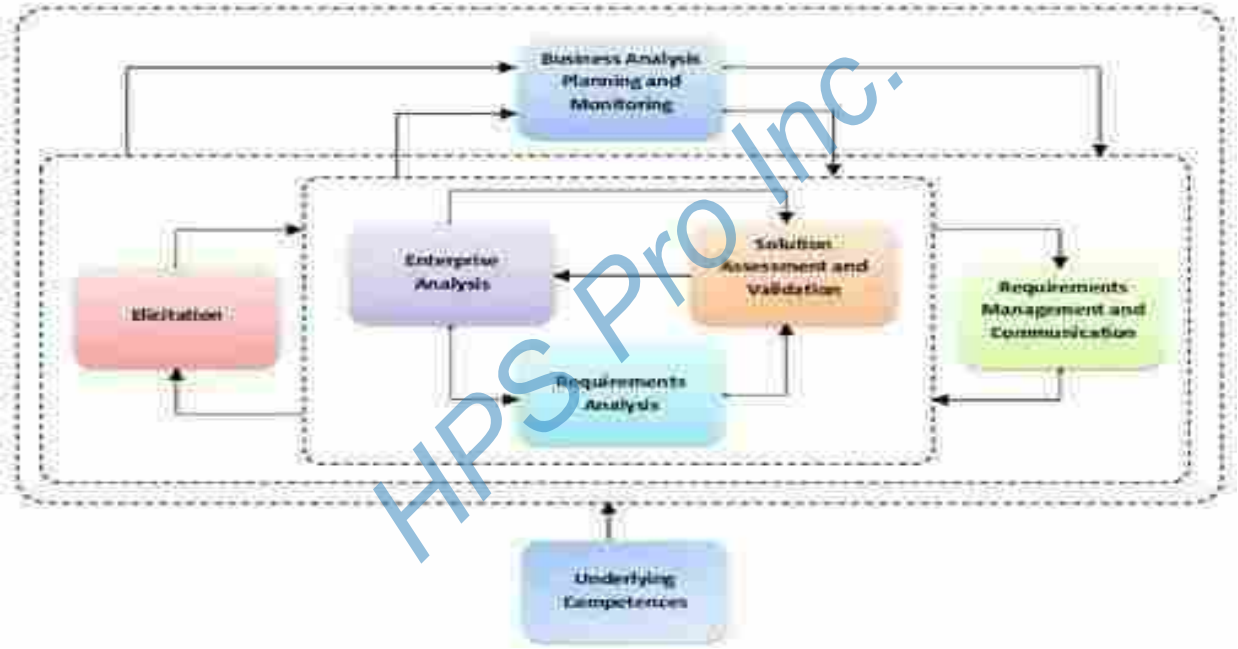
Business analysis is the set of tasks knowledge, and techniques associated with eliciting, validating, structuring, and documenting requirements based on business needs in order to solve business problems.

BABOK

- Is published by International Institute of Business Analysis (IIBA)
- Describes business analysis areas of knowledge and their associated activities, tasks, and skills necessary to be effective in their execution

www.iiba.org

BABOK Knowledge Areas



IIBA Certification Program

- IIBA has established and currently operates a certification program for BAs known as Certified Business Analysis Professional (CBAP)
- To become a CBAP, BAs must complete-
  - 7,500 hours of hands-on work experience in business analysis in past 10 years
  - 21 hours of professional development in past 4 years
  - A written examination with questions based on BABOK content

Best Practices in Business Analysis

Identify the problem or opportunity	• Determine the business problem or opportunity • Apply a diagnostic approach
Determine where the problem or opportunity occurs	• Apply a process based approach • Use models
Determine why the problem or opportunity occurs	• Determine root cause • Determine current performance through metrics
Determine who is involved	• Identify direct and indirect stakeholders • Involved users

Best Practices in Business Analysis (continued)

Justify process changes	• Determine process improvement through metrics • Build the business case
Manage the analysis process	• Conduct iterative processes • Trace business needs and requirements throughout the business analysis process • Develop and follow standardized business analysis techniques • Develop and follow a repeatable methodology • Document lessons learned

Benefits of Business Analysis

- Organizational Benefits
- Benefits of a Center of Excellence (COE)
- Project or Triple Constraint (Time / Cost / Scope) Benefits

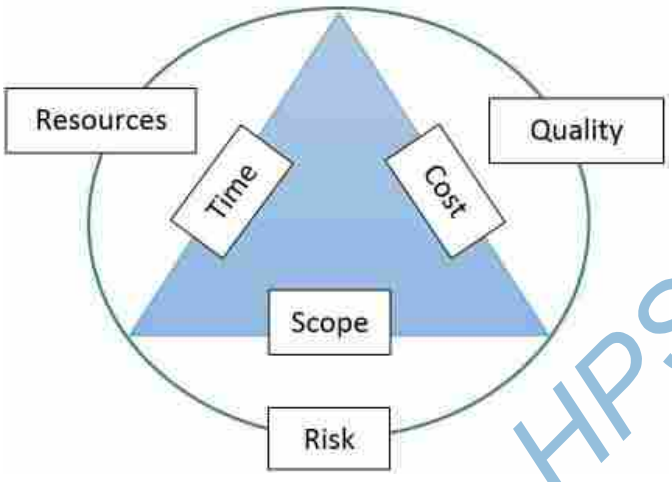
Organizational Benefits

- Increased likelihood of accomplishing the business strategy
- Improved work processes, systems, and products producing greater cost savings, more accurate schedules and an increase in customer satisfaction
- More effective communication and collaboration among the stakeholders throughout the organisation
- Clearer understanding of stakeholder needs
- Improved productivity and efficiency in requirement analysis
- Improved flexibility to respond to project complexity
- Improved ability to accommodate requirement changes
- Better decision making at all levels of the organization
- Increased stakeholder involvement and satisfaction

Benefits of a Center of Excellence (COE)

- Better alignment between project and organizational goals
- Reusability of requirements and models – use of a repeatable and continuously improved requirements process
- Better alignment of expectations between stakeholders and project teams
- Improved management of skills, best practises and standards
- Minimised cost and schedule overruns through early problem identification
- Less rework through traceability, when problems are appropriately identified and solved for the first time
- Improved requirements management to ensure planned benefits
- Seamless transition of deliverables to other phases of project
- Improved quality of deliverables
- Documentation and use of lessons learned

Project Constraint Benefits



- Deliver benefits to the marketplace around sound requirements, which reduces cost by preventing poor scope definition
- Minimize the number of change requests a project will undertake and consequently prevent unnecessary scope creep
- Decrease the time it takes to bring products to market and increase competitiveness in both the marketplace and internally with employees

Discussion

What is role of the BA in your organisation?

Key Messages

- Business analysis is the set of tasks knowledge, and techniques associated with eliciting, validating, structuring, and documenting requirements based on business needs in order to solve business problems
- Business analysis involves-
  - The investigation of a business problem or opportunity
  - The analysis and documentation of the requirements that a solution must satisfy
  - Support to project managers throughout the solution development life cycle to ensure that the requirements are met
- Applying business analysis best practices helps organizations to minimize threats and to maximize opportunities

Module 1 – Role of the Business Analyst

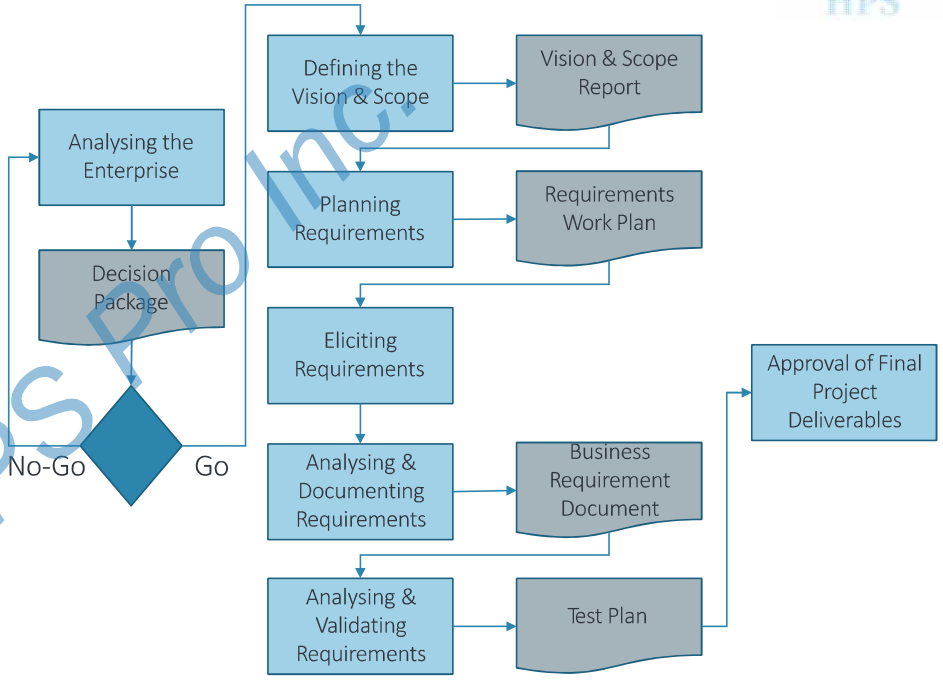
Objectives

By the end of this module you will be able to -

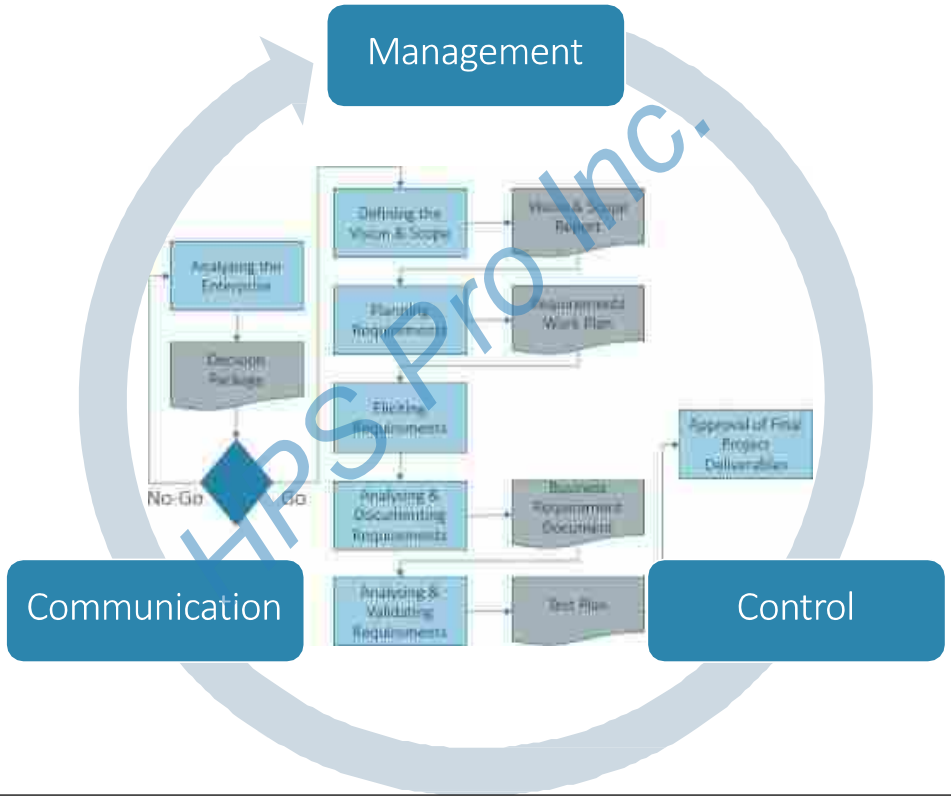
- Identify the phases in the business analysis process
- Describe the role of the BA
- Identify BA competencies through the BA Success Model
- Identify the responsibilities of the BA
- Describe the typical career path of a BA
- Explain the role of the BA in regard to other jobs in organization

The Business Analysis Process

Business analysis begins when organizational changes are needed to implement the business strategy



Management, Control, and Communication



AS-IS and TO-BE

- The BA analyzes and documents the AS-IS (the current state) and the TO-BE (the future state) of the business and its processes, business rules, data, and systems
- The BA elicits and documents the requirements for the proposed business solution to address the problem identified in the AS-IS
- Analyzing and documenting the AS-IS and TO-BE occurs at multiple stages of the business analysis process

The Purpose of Analysing and Documenting the AS-IS state	The Purpose of Analysing and Documenting the TO-BE state
• Frame the business problem	• Define the solution vision and scope
• Determine the root cause	• Model the future state
• Provide the baseline against which improvement will be measured	• Define solution requirements

Exercise 1-1

Define the AS-IS and the TO-BE

Role of the BA

- Serves as the representative of the business
- Manages Requirements
- Facilitates communication among key stakeholders
- Negotiates solutions between stakeholders and technical team
- Validates solutions against requirements
- Works to ensure process improvement
- Provides risk decision support
- Participates in pre-project activities such as strategic enterprise analysis (typically performed by Senior BA)

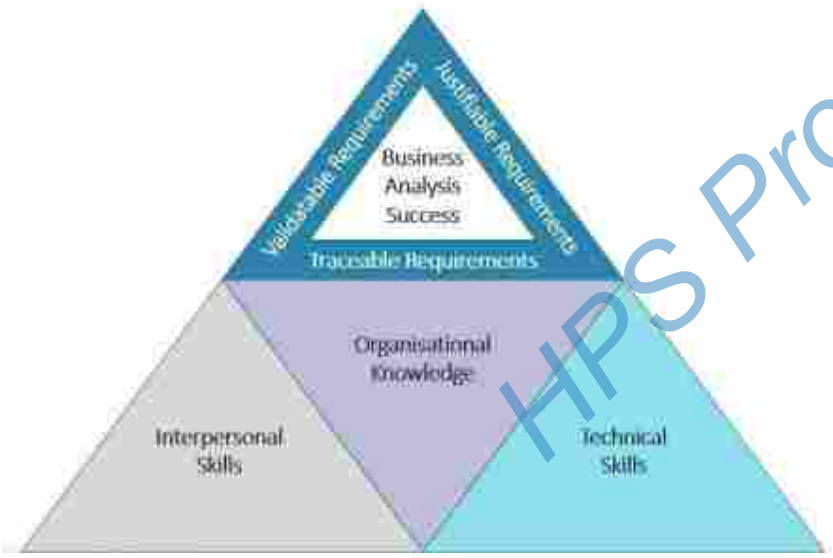
BA Role vs. PM Role

Project Managers	Business Analysts
Concerned with overall project success	Concerned with the overall success of the solution
Manages the project according to the triple constraint	Manages requirements to ensure they are justified
Defines project scope	Defines solution scope and works with PM to refine project scope if necessary
Ensure that the project is delivered on time , within budget, and within scope; removes issues / barriers	Ensure that the "right" product is built – that is, the one that meets customer needs
Manages change request process	Manages requirements necessary to support proposed change requests
Identifies, assesses, and evaluates overall project / organisational risk	Identifies, assesses, and evaluates risk associated with requirements

BA vs. SA vs. TM Roles

Business Analyst (BA)	System Analyst (SA)	Test Manager (TM)
Responsible for the BRD	Responsible for the tech specs. document	Responsible for the master test plan
Elicit, Analyse, and document requirements	Translates requirements into specs.	Plans test of solution to ensure requirements compliance
Communicates requirements to SAs	Communicates specs. back to BAs for validation against requirements	Works with test team to determine levels and type of testing to V&V requirements
Remains business oriented and tech. neutral	Relies on tech. architects to decide on the tech. platform	Ensures compliance with specs & ultimately requirements
Helps TM produce test cases	Designs the solution based on the requirements	Creates a test plan

Business Analysis Success Model



Organisational structure and design, Organisational strategy, Principles of IT, Domain knowledge, Audit ability (Capability Maturity Model Integration) Six Sigma, Software acquisition, Resource management, Request for Proposal (RFP), Request for Information (RFI), Request for Quotation (RFQ), Compliance (SOX)

Facilitation, Communication, Relationship Building, Influencing, Team Working, Stakeholder Analysis & Management, Detail-oriented, Problem solving, Leadership, Conflict Management

Elicitation, Investigation, Verification technique, Requirements validation, Solution assessment, Business process modelling and management, Use case analysis, Object oriented analysis, Enterprise analysis, Change Management, Project Management, Business case development

BA Career Path

BA Level	Proficiencies
Senior	Independently perform complex analysis tasks and support strategic enterprise analysis
Intermediate	Performs analysis tasks independently
Junior	Performs analysis tasks with help

Other Job Roles in Relation to BA

Project Manager	Has overall responsibility for the project activities
Governance Body	Consists of the change control board, project portfolio committee, and so on
Functional Management	Provides resources for business analysis activities
Executive Management	Accepts or rejects the requirements; participates in quality assurance reviews and acceptance tests
Subject Matter Expert	Provides and validates information regarding business operations
Test Manager	Has overall responsibility of solution testing

System Analyst	Translate business requirements into specifications for the solution; often performs test planning; participates in reviews or inspections to verify technical specifications
Developer / Programmer	Verifies that the solution meets specifications
End User	Is the source for User requirements, uses the solution to perform business tasks, and is the preferred resource to validate the solution
Stakeholder	May participate in the review of requirements and test plans and results

Discussion

In what specific ways do BAs interact with other members of your organization ?

Key Messages

- The business analysis process consists of six key phases:
  - Analyzing the enterprise
  - Defining vision and scope
  - Planning requirements
  - Eliciting requirements
  - Analyzing and documenting requirements
  - Assessing and validating requirements

- The BA –
  - Serves as a representative of the business
  - Manages requirements
  - Facilitates communication amongst stakeholders
  - Negotiates solution between the stakeholders and the technical team
  - Validates the solution against requirements
  - Works to ensure process improvement
  - Provide risk decision support
  - Participates in pre-project activities such as strategic enterprise analysis

Next Steps : Action Plan

How can you apply what you learned in this module to your work environment?

- Turn to the Action Plan tab and find the worksheet for this module
- Using the questions provided in the Questions to Consider, develop a list of actions you will complete when you return to work.
- For each action (what), identify –
- Who needs to be involved
- When you anticipate completing the action

Module 2 – Supporting the Project Portfolio

Objectives

By the end of this module, you will be able to –

- Explain the purpose of strategic enterprise analysis and how it contributes to the IT strategy
- Describe the solution development life cycle and how it relates to the IT strategy and the project life cycle

Project Portfolio

- "Collection of projects that fall under a single management umbrella"
- "Each project may be related or independent of one another, but the collection as a whole is aimed at achieving one or more organizational objectives"

Types of Project within the Project Portfolio

Discretionary	Non-Discretionary
• Non mandatory	• Mandatory
• Motivation is return on investment (ROI)	• Motivation is compliance with law, litigation, audits, or perhaps safety

Strategic Enterprise Analysis

- Defined as the study, modeling, and maintenance of the relationship between the strategic business plan and its important business support functions
- Usually conducted when an organization is –
- Undergoing business changes (for example, going through acquisition, merger, divestiture, and so on)
- Reviewing current business performance statistics
- Investigating new business strategies or opportunities
- Examining the current portfolio of projects (IT and Non IT) that are currently in process

Role of the BA in Strategic Enterprise Analysis

- Is typically a senior- level member of organization
- Serves as a team member, along with other executives, functional managers, division heads, the CIO, and other organizational leaders
- Ensures that requirements for new solutions are traced back to the business strategy

Outputs of Strategic Enterprise Analysis

Presents the portfolio management committee with a decision package composed of -

- A description of the business problem or opportunity
- An assessment of the expected impacts of the proposed project on organizations
- A description of the solution options including each option 's feasibility , costs and benefits
- An assessment of the organization's ability to provide the requisite resources and expertise to deliver a viable business solution
- The selection and prioritization of projects that will be required to implement the business strategy

Benefits of Strategic Enterprise Analysis

- Provide insight to duplication of effort and redundant projects
- Foster detailed portfolio analysis and oversight of business process improvement projects
- Provides the overarching blueprint for the organization's future operations
- Helps determine how to meet the business strategy by prioritizing projects
- Provides the background for establishing a formal and effective portfolio management system
- Maximizes return on investment
- Helps determine whether the benefits from any individual project have a boarder benefit to the organization

Discussion

How are projects selected within your organization?

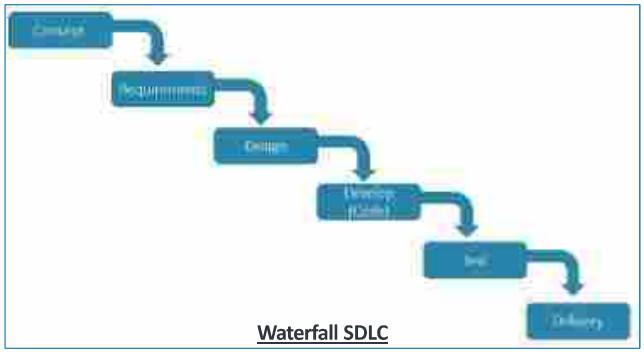
What is BA's involvement in the project selection process?

IT Strategy

- Sets the direction for how IT supports an organization business strategy
- Receives support from strategic enterprise analysis, which promotes consistency between business operations and IT systems

Solution Development Life Cycle (SDLC)

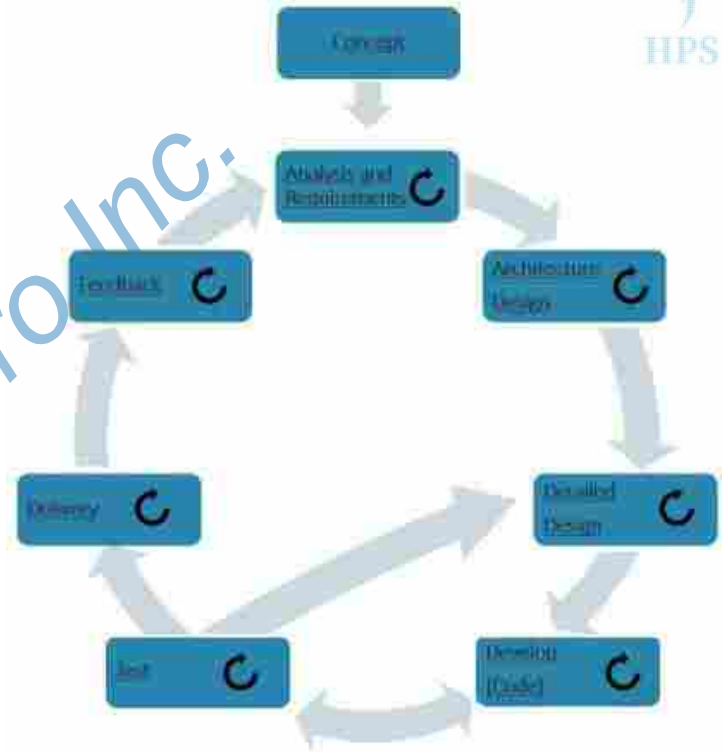
- The SDLC -
- Is a model for developing and acquiring a solution
- Includes both developed and purchased solutions
- Operates with the project life cycle
- Specializes how IT obtains and manages IT solutions in support of the organization strategic decision



Waterfall SDLC

Iterative SDLC

- With an iterative SDLC, phases are partially developed and tested with repeated iterations until all the requirements are met
- Agile is a method of iterative development. Its emphasis is on values and principles rather than on processes



The Project Lifecycle and the SDLC

1. Initiation
2. Planning
3. Implementation
4. Closeout

- The project lifecycle is a framework for describing the phases involved in developing and implementing a project
- The SDLC typically aligns with the phases of the project lifecycle, but the activities and tasks within the phases, and the sequence of the phases, may differ

Key Messages

- The portfolio is a collection of projects, programs and other initiatives grouped together for management and control purposes whose individual objectives and benefits are aimed at satisfying the organization's strategic objectives
- Projects making up the portfolio can be grouped into two categories:
  - Discretionary
  - Nondiscretionary
- Strategic enterprise is the study, modeling and maintenance of relationship between the strategic business plan and its important business support functions.
- An organization's IT strategy sets the direction for how IT supports the business objectives of the organization
- The SDLC specifies how IT obtains and manages IT solutions in support of the IT strategy

Next Steps : Action Plan

How can you apply what you learned in this module to your work environment?

- Turn to the Action Plan tab and find the worksheet for this module
- Using the questions provided in the Questions to Consider, develop a list of actions you will complete when you return to work.
- For each action (what), identify –
  - Who needs to be involved
  - When you anticipate completing the action

Module 3 – Developing the Solution Vision and Scope

Objectives

By the end of this module, you will be able to –

- Identify the components of the vision and scope report
- Explain the process of defining vision and scope
- Describe the importance of validating the solution scope

Mission Statement VS Vision Statement

Mission Statements

- Who are we as a organization
- What goods and services we provide
- Our customers, suppliers, and business partners
- Our industry, market niche, geographical boundaries

Vision Statements

- Enterprise vision describes where the organization would like to be 5, 10, and 20 years from now
- Solution vision describes the affected business areas once the project is complete

Solution Vision Statement

A solution vision statement should -

- Address the business problem and opportunity
- Provide an unbounded view of the possible solution
- Map the business goals
- Balance competing interests to provide a shared vision backed by stakeholder consensus
- Be captured in the vision and scope report
- Be only one or two paragraphs in length

What is Solution Scope?

- Define the boundaries of the solution, or what stakeholders expect the solution to do and not do
- Is an important early step in requirement elicitation:
  - Drives subsequent planning processes for requirements elicitation and the project itself
  - Helps manage customer expectations
- Differs from project scope:
  - Project scope applies to entire project
  - Solution scope applies only to the requirements of the solution itself

What is a Feature?

- A feature is a high-level solution characteristic that carries with it a measurable potential benefit
- The BA's role is to ensure that the features identified to solve a business problem are documented in the vision and scope report

Vision and Scope Report

- Executive summary
- Approval
- Current business: AS-IS model
- Vision and scope: TO-BE model
- Assumptions, dependencies, and constraints
- Risks
- Proposed schedule
- Proposed budget
- Revision log

Capturing the Solution Vision

- Capturing a solution vision is a creative process involving a collaborative effort among stakeholders

Business Sponsor	It is their project. They will be the one to defend the solution once its implemented.
Users	To avoid resistance to the system upon release, users should have an opportunity to give input into solution vision decisions
Project Manager	The project manager is responsible for building the solution and should participate in solution visioning
Technical Representatives	Technical representatives ensure the vision includes features that are technically feasible
BA	The BA participates in stakeholder identification and may facilitate the visioning workshop

Conducting the Visioning Workshop

- The visioning workshop is usually facilitated by the BA. It involves four steps:

1. Brainstorming
2. Organizing
3. Ranking
4. Scoping

Visioning Workshop : Brainstorming

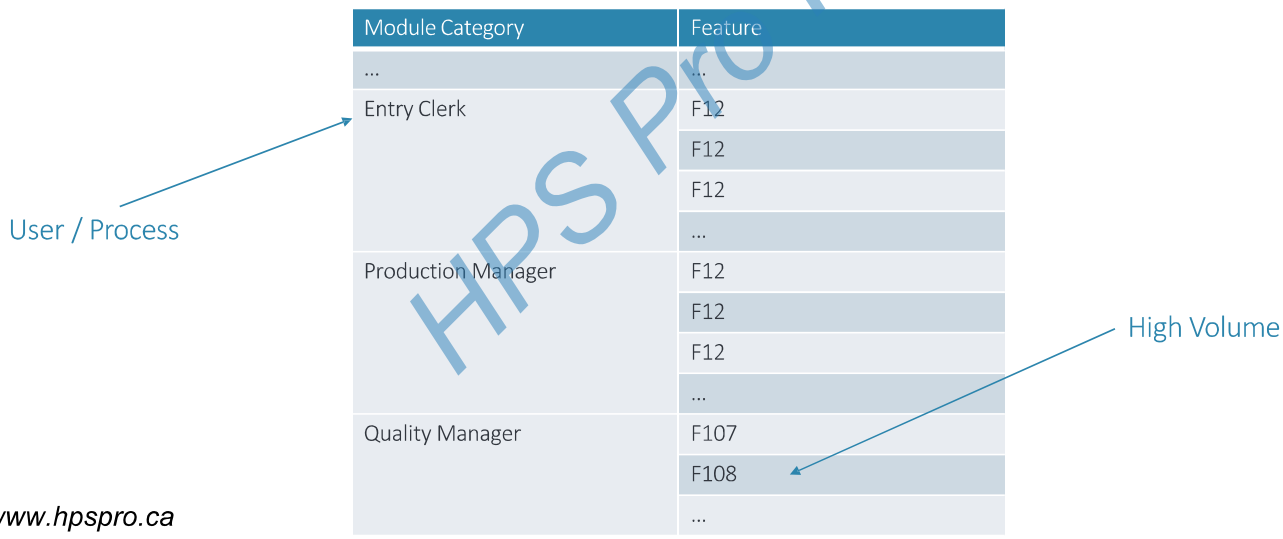
Brainstorming consists of following steps:

1. Recap the business problem, cause and stakeholders involved
2. Solicit any and all ideas for solution features without restriction
3. Continue brainstorming by asking, for each stakeholder, " What would the ideal solution do for you?"
4. Avoid all debate but encourage participation

Other facilitation techniques, which will be addressed in another module also assists with visioning.

Visioning Workshop : Organizing

- Remove the features that cannot be linked directly to a stated business problem
- Group remaining features into logical categories



Module Category	Feature
…	…
Entry Clerk	F12
	F12
	F12
	…
Production Manager	F12
	F12
	F12
	…
Quality Manager	F107
	F108
	…

Visioning Workshop : Ranking

- A rational basis is needed to exclude some features and keep others
- For each feature, try to estimate –
  - Client Priority — High, Medium, Low?
  - Estimated Effort

Visioning Workshop : Scoping

Priority and effort ranking within resource constraints leads to scope decisions.

Module Category	Feature	Priority	Effort
…	…		
Entry Clerk	F12	H	L
	F12	M	H
	F12	L	H
	…		
Production Manager	F12	L	H
	F12	M	M
	F12	M	L
	…		
Quality Manager	F107	H	H
	F108	H	L
	…		

In Scope

Out of Scope

Depends…

Validating Solution Scope

When validating solution scope, consider –

- Does the solution vision map to the business goals?
- Does each feature included in scope map back to the solution vision and business goals?
- Are there any conflicting statements in the solution vision ?
- Are there any conflicting statements in the solution scope?
- Are all features feasible given known constraints?
- Do stakeholders share a common understanding of the vision and scope?

Traceability

Traceability is a risk mitigation strategy to ensure that business needs are carried through the levels of requirements and into the solution

Traceability is bidirectional

Benefits of traceability include –

- Scope Management
- Change Management

Traceability originates in the Analysis phase and continues through the development phase of the project

Exercise 3-1

Solution Vision and Scope

Key Messages

- The solution vision is a concise, high- level description of a proposed solution to a business problem
- Solution scope places boundaries around the solution by clearly delineating what project stakeholders expect the solution to accomplish
- The BA assists the project manager with documenting the solution in the vision and scope report
- Before submitting the vision and scope report for approval, the BA needs to analyze each feature in the solution scope to determine its feasibility, potential problems, and risks
- Traceability originates in the Analysis phase and continues through the Development phase

Next Steps : Action Plan

How can you apply what you learned in this module to your work environment?

- Turn to the Action Plan tab and find the worksheet for this module
- Using the questions provided in the Questions to Consider, develop a list of actions you will complete when you return to work.
- For each action (what), identify –
- Who needs to be involved
- When you anticipate completing the action

Module 4 – Understanding Requirements and Business Rules

Objectives

By the end of this module, you will be able to –

- Define the different types of requirements
- Define business rules
- Explain the difference between features, requirements, business rules, and specifications
- Define risk
- Explain how best practices in business analysis help manage risk

What is a Requirement?

- A requirement is a –
- Capability needed by a user
- Condition or capability that a project must meet or possess
- Document representation of a condition or capability
- Requirements reflect what the business needs; they do not specify the technology that should be used to design and develop a solution.
- The BA's role is to expand the documented features into detailed solution requirements

Level of Requirement	Description
Regulatory	*Mandated by a third party*
Business	*Goals expected to be achieved*
User	*Needed by stakeholders to solve a problem or achieve an objective*
Solution	*Describe the technology-independent behaviours and information needed by the solution*

Types of Requirements

Type of Requirements	Example
Functional	The system must allow users to check their account balance prior to withdrawing funds
Nonfunctional (quality of service) Requirements	System response must be subsecond for all transactions
Transition	Existing ATMs must continue to operate while the new ATM network is being implemented

Functional	Non-Functional
Characteristics of the deliverable described in ordinary, nontechnical language understandable to the customer	Account constraints and external interfaces with which a system or solution may interact

Transition requirements: *Needs for ensuring the implementation and transition of a solution into an organization*

Nonfunctional (quality of service) Requirements

Performance	Have a subsequent response time
Availability	Be available at least 95% of time
Capacity	Be capable of increasing the number of users from 100-1000 users
Usability	Have help menu and search engines
Security	Enforce access rules & store transaction record history
Data Retention	Keep files up to 7 years
Backups	Perform daily midnight backups with 4 hrs restore time
Disaster Recovery	Have offsite service and a 48 hr recovery time
Training	Develop 30 min training session for the novice users
Documentation	Provide detailed instructions for all end user features

What are Specifications?

A specification is defined as the "description of the technology- specific details" for a material, product, or service, including the criteria for determining that the requirements have been met.

Solution Requirements	Specifications
Define the technology independent behaviours and information needed by the solution	Define the method (design) used to provide the solution

Requirements VS Specifications?

Requirements	Specifications
Answer who, what, where, when, how often, and how much is needed to solve the problem(or pursue the opportunity)	Answers how we will solve the problem (or pursue the opportunity)
Describe performance; no mention of possible technology	Describe technical solution
Concerned with processes and behaviour	Concerned with physical architecture and infrastructure
Example: An integrated administrative system to track project expenses	Example: A three tier web solution using ASP over an Oracle back end

What are Business Rules?

Business rules are –

"Obligations concerning actions, process, and procedures that define, and possibly constraint, some aspects of the business"

They may be –

- Definitions
- Relationships
- Calculations
- Authorizations
- Conditions
- States
- Ranges
- Triggers

Sample Business Rules

- All timesheets must be signed by a manager prior to submission to the payroll office
- A sales tax of 7.5% must be added to all purchases except food and prescription medicines
- All passengers must have a valid passport before boarding an international flight

Business Rules VS Requirements

Business Rules	Requirements
• Business rules exist independently of the proposed solution or opportunity • In general, business rules constraint processes and drive requirements	• Requirements are characteristics of the solution and describe it directly

Discussion

Where would you find business rules in your organization?

What is Risk?

- A risk is any possible, future event that may affect the project in some way
- Risk can be either positive(an opportunity) or negative(a threat)
- Risk consists of three factors:
- Risk events
- Probability, or likelihood, that the risk will occur
- Impact on the project if the risk does occur

What is Risk Management?

- Risk management is the practice of controlling risk
- It consists of processes, techniques, and tools for managing risks on the project
- Requirement risk management is a subset of overall project risk management and involves –
- Identifying requirement risks
- Assessing the probability and impact of requirements risks
- Planning and implementing requirements risk response strategies

Common Requirements Risks

- Insufficient level of user involvement in identifying and analyzing requirements
- Ambiguous requirements – not enough details in requirements
- Missing, incorrect, or conflicting requirements
- Key player changes (management, eliciting team, and so on)
- Priority changes
- Scope creep
- Changes to the project constraint

Risks Response Strategy

Threats	Opportunities
Avoid	Exploit
Transfer	Share
Mitigate	Enhance
Accept	Accept

Sources of Risks

Assumption	The legacy system is a good requirement baseline	Threat: Requirement elicitation uncovers needs fay beyond the legacy system capabilities
	Resources will be available to complete planned tasks	Threat: Not enough resources available Opportunity: Resource more talented than originally anticipated
Constraint	Solution must confirm to government standards	Threat: Government standards may become more strict Opportunity: Government may relax standards
	Analysis must be completed in 3 months	Threat: Resources are not available to complete the analysis Opportunity: Analysis takes less time than anticipated
Dependency	The business requirements document cannot be written until all user groups have been interviewed	Threat: Some users are not available for scheduled interviews
	Analysis cannot continue until the business sponsor has signed the requirements work plan	Threat: The business sponsor does not approve requirements work plan, thereby delaying requirement elicitation

Business Analysis Best Practices

Following best practices during the requirement process can significantly reduce threats and enhance opportunities.

For Example -

Risk	Best Practices
Users forget to tell the team everything they need Issues are often identified while the system is being designed	Iteration – Taking what is known and using successive cycles of refinement and validation to determine whether more information is needed
Misunderstandings in systems development resulting from lack of specifics	Measurability – Quantify as many aspects of the process as you can (for example, goals, tasks, process outcomes, and system behaviors)

Exercise 4-1

Understanding Requirements

Key Messages

- A requirement is –
- " Capability needed by the user"
- "Condition or capability that a project must meet or possess"
- A documented representation of a condition or capability as in 1) or 2) above
- There are four levels of requirements: regulatory, business, user and solution
- There are three types of solution requirements: functional, non-functional and transition
- Requirements define the functions and characteristics of the solution, and specifications define the method (design) used to provide the solution
- Business rules are obligations concerning actions, processes, and procedures that define, and possibly constraint, some aspects of the business
- A risk is any possible future event that may affect the project in some way. Risk can be either positive (an opportunity) or negative (a threat)

Next Steps : Action Plan

How can you apply what you learned in this module to your work environment?

- Turn to the Action Plan tab and find the worksheet for this module
- Using the questions provided in the Questions to Consider, develop a list of actions you will complete when you return to work.
- For each action (what), identify –
- Who needs to be involved
- When you anticipate completing the action

Module 5 – Planning and Eliciting Requirements

Objectives

By the end of this module, you will be able to –

- Explain the importance of planning for requirements
- Identify the components of the requirement work plan(RWP)
- Describe the importance of the RWP and its relationship to other project documentation
- Identify techniques used to elicit requirements
- Explain the importance of preparing the organization for change

Importance of Requirement Planning

Requirement planning ensures that–

- All necessary analysis phase activities are scheduled and documented
- Appropriate elicitation and analysis methods are selected
- Stakeholders are identified
- Expectations are set with all stakeholders
- Strategies are in plane for dealing with resistance to change
- The project team has common understanding of the requirements elicitation process
- Resources (including the business sponsors, users, and other stakeholders) participate when needed

Importance of Requirement Planning (continued)

- Strategies are in place for responding to risk events
- Requirement traceability is conducted
- Requirement elicitation is coordinated with other project tasks
- Tasks needed for requirement elicitation are incorporated into the overall project schedule
- The organization complies with regulations and industry standards

The Requirements Work Plan (RWP)

- Defines the work to be accomplished during requirement elicitation and documentation:
  - Activities the team will perform
  - Resources necessary
  - Proposed schedule
  - Estimated budget
  - Risks
  - Deliverables
- Ensures that nothing is forgotten
- Must be approved by the project manager and business sponsor
- May be incorporated into the project plan at the project manager's discretion

How is the RWP used?

- Communication and negotiation tool for project manager and business sponsor
- Risk management tool
- Baseline for changes
- Action plan for developing the BRD
- Tool for tracking status of business analysis activities

Components of the RWP

At minimum, the RWP should contain the following sections:

- Cover page
- Executive summary
- Approvals
- Purpose
- Analysis scope
- Resources
- Risks
- Analysis schedule
- Analysis budget estimate
- Procurement plan (if needed for outsourcing)
- Communications plan
- Revision log

Tool: Requirement Work Plan

Work Breakdown Structure (WBS)

- Project management tool
- Hierarchically structured task-oriented or deliverable-oriented grouping of work activities that organizes and defines the total scope of work to be done
- Aids the BA in –
  - Planning resources, budget, schedule
  - Negotiating for resources, budget, and scope
  - Defending estimates
  - Monitoring analysis work

The WBS is a working document

Appendix: Work Breakdown Structure (WBS)

Benefits of a WBS

- Identifies all work necessary to accomplish the business analysis tasks
- Identifies only necessary work, thereby increasing efficiency
- Identifies specific activities for estimating and assigning work tasks
- Provides a quality structure for measuring success
- Forces detailed planning and documentation
- Clarifies responsibilities
- Provides a tool for identifying risk

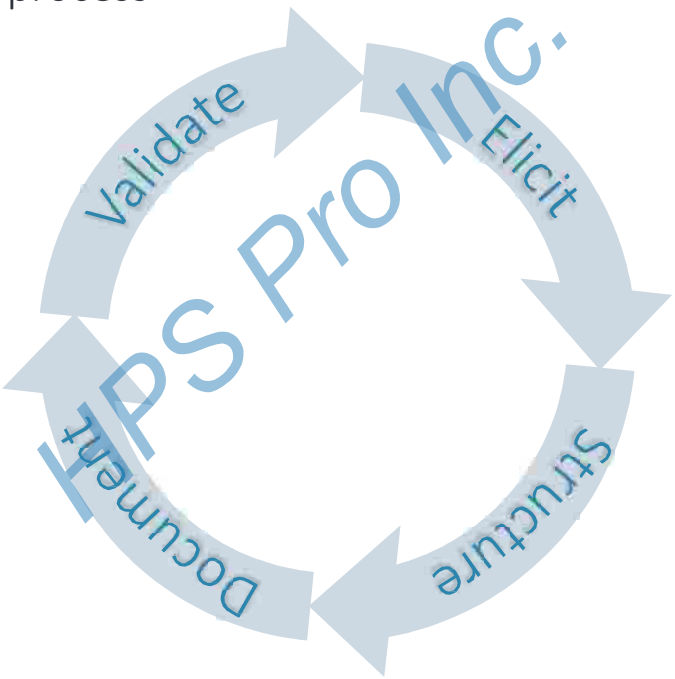
Stakeholder Identification

- A stakeholder is any individual or organization actively involved in, affected by, or influential to the project
- In identifying stakeholders, determine who-

- Provides the input?
- Gets the output?
- Has oversight?
- Has a related responsibilities?
- Reaps the rewards?
- Suffers the consequences?
- Thinks they are affected by the project?

Eliciting Requirements and Business Rules

Elicitation is an iterative process



Obtaining Success in Elicitation

- Do not expect to capture requirements or business rules in a single pass, as analysis and validation will lead to additional elicitation need as you go.
- Involve stakeholders through the process, as they will help validate requirements in addition to serving as a source of requirements
- Ensure that all requirements can be traced back to business goals
- Ensure that all requirements can be measured or decomposed into measurable requirements
- Ensure that all requirements have an "owner" (someone who confirms that the requirement has been met)

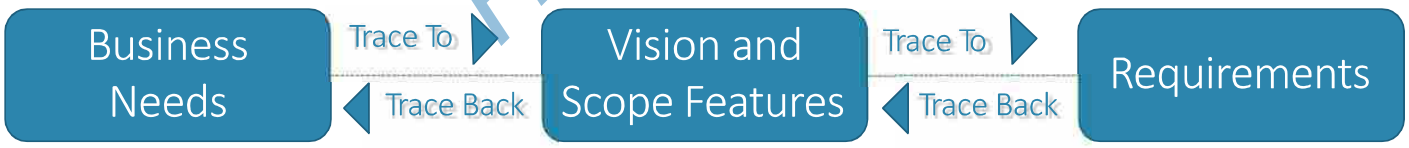
Eliciting Techniques

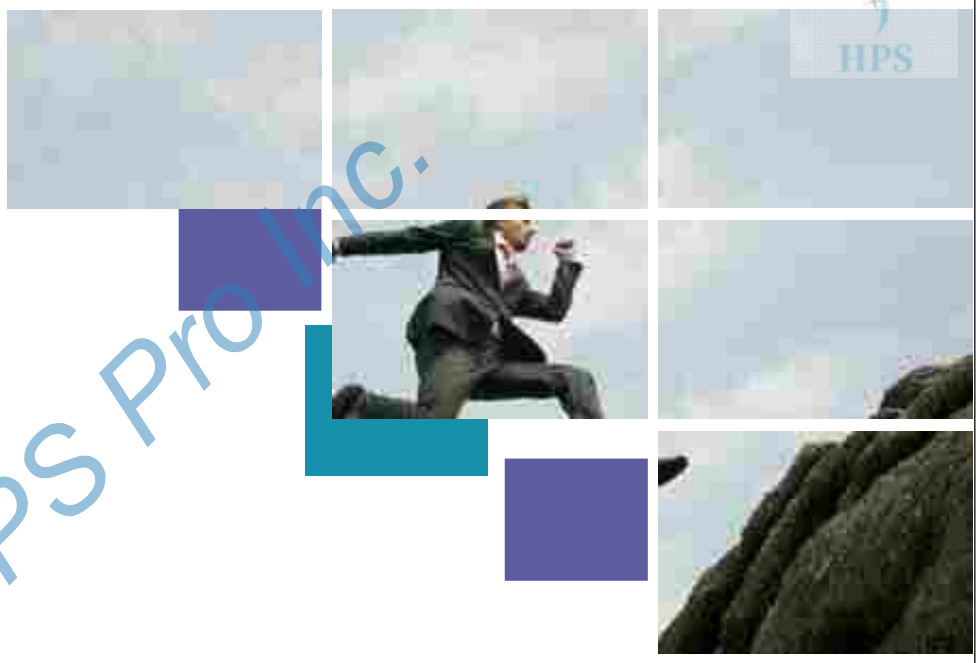
Techniques for reviewing the AS-IS • Research • Observation • Verbal Protocol	Facilitated Techniques • Focused Groups • Brainstorming • Joint Application Design
Survey Techniques • Interviews • Questionnaires	Product Based Techniques • Prototyping • Product Evaluation Trials

Requirements Traceability

Vision and Scope Features

- Traceability is a process to –
  - Link a requirement to a source in the project (for example, business objectives)
  - Track the linkage throughout the life cycle
- Traceability ensures all requirements can be mapped back to the business need
- Traceability enables a quick assessment of the effect of changes to requirements and facilitate scope control





Discussion

What are some common risks you have experienced in planning and eliciting requirements ?

Preparing for Change

- Part of BA's role is to identify the impact of the solution on the organization
- People often feel threatened by change and resist it because of –
  - Loss of security or status
  - Inconvenience
  - Distrust or uncertainty
  - Bad assumptions
  - Fear of failure or success
- Resisters need to be identified, and their reason for resistance addressed

Barriers to Change

Barriers to change include –

- Local management resistance
- Political pressures
- Ineffective processes

Reducing Resistance to Change

Steps to reduce resistance to change include –

- Creating awareness of the need for change
- Involving people as much as possible in determining what the change should be
- Explaining the change process to the stakeholders
- Communicating the changes and explaining the reasons and benefits for them
- Establishing champions for the change
- Dealing with individual concerns
- Giving people a role in introducing the changes

The BA's Role in Preparing for Change

- The BA contributes to the change management plan
- The change management plan –
  - Describes actions required to ensure changes are accepted by all important stakeholders
  - Explains to stakeholders why the change is necessary
  - Describes how management supports the project / change initiative
  - Discusses the training and support required for stakeholders to implement the change with minimal disruption to the business

Exercise 5-1

Planning & Eliciting Requirements

Key Messages

- The BA creates a RWP to document how the business analysis team will approach requirements activities on the project
- The work breakdown structure (WBS) identifies all work necessary to accomplish the business analysis tasks
- During elicitation, user requirements and business rules are identified and validated in iterations and then documented in the BRD
- Traceability is a risk mitigation strategy used to ensure that requirements are carried through the levels of specification and into the solution
- During planning, the BA addresses the issue of change and prepares to handle resistance from stakeholders

Next Steps : Action Plan

How can you apply what you learned in this module to your work environment?

- Turn to the Action Plan tab and find the worksheet for this module
- Using the questions provided in the Questions to Consider, develop a list of actions you will complete when you return to work.
- For each action (what), identify –

- Who needs to be involved
- When you anticipate completing the action

Module 6 – Analyzing and Documenting Requirements

Objectives

By the end of this module, you will be able to –

- Explain the purposes and uses of BRD
- Discuss the importance of validating the BRD
- Identify characteristics of effective requirements
- Explain the importance of requirement traceability
- Identifying common risks in analyzing and documenting requirements

Analyzing Requirements

Requirement analysis helps to –

- Categorize requirements
- Organize requirements into related groups
- Explore relationships among requirements
- Examine requirements for consistency, omissions, and ambiguity
- Prioritize requirements based on customer needs
- During analysis, BA translates user requirements and business requirements into solution requirements
- The solution requirements become the basis of the final solution

NOTE: Elicitation and analysis often occur concurrently or iteratively

Analyzing Requirements (continued)

User / Business Requirement	Solution Requirement	Corresponding Business Rule
The user must submit receipts electronically	The solution must allow a user to submit an expense report and associated receipts electronically	1. All employees may submit expense reports with receipts 2. All Contracted consultants may submit expense reports with receipts

Documenting Requirements and Business Rules

Criteria for Documenting Requirements and Business Rules	
• Clear • Complete • Concise • Assignable • Consistent • Accurate • Essential	• Feasible • Prioritized • Traceable • Validatable (Testable)

Exercise 6-1

Analyzing and Documenting Requirements

Business Requirements Document (BRD)

Business Requirements Document (BRD) –

- Is the foundation of solution development
- Is an elaboration of the regulatory, business, user, and solution requirements
- Is created by the BA and handed off to the team that develops specifications
- Provides insights into the current and future states of the organization
- Includes detailed profiles of user communities
- Provides a baseline for requirements management
- Is approved by the business sponsor

How is the BRD used?

The BRD is used in solution design and development

- It contains a fully analyzed set of requirements enabling solution design and implementation
- It is presented to key stakeholders for their review and sign-off, ensuring that the requirements correctly and fully describe what the business requires from the solution

The BRD Versus The Technical Specification Document

- The requirements described in the BRD reflects what the business needs; they do not specify the technology that should be used to design and develop a solution
- Systems analysts take these technology-independent requirements and translate then into technology-based specifications, which are described in the technical specification document

Validating the BRD

A BA must validate the BRD to -

- Ensure requirements meet and are traceable to the business needs
- Identify and prevent defects in design and development before they are implemented into the solution
- Identify and prevent missed or incorrect requirements from becoming part of the solution

BRD Validation Techniques

Technique	Process
Desk Checking	Used to provide feedback about defects and queries to the author. Stakeholders individually review the BRD using a checklist
Walk-Through	Involves a group review of requirements with a specific group of users. A facilitator take the group step-by-step through the requirements documentation asking for inputs, elaboration, and so-on
Peer Reviews	Used to find as many defects as possible. They are similar to, but most structured than, walk-throughs. Each member assumes two roles: a reviewer and a group dynamic role of author, facilitator, reader, recorder, or timer
Inspections	Performed as the final validation technique. Conducted like a peer review. Participants decide to approve or reject the BRD

Discussion

What are the common risks in analyzing and documenting requirements that you have encountered?

Key Messages

- During analysis, the BA translates user requirements and business requirements into solution requirements
- The BRD is the synthesis of all information that has been elicited and documented to date
- Building quality measures into the solution from the start is much less expensive and burdensome than fixing deficiencies that are discovered after the solution has been implemented
- An important part of the BA's role is quality assurance. One aspect of this role is validation of the BRD
- The BA's ultimate goal is to reach consensus and agreement among stakeholders on the complete set of requirements

Next Steps : Action Plan

How can you apply what you learned in this module to your work environment?

- Turn to the Action Plan tab and find the worksheet for this module
- Using the questions provided in the Questions to Consider, develop a list of actions you will complete when you return to work.
- For each action (what), identify –

- Who needs to be involved
- When you anticipate completing the action

Module 7 – Modeling Requirements

Objectives

By the end of this module, you will be able to –

- Define models and modeling
- Explain the purpose and benefits of modeling requirements
- Identify the types of models used in modeling requirements
- Identify potential risks in modeling requirements

What is a Model?

A model is a representation of reality that includes text, diagrams, metrics, and other elements

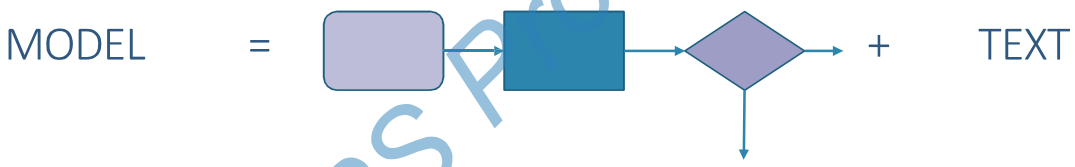
In business analysis, models are used to-

- Help identify and validate requirements
- Organize requirements into coherent pictures
- Document and communicate requirements
- Support and enhance text-based requirements

Modeling is the creation of diagrams and text that are representative of a business area and its relationship to other internal and external components

Models VS Diagrams

- A diagram is a sketch or drawing of an object, process, or activity
- When metrics, simulations, and textual explanations are added to a diagram, it becomes a model



What are we Modeling?

Business processes, data, relationships, and interactions within a business area are modeled

NOTE: The business area is a collection or group of departments or functions that share data and participate in related processes that share common goals

AS-IS vs TO-BE Modeling

AS-IS (Current State)	TO-BE (Future State)
Modelled to identify – • Business Problems • The root cause of the problem • The business structure, processes, or systems where possible improvements can be made	Modelled to identify – • Business rules that constraint a solution • Information to be managed by a solution • Business processes supported by a solution • Functional requirement for a solution

Modeling Techniques

- Organization Models
  - Organization
  - Business Interaction
  - Location
- Process Models
  - Events
  - Workflow
  - Use Case
  - State
- Information / Communication Models
  - Logical Data
  - Object-oriented (class)

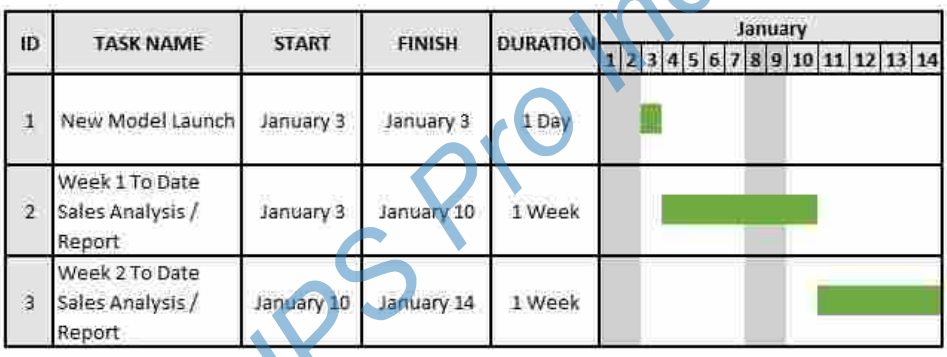
Popular Models

- Organization Models
- Business Interaction Models
- Location Models
- Events Models

Event Models

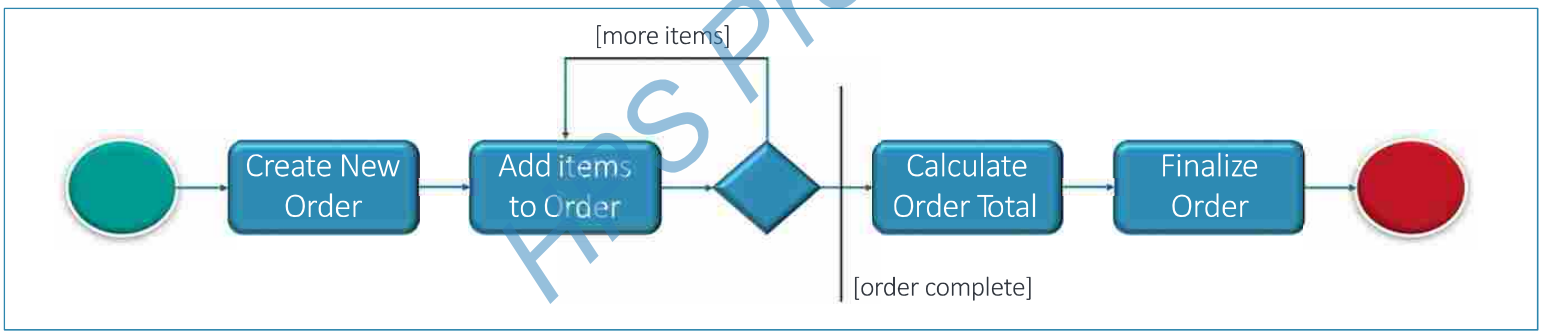
Used to highlight key events that may impact the business

ID	TASK NAME	START	FINISH	DURATION
1	New Model Launch	January 3	January 3	1 Day
2	Week 1 To Date Sales Analysis / Report	January 3	January 10	1 Week
3	Week 2 To Date Sales Analysis / Report	January 10	January 14	1 Week



Workflow Models

- Used to describe the tasks, decisions, inputs and outputs, people, and tools involved in a specific process
- Can consist of flowcharts, activity diagrams, or other diagrams to represent workflow



Common Modeling Techniques

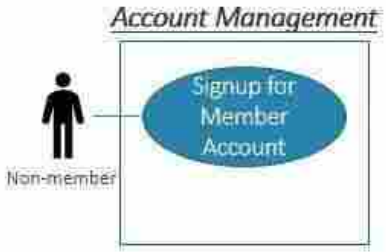
- Use Case Models
- State Models
- Logical Data Models
- Object-oriented Models

Use Case Models

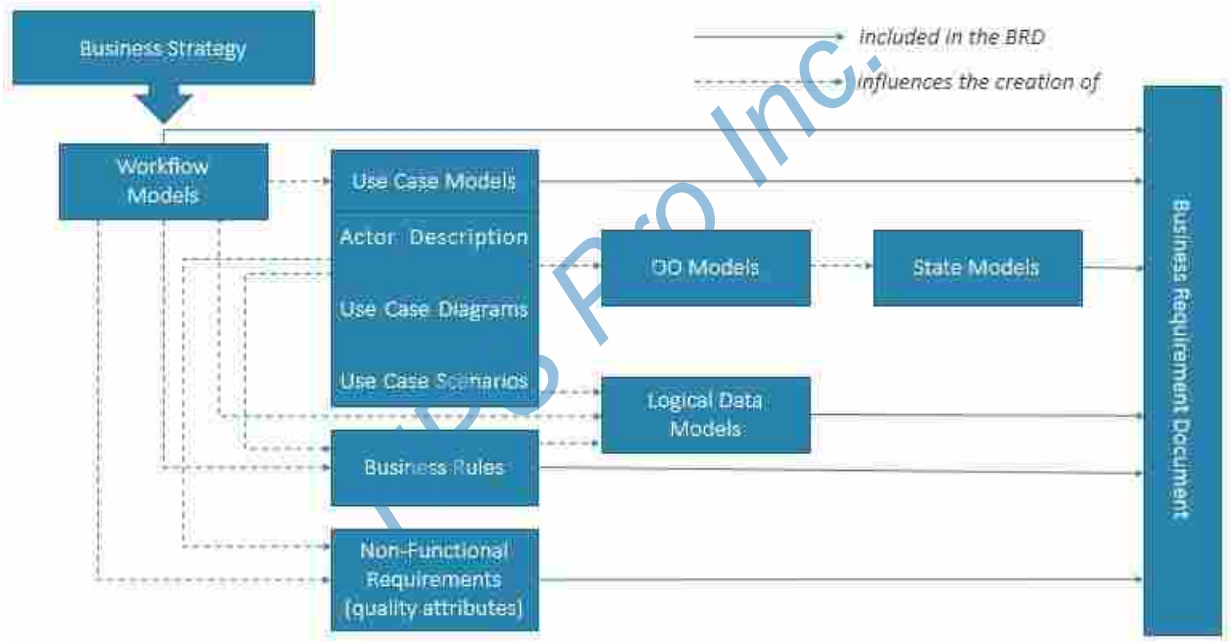
- Used to illustrate how users (or systems) interact with the solution
- Includes both a diagram and a textual description – called a use case scenario

Use Case Scenario

Use Case Title	Signup for a Member Account
Precondition	The Non-member does not already have a Member Account
Postcondition	The Non-member has a valid Member Account
Main Scenario	1. This begins when a Non-member requests to sign-up for a new Member Account 2. The System asks the Non-member to choose Username and Password 3. The Non-member provides Username and Password 4. The System validates the Non-member Username and Password



Models and the Business Requirement Document (BRD)



Modeling Requirements

Avoid -	Ensure -
• Creating too detailed a model • Creating models that are too complicated • Basing models on requirements that have not been validated • Not matching the model complexity to the intended audience of the models • Using the wrong model	• Early consensus on models is established • Process improvement areas are identified • Collaboration occurs with system analysts • Modelling standards are used whenever possible

Exercise 7-1

Modelling Requirements

Key Messages

- A model is a representation of reality that includes text, diagrams, metric, and other elements
- Models can help elicit requirements from the strategic level to the operational level and can be used effectively with all levels of management and the user community
- Models are ideal for communicating in a global business environment or in an outsourcing situation where language is an issue
- Modelling is the creation of diagrams and text that are representative of the business area and that depicts the business area's relationship to other internal and external components

Key Messages (continued)

- Different models have different purposes –
- A workflow model describes the tasks, decisions, inputs and outputs, people, and tools involved in a specific process
- Use case models describe the desired result that a user needs to achieve through interaction with a solution
- State models, which show the different states of an object, can help analyse, understand, and document complex objects
- Logical data models show the data relationship in the solution
- An object model is an abstract representation of the processing and data requirements of a solution based on decomposing the system into objects. Each object encompasses the data and operational characteristics of one business item

Next Steps : Action Plan

How can you apply what you learned in this module to your work environment?

- Turn to the Action Plan tab and find the worksheet for this module
- Using the questions provided in the Questions to Consider, develop a list of actions you will complete when you return to work.
- For each action (what), identify –
- Who needs to be involved
- When you anticipate completing the action

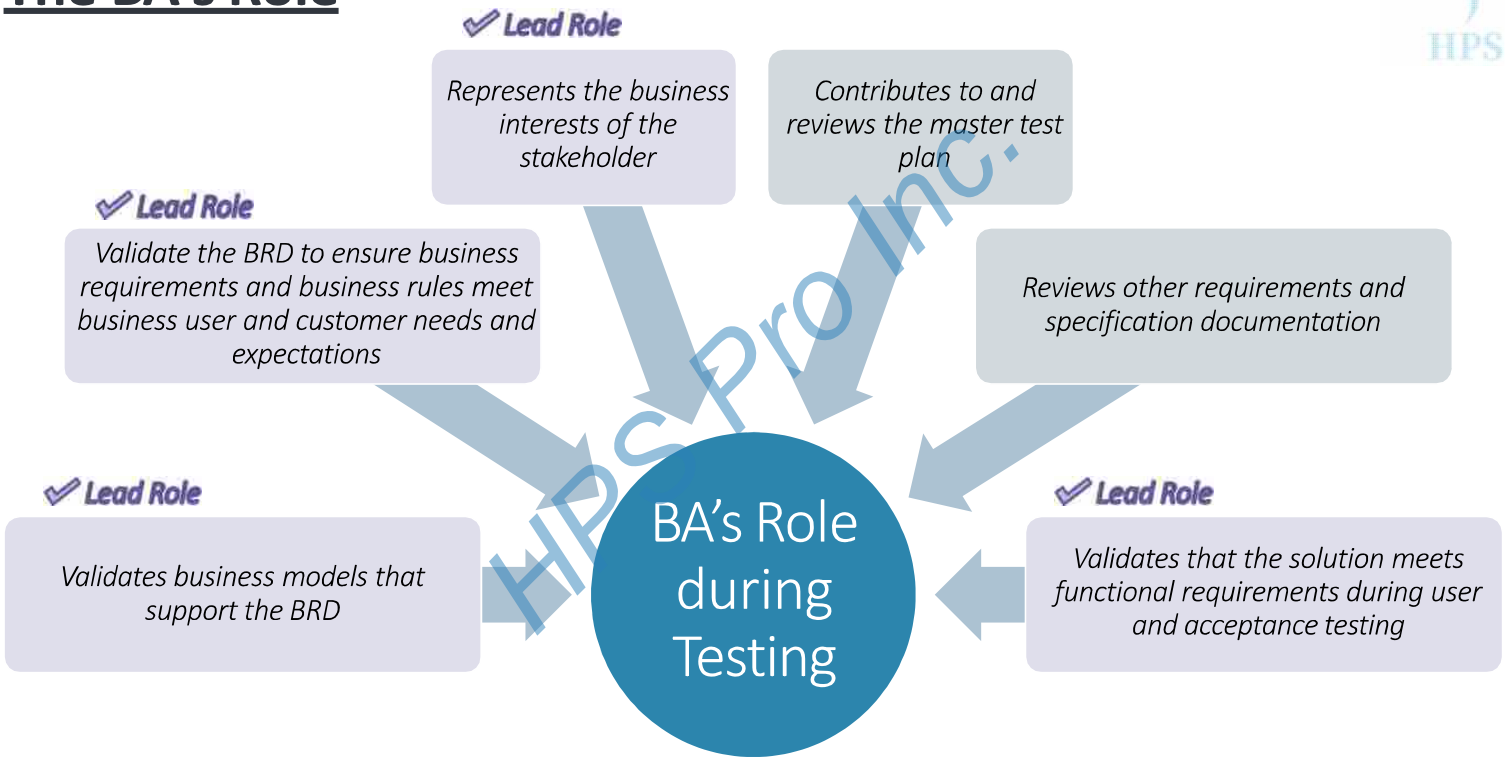
Module 8 – Accessing and Validating Requirements

Objectives

By the end of this module, you will be able to –

- Define validation and verification and distinguish between the two
- Explain the role of the BA in the testing process
- List the levels and the types of testing executed by the BA
- Identify the components of the master test plan
- Document test scenarios and test cases
- Explain the importance of traceability in testing

The BA's Role



Validation and Verification the Solution

Validation	Verification
The process of ensuring that the solution as identified in the vision and scope report and as defined in the BRD will satisfy the business need for which the project was chartered	The process of ensuring that the solution confirms to the specifications

To test a solution, we must –

- Validate that the right solution is being built
- Verify that the solution is being built correctly

Note: Validation and verification occur before, during and after a solution is developed

Importance of Testing

Testing is important for ensuring quality by –

- Identifying defects so they may be removed or corrected before the solution is delivered
- Determining whether a solution, as built, conforms to the functional, non-functional, and transition requirements

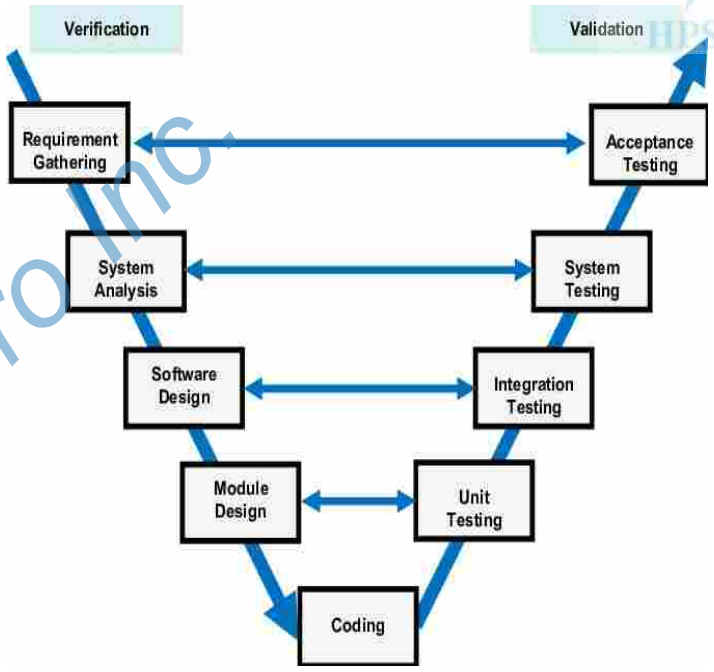
A defect is the non-conformance of a characteristic with specified requirements, or a deficiency in something necessary for an item's intended, proper use

V-Model of Testing

The V-Model –

- Can be used as a tool to plan all levels of testing
- Illustrates the relationship between solution development and solution validation and verification
- Ensures all tests can be traced back to documentation developed during requirement gathering

Appendix : The V-Model of Testing



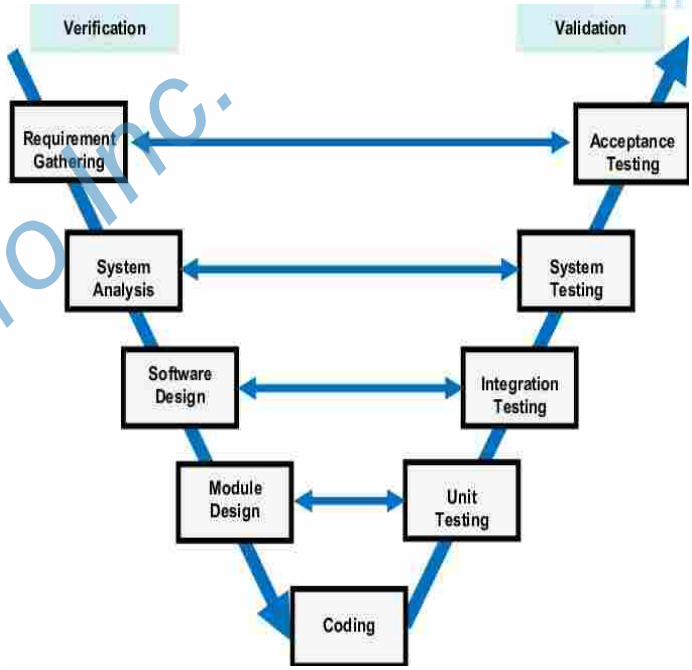
Testing from the BA's Perspective

The BA plans and conducts user and acceptance testing to ensure business and user requirements are met

Satisfaction assessment is also conducted to validate the solution meets the business need

The goal is to ensure that the solution meets –

- Business objectives in vision and scope report
- Requirements defined in BRD



User Testing

User Testing is –

- The process of validating with users that business functions are met, and the solution is free of defects with unacceptable impact

For user testing, the BA leads the effort with user and/or external customers participation

Acceptance Testing

The goal of acceptance testing is to –

- Show management that the solution meets the business need and/or opportunity
- Get signed acceptance and move to delivery

The test strategy of acceptance testing must –

- Define the test environment, the pretest setup, and a planned script to transition to the nest test
- Minimize scope creep (ad-hoc requests from management)

The strategy varies by acquisition method and risk. The level of risk dictates the level of formality.

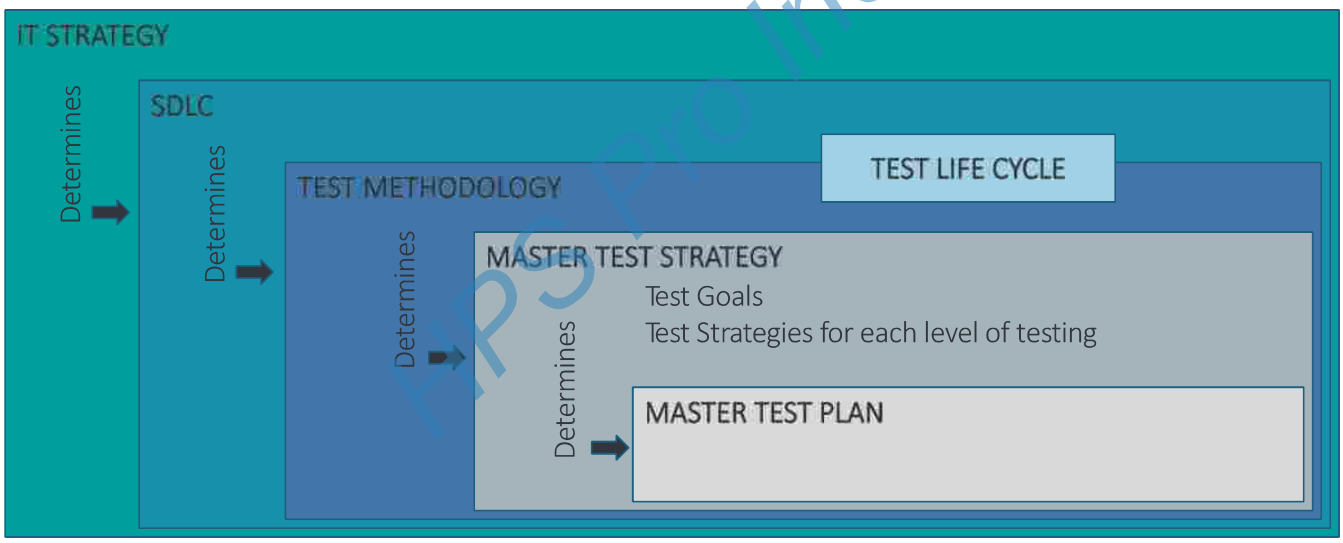
Satisfaction Assessment

The Satisfaction Assessment –

- Determines whether the business needs were met, and issues were resolved after delivery
- Is performed by BA after solution delivery
- Usually includes a survey of users

Master Test Plan

The master test plan helps manage and communicate all activities for testing a solution



What is a Test Scenario ?

A Test Scenario is –

- A set of interrelated steps that test how a solution performs a business function or process under specific conditions or events

What is a Test Case ?

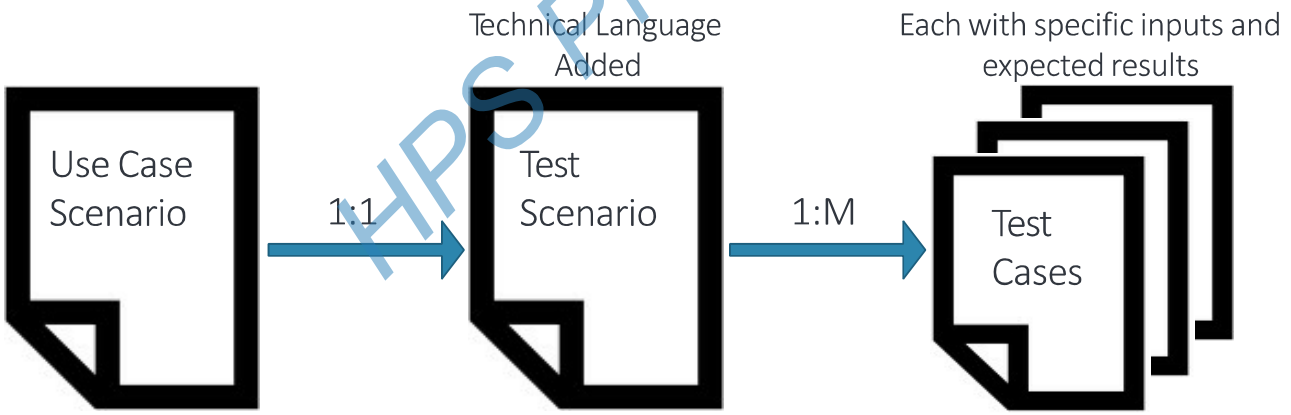
A Test Case is –

- One situation under which a scenario is executed. It represents the execution of a specified component of the solution using a specified –
  - Set of Input Values
  - Expected Results

The input values and expected results are derived from business rules.

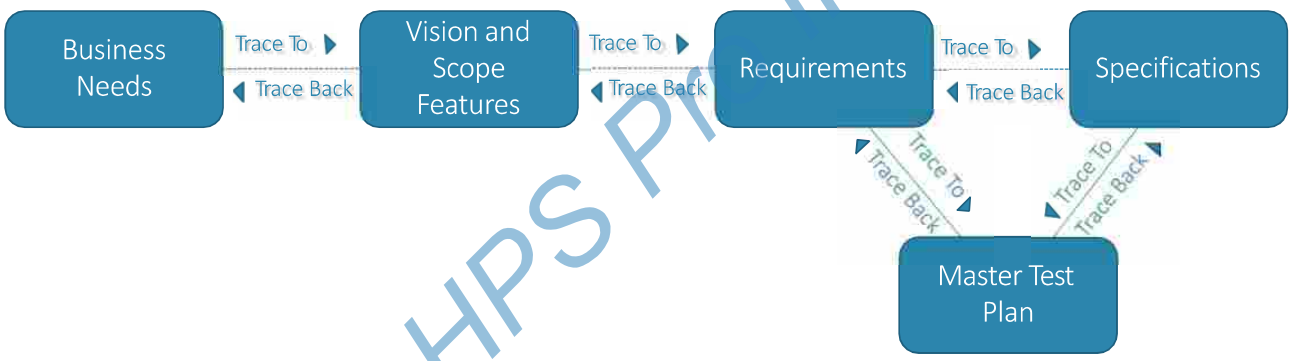
Test Scenario and Test Cases

- Identifying and documenting test scenarios and test cases is performed independently for each test level by each test team
- The BA is responsible for the creation of test scenarios and test cases for user testing and acceptance testing
- Test Scenarios and test cases are documented in the master test plan



Traceability in Testing

The BA must be able to trace each test case back to the business need represented by a specific requirement



Traceability in Testing (continued)

	TRACEABILITY MATRIX					
Requirement	Source	Business Need	Business Rule	Model	Test Scenario	Test Case
1.1.1	Business Strategy	X	BR-054		X	X
1.1.2	CEO	X	BR-043	X	X	X
1.1.3	Supplier	X	BR-302		X	X
1.1.4	Customer	X	BR-129	X	X	X
1.1.5	Vision and Scope Report	X	BR-137		X	X

Key Messages

- Validation is the process of ensuring that the solution as identified in the vision and scope report, and as identified in the BRD, will satisfy the business needs for which the project was chartered
- Verification is the process of ensuring that the solution confirms to the specifications
- The V-model of testing is a graphic representation of the relationship between solution development and solution validation and verification
- During the testing process, BAs are responsible for planning and conducting user testing, acceptance testing, and the satisfaction assessment
- The master test plan is created to manage all the activities for testing a solution

Key Messages (continued)

- A test scenario is a set of interrelated steps that test how a solution performs a business function or process under specific conditions or within specific events
- A test case is one situation under which a scenario is executed
- The BA must be able to trace each test case back to the business need represented by a specific requirement

Next Steps : Action Plan

How can you apply what you learned in this module to your work environment?

- Turn to the Action Plan tab and find the worksheet for this module
- Using the questions provided in the Questions to Consider, develop a list of actions you will complete when you return to work.
- For each action (what), identify –
- Who needs to be involved
- When you anticipate completing the action

Action Plan

The following worksheet is designed to help you begin prioritizing what you want or need to do when you return to your organization and to develop a realistic timeline. Take a few minutes to think about and review what you have learned from the course and how you will apply the principles learned when you return to your organization. The document your next steps on the Action Plan.

1. Read the "Question to consider" to start thinking about actions you can take to improve your organization's processes.
2. Develop a list of at least five actions in each area that you will complete when you return to office.
3. Next, identify who you need to involve for each item you have listed.
4. Finally, identify the appropriate timeframe for accomplishing each of these steps. For items you know will be ongoing, identify milestones for each period (3, 6, 9, 12 months & over)

Foundation of Business Analysis : The Role of the Business Analyst

Action Plan	Apply what you have learned about the role of the business analyst by developing a list of actions you will complete when you return to your organization
Questions to consider	• How does performing the steps of the business analysis process contribute to the success of projects in my organization? • How can I ensure that the roles & responsibilities of the BA are defined within my organization? • Can I ensure the competencies of the business analysts within my organization align with the Business Analysis Success Model? If so, how?

		Time			
What do I want/need to do next?	Who	3 Months	6 Months	9 Months	12+ Months
1.					
2.					
3.					
4.					
5.					

Foundation of Business Analysis : Supporting the Project Portfolio

Action Plan	Apply what you have learned about the role of the business analyst by developing a list of actions you will complete when you return to your organization
Questions to consider	• How can I support the selection & prioritization of projects within the project portfolio? • Do I understand how the IT strategy supports the business strategy of my organization?

		Time			
What do I want/need to do next?	Who	3 Months	6 Months	9 Months	12+ Months
1.					
2.					
3.					
4.					
5.					

Foundation of Business Analysis : Developing the Solution Vision and Scope

Action Plan	Apply what you have learned about the role of the business analyst by developing a list of actions you will complete when you return to your organization
Questions to consider	• How do I collect information to capture the solution vision and scope? • How do I validate the solution vision and scope?

		Time			
What do I want/need to do next?	Who	3 Months	6 Months	9 Months	12+ Months
1.					
2.					
3.					
4.					
5.					

Foundation of Business Analysis : Understanding Requirements and Business Rules

Action Plan	Apply what you have learned about the role of the business analyst by developing a list of actions you will complete when you return to your organization
Questions to consider	• How do I differentiate between the different levels and types of requirements? • How do I identify and document business rules within my organization? • How does my organization differentiate between requirements & specification?

		Time			
What do I want/need to do next?	Who	3 Months	6 Months	9 Months	12+ Months
1.					
2.					
3.					
4.					
5.					

Foundation of Business Analysis : Planning and Eliciting Requirements

Action Plan	Apply what you have learned about the role of the business analyst by developing a list of actions you will complete when you return to your organization
Questions to consider	• How do I plan for eliciting requirements? How do I document the plan? • What techniques can I use for eliciting requirements? How do I select these techniques? • How can I prepare the organization for change? If the organization is not prepared, how might that impact the project?

		Time			
What do I want/need to do next?	Who	3 Months	6 Months	9 Months	12+ Months
1.					
2.					
3.					
4.					
5.					

Foundation of Business Analysis : Analyzing and Documenting Requirements

Action Plan	Apply what you have learned about the role of the business analyst by developing a list of actions you will complete when you return to your organization
Questions to consider	• How should I translate user requirements into solution requirements? • How should solution requirements be documented? • What techniques can I use to validate the business requirements document (BRD) ?

		Time			
What do I want/need to do next?	Who	3 Months	6 Months	9 Months	12+ Months
1.					
2.					
3.					
4.					
5.					

Foundation of Business Analysis : Modeling Requirements

Action Plan	Apply what you have learned about the role of the business analyst by developing a list of actions you will complete when you return to your organization
Questions to consider	• How can I use models to support the organization, communication, documentation, and validating the requirements? • What types of models should I use and when should each type of model be used? • How can I minimize the risks that may occur when modeling requirements?

		Time			
What do I want/need to do next?	Who	3 Months	6 Months	9 Months	12+ Months
1.					
2.					
3.					
4.					
5.					

Foundation of Business Analysis : Assessing and Validating Requirements

Action Plan	Apply what you have learned about the role of the business analyst by developing a list of actions you will complete when you return to your organization
Questions to consider	• When and how are requirements validated and when and how are they verified in my organization? Who should be responsible for validating requirements and verifying requirements? • How can I contribute to the development of the master test plan? • How can I ensure test cases trace back to specific requirements and the business needs?

		Time			
What do I want/need to do next?	Who	3 Months	6 Months	9 Months	12+ Months
1.					
2.					
3.					
4.					
5.					

Case Study 1 – Small Business Financial Consulting

Case Study 1 (continued)

Background	Small Business Financial Consulting (SBFC) specializes in providing financial consulting services to small firms that want to expand in global markets. With local consultants in Europe; Southeast Asia; Australia; and North, South and Central America, SBFC provides cost-effective advise and support to small businesses that are expanding into or from those regions. SBFC consultants, who are both full-time employees and contracted consultants, have in-depth knowledge of local laws, language, business practices and culture, and the challenges that small business face. SBFC's business model is highly successful because it provides the same level of service as the big consulting firms, but its low overhead allows it to provide these services at a cost that small organizations can afford. SBFC grew through mergers and acquisitions of other small companies in those markets where its clients intended to expand. Most of these companies employed fewer than 10 employees and had their own processes and procedures in place for doing business.
Current State (As – Is)	Currently, employees and contractual consultants record their time and report their expenses in the local currency and language of the office that deals directly with the client. Each SBFC office is responsible for recording expense costs, billable-and nonbillable time, and invoicing data and reporting the data to the headquarters in New York. Because most local offices joined SBFC through acquisition, the offices continue to follow the processes for expenses and invoicing and use the same systems that they had been-using prior to joining SBFC. As a result, the SBFC offices e-mail time and expense data to the New York office in multiple formats and currencies. The New York office compiles these data, generates invoices for time and expenses, and submits these invoices to the project manager for approval before billing the client.
Business Need	Accurate time and expense reporting and timely invoicing are essential to SBFC's profitability. The fact that each SBFC office follows the processes and procedures for tracking time and expenses that they have been using prior to joining SBFC is becoming a problem. As SBFC's clients and offices have grown, so have the inconsistencies in time and expense reporting practices by the SBFC offices. The number of different languages and currencies in which SBFC operates has also led to confusion, inconsistencies, and inaccuracies. SBFC requires a solution that will allow the organization to report and track time and expenses centrally for all SBFC offices.

Exercise 1-1

Purpose

To document a high-level TO-BE state

Instructions

- Appoint a team leader who will ensure that the tasks in this exercise are completed.
- Take 10 minutes to read the case study behind the "Case Study" tab of your Participant Guide.
- From the description in the case study of the AS-IS state, describe in three to five sentences the TO-BE state you think the organization should implement to meet the business need. Generate a list of three to five potential projects that the organization would need to launch to support the implementation of the TO-BE state. Document your responses on a flip chart.
- Be prepared to discuss your reasons with the class.




Exercise 3-1

Purpose

To validate the solution vision and scope

Instructions

- Appoint a team leader who will ensure that the tasks in this exercise are completed.
- Revisit the case study behind the "Case Study" tab of your Participant Guide.
- Take 5 minutes to review the business strategy and high-level vision and scope statements provided on the following page.
- Work as a group to link the business strategy to the solution vision and scope by determining what is in scope and what is out of scope based on the case study, and then write your answers on the flip chart.
- Be prepared to discuss your reasons with the class.

Exercise 3-1 (continued)

Business Strategy

SBFC will work to consolidate employee time and expense reporting for all of SBFC's offices, better manage currency conversions, and improve the consistency of project tracking.

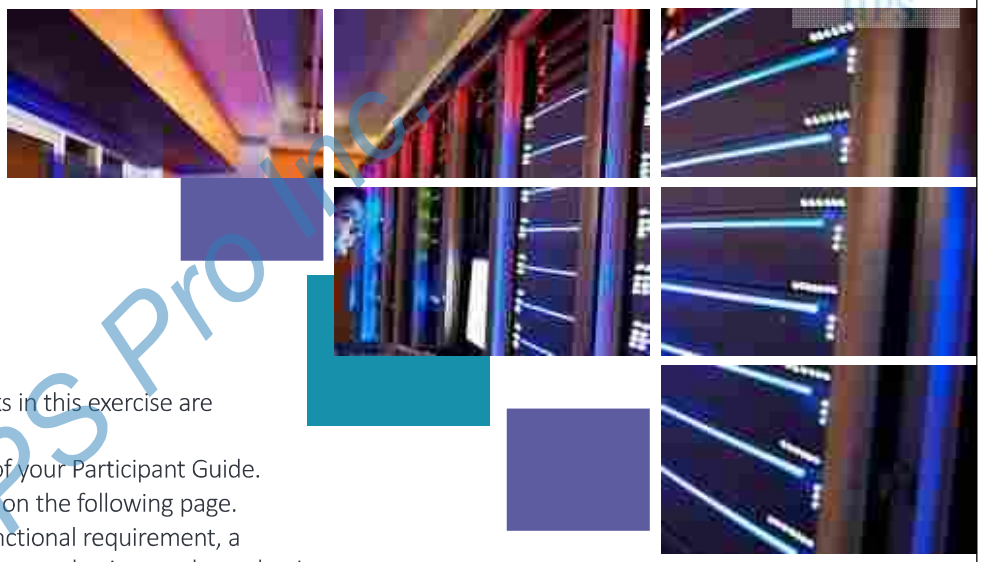
Solution Vision

As SBFC's clients and offices have grown, so have the inconsistencies in time and expense reporting practices by the SBFC offices. The number of different languages and currencies in which SBFC operates has also led to confusion, inconsistencies, and inaccuracies. SBFC will develop a time and expense submittal tool (TEST) that will be used by all SBFC offices to: consolidate time and expense data. The TEST tool will manage currency conversion automatically, allow SBFC personnel to submit billable and non-billable time and expense reports and receipts electronically, and provide reporting capabilities. The solution will fully integrate with existing resource and financial applications.

Solution Scope

The TEST solution will provide SBFC employees and contractors the ability to-

- Allow employees to request time off (for example, vacation, sick leave, family leave, jury duty) from supervisors
- Submit time reports for work completed
- Allow customers to view invoices through a Web site
- Track resource time spent on a project
- Enter project costs in the currencies in which the expenses were incurred
- Replace the existing electronic fund transfer (EFT) system and enterprise resource planning
- Track total project expenses
- Allow project personnel to electronically pay bills for outsourced project tasks
- Export time and expenses for reporting purposes
- Assign or remove resources for specific projects
- Submit electronic copies of receipts
- Export time and expenses data to existing SBFC resource and financial applications
- Submit cost for daily operations, such as telecommunication equipment, training, employee recruiting costs, and employee benefit costs



Exercise 4-1

Purpose

To identify different types of requirements

Instructions

- Appoint a team leader who will ensure that the tasks in this exercise are completed.
- Revisit the case study behind the "Case Study" tab of your Participant Guide.
- Take 10 minutes to review the statements provided on the following page.
- Work, as a group to identify each statement as a functional requirement, a nonfunctional requirement, a transition requirement, or a business rule, and write your answers on the flip chart.
- Be prepared to discuss your answers with the class.

Exercise 4-1 (continued)

		Functional Requirement	Nonfunctional Requirement	Transition Requirement	Business Rule
1.	The system must enable employees and contracted consultants to prepare and submit time reports for billable and nonbillable (administrative) work				
2.	The new system must be rolled out in a series of releases based on country so all offices within a single country will be included in the same release				
3.	The new system must be rolled out in a series of releases based on country so all offices within a single country will be included in the same release				
4.	Initial training must be provided for all users of the new system before the system is launched				
5.	The system must enable employees and contracted consultants to record their expenses in the currencies in which the expenses were incurred (even if that means an expense report includes multiple currencies)				
6.	The system must provide security to permit and prevent application feature access by user type				
7.	The system must enable employees to submit receipts electronically so that digitized images of the receipts are viewable in conjunction with the electronic expense report				

Exercise 4-1 (continued)

		Functional Requirement	Nonfunctional Requirement	Transition Requirement	Business Rule
8.	The system must enable Accounting to check, adjust, approve, and print all time, expenses, and receipts from all projects				
9.	The system must limit project team members to New only their own archived time-and-expense reports and not those of other team members				
10.	The system must enable existing time-and-expense reporting systems to be available during the implementation period of the new system				
11.	The system must enable the project manager to create new project codes in the system				
12.	Employees may not expense more than $5,000 per period without the approval of executive management				
13.	The system must provide self-help menus for users				
14.	The system must enable project managers to view, sort, and print time-and-expense reports submitted by all team members for any project they manage				

Exercise 4-1 (continued)

		Functional Requirement	Nonfunctional Requirement	Transition Requirement	Business Rule
15.	The system must enable accountants to create, control, and delete user accounts to the system for employees and contracted consultants without deleting the time-and-expense records submitted by the employees and contracted consultants				
16.	The system must be available 24 hours a day, 365 days a year				
17.	The system must enable the IT help desk to manage user administration, including account setup, user sign-on, and password management				
18.	Personnel do not have the authority to alter their time-and-expense data once they have been approved by management				
19.	The system must export all time-and-expense data that have been approved by project managers, supervisors, and the accounting department into the enterprise resource planning (ERP) system in the currencies in which the expenses were incurred				
20.	The system must provide subsecond response time to users				
21.	The system must export all expense data that have been approved by project managers, supervisors, and the accounting department into the electronic fund transfer (EFT) system to initiate the direct-deposit process				

Exercise 4-1 (continued)

		Functional Requirement	Nonfunctional Requirement	Transition Requirement	Business Rule
22.	The system must handle up to 1,000 simultaneous users				
23.	Data from existing expense and time reporting tools must be migrated into the new system				
24.	Supervisors have the authority to view, approve, modify, or print individual employees' and contractors' time and expense reports				
25.	Modifications made to data in existing time and expense reporting systems during the transition period must be reflected in the production data of the new system				

Exercise 5-1

Purpose

To understand the risks during planning and eliciting requirements

Instructions

- Appoint a team leader who will ensure that the tasks in this exercise are completed.
- Revisit the case study behind the "Case Study" tab of your Participant Guide.
- Consider this scenario: The business sponsor has just informed the project team that the time frame for the project plan has been cut by 25 percent. What risks will the organization face as a result and what strategies can you employ to respond to the risks? Write your risks and risk response strategies on the flip chart.
- Be prepared to discuss your reasons with the class.

Exercise 6-1

Purpose

To analyze and document effective requirements

Instructions

- Appoint a team leader who will ensure that the tasks in this exercise are completed.
- Revisit the case study behind the "Case Study" tab of your Participant Guide.
- Take five minutes to review the requirements provided below.
- Work as a group to determine if the five requirements meet the criteria of effective requirements. If they do not, rewrite the requirements on the flip chart. To rewrite the requirements, you may need to make assumptions about business rules followed by the organization in the case study. Document those assumptions on the flip chart.
- Be prepared to discuss your reasons with the class.

Exercise 6-1 (continued)

Ineffective Requirements

- View information entered into the system in the past
- Send reminders to users
- Back up data regularly
- The system must be available all of the time
- The system must use the company-wide language

Exercise 7-1

Purpose

To identify when specific types of models should be used and why

Instructions

- Appoint a team leader who will ensure that the tasks in this exercise are completed.
- Revisit the case study behind the "Case Study" tab of your Participant Guide.
- Take 10 minutes to review the business needs provided on the following page.
- Work as a group to determine what modeling technique should be used for each business need and why. Write your answers on the flip chart.
- Be prepared to discuss your reasons with the class.

Exercise 7-1 (continued)

Business Need	Type of Model	Rationale
SBFC needs to identify how an employee and a contractor record their time and expenses for individual projects		
SBFC needs to model how employees, contractors, and supervisors will interact with the system to submit time and expense reports		
SBFC needs to identify what type &Information the system will be required to capture (such as employee (D, project codes, expense type, and so on) and the relationship between the information		
SBFC needs to determine how certain objects within the system, such as the status of an expense report, will change when it has been entered into the system, approved by supervisor, invoiced to the customer, and so on		
SBFC needs to determine which users will require different administrative permissions based on their job position and title		
SBFC maintains offices in Europe; Southeast Asia; Australia; and North. South, and Central America; and will need to ensure they understand which offices are in which geographical areas to determine how best to release the new system in stages		

Exercise 1-1 Solution: Defining the AS-IS and the TO-BE

Sample TO-BE Description

NOTE: The TO-BE state description and list of projects shown below are samples. The solution developed by participants to this exercise may differ.

TO-BE State Description

SBFC must implement a centralized tool that allows employees and contractual consultants to record their time and expenses electronically. The tool must have the ability to record expenses in multiple currencies and convert the expenses automatically. The tool must allow project managers to approve time and expense data for individual projects. Once time and expense data are approved, the New York office must be able to use the tool to generate invoices for clients in multiple currencies

List of Projects to Implement the TO-BE State

1. Purchase and customize a commercial-off-the-shelf expense reporting tool.
2. Build an expense reporting tool in-house.
3. Improve expense and time reporting processes.
4. Develop a training program for personnel on how to use the new expense reporting tool.
5. Choose one tool currently used by an SBFC office and expand its use to all other SBFC offices.

Exercise 3-1 Solution: Solution Vision and Scope

In Scope	Out of Scope
• Submit time reports for work completed • Track resource time spent on a project • Enter project costs in the currencies in which the expenses were incurred • Track total project expenses • Export time and expenses for reporting purposes • Submit electronic copies of receipts • Export time and expenses data to existing SBFC resource and financial applications	• Allow employees to request time off (for example, vacation, sick leave, family leave, jury duty) from supervisors • Allow customers to view invoices through a Web site • Replace the existing electronic fund transfer (EFT) system and enterprise resource planning • Allow project personnel to electronically pay bills for outsourced project tasks • Assign or remove resources for specific projects • Submit costs for daily business operations, such as telecommunications equipment, training, employee recruiting costs, and employee benefit costs

Exercise 4-1 Solution: Understanding Requirements

		Functional Requirement	Nonfunctional Requirement	Transition Requirement	Business Rule
1.	The system must enable employees and contracted consultants to prepare and submit time reports for billable and nonbillable (administrative) work	X			
2.	The new system must be rolled out in a series of releases based on country so all offices within a single country will be included in the same release			X	
3.	The new system must be rolled out in a series of releases based on country so all offices within a single country will be included in the same release				X
4.	Initial training must be provided for all users of the new system before the system is launched			X	
5.	The system must enable employees and contracted consultants to record their expenses in the currencies in which the expenses were incurred (even if that means an expense report includes multiple currencies)	X			
6.	The system must provide security to permit and prevent application feature access by user type		X		
7.	The system must enable employees to submit receipts electronically so that digitized images of the receipts are viewable in conjunction with the electronic expense report	X			

Exercise 4-1 Solution: Understanding Requirements

		Functional Requirement	Nonfunctional Requirement	Transition Requirement	Business Rule
8.	The system must enable Accounting to check, adjust, approve, and print all time, expenses, and receipts from all projects	X			
9.	The system must limit project team members to New only their own archived time-and-expense reports and not those of other team members		X		
10.	The system must enable existing time-and-expense reporting systems to be available during the implementation period of the new system			X	
11.	The system must enable the project manager to create new project codes in the system	X			
12.	Employees may not expense more than $5,000 per period without the approval of executive management				X
13.	The system must provide self-help menus for users		X		
14.	The system must enable project managers to view, sort, and print time-and-expense reports submitted by all team members for any project they manage	X			

Exercise 4-1 Solution: Understanding Requirements

		Functional Requirement	Nonfunctional Requirement	Transition Requirement	Business Rule
15.	The system must enable accountants to create, control, and delete user accounts to the system for employees and contracted consultants without deleting the time-and-expense records submitted by the employees and contracted consultants	X			
16.	The system must be available 24 hours a day, 365 days a year		X		
17.	The system must enable the IT help desk to manage user administration, including account setup, user sign-on, and password management	X			
18.	Personnel do not have the authority to alter their time-and-expense data once they have been approved by management				X
19.	The system must export all time-and-expense data that have been approved by project managers, supervisors, and the accounting department into the enterprise resource planning (ERP) system in the currencies in which the expenses were incurred	X			
20.	The system must provide subsecond response time to users		X		
21.	The system must export all expense data that have been approved by project managers, supervisors, and the accounting department into the electronic fund transfer (EFT) system to initiate the direct-deposit process	X			

Exercise 4-1 Solution: Understanding Requirements

		Functional Requirement	Nonfunctional Requirement	Transition Requirement	Business Rule
22.	The system must handle up to 1,000 simultaneous users		X		
23.	Data from existing expense and time reporting tools must be migrated into the new system			X	
24.	Supervisors have the authority to view, approve, modify, or print individual employees' and contractors' time and expense reports				X
25.	Modifications made to data in existing time and expense reporting systems during the transition period must be reflected in the production data of the new system			X	

Exercise 5-1 Solution: Planning and Eliciting Requirements

Risks	Responses
Employees will not be able to complete project tasks within the required time frame, so the solution will not be delivered on schedule	Add additional resources to the project
All functionality required by the customer cannot be implemented within the required time frame, so the scope of the project will not be met	Reprioritize project requirements with the business sponsor
Funding is not available to add resources to complete project tasks within the required timeframe, resulting in the delayed delivery of the solution	Request additional funding from business sponsor
Time to conduct solution testing is reduced; therefore, the solution may be delivered with defects	Prioritize testing tasks to minimize risk of defects delivered with the final solution
Training documentation for users cannot be developed before solution delivery; therefore, users may not be able to use the system	Training documentation is completed and delivered after solution delivery

Exercise 6-1 Solution: Analyzing and Documenting Requirements

Ineffective Requirements	Effective Requirements
View information entered into the system in the past	The system shall allow SBFC employee and consultants to view their own expenses reports they have submitted within the past six months. The system shall allow SBFC supervisors to view their direct employee and consultant's expense reports that they have submitted within the past six months. The system shall allow SBFC project managers to view their project's employee and consultant's expense reports that they have submitted within the past six months. The system shall allow SBFC accountants to view all employee and consultant's expense reports that they have submitted within the past six months.
Send reminders to users	The system shall send e-mail reminders to managers who have outstanding expense reports flagged as "waiting for approval" that are more than seven days old
Back up data regularly	The system shall automatically back up data each night at 12:00 am. EST. A copy of the backup shall be kept on-site for recovery purposes. A second copy of the backup shall be kept off-site for business continuity purposes

Exercise 6-1 Solution: Analyzing and Documenting Requirements

Ineffective Requirements	Effective Requirements
The system shall automatically back up data each night at 12:00 a.m. EST. A copy of the backup shall be kept on-site for recovery purposes. A second copy of the backup shall be kept off-site for business continuity purposes	The system must be available at least 99.9 percent of the time during the following hours: 12 a.m. to 11 p.m. EST
The system must use the company-wide language	The system interface must be in English, using business terms as defined in the company. business glossary

Exercise 7-1 Solution: Modeling Requirements

Business Need	Type of Model	Rationale
SBFC needs to identify how an employee and a contractor record their time and expenses for individual projects	Workflow model	To highlight the hand-offs between various key departments or individuals
SBFC needs to model how employees, contractors, and supervisors will interact with the system to submit time and expense reports	Use case model	To document the user/ system interaction to meet a specific user goal
SBFC needs to identify what type &Information the system will be required to capture (such as employee (D, project codes, expense type, and so on) and the relationship between the information	Logical data model	To model the key information needed to perform a process
SBFC needs to determine how certain objects within the system, such as the status of an expense report, will change when it has been entered into the system, approved by supervisor, invoiced to the customer, and so on	State model	To document the various information transformations that take place while proceeding through a process
SBFC needs to determine which users will require different administrative permissions based on their job position and title	Organizational Model	To document the organization's authority structure
SBFC maintains offices in Europe; Southeast Asia; Australia; and North. South, and Central America; and will need to ensure they understand which offices are in which geographical areas to determine how best to release the new system in stages	Location model	To describe organizational differences among different offices