Incepting Enterprise Applications

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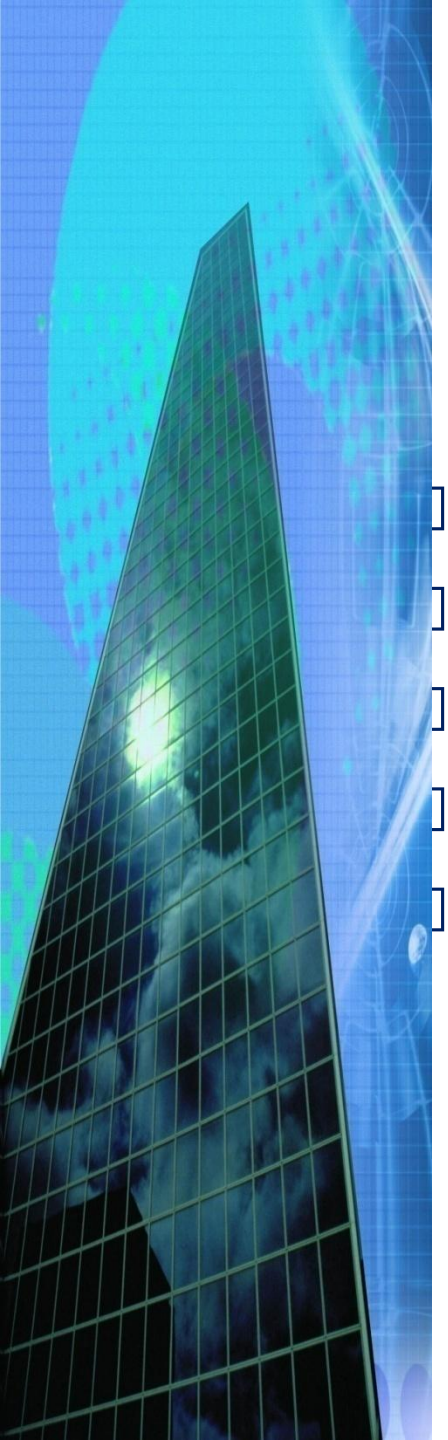
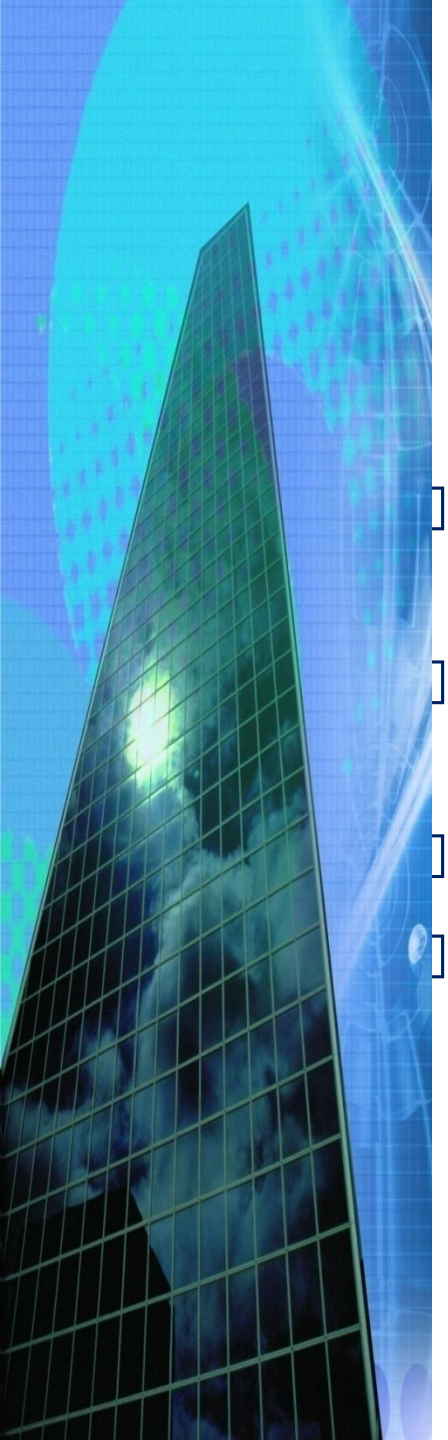


Introduction to Inception

Incepting an enterprise application is the first life cycle phase of raising enterprise applications that primarily consists of the following activities:

- Enterprise analysis
- Business modeling
- Requirements elicitation & analysis
- Requirements validation
- Planning and estimation



Enterprise Analysis

Enterprise analysis is a holistic analysis of business enterprise that is typically done by business analysts, and comprise of following key activities:

- Identification of business opportunities and business changes.
- Identification of various stakeholders across business units.
- Collection of business requirements and prioritizing them.
- Define business roadmap with scope and exclusions.

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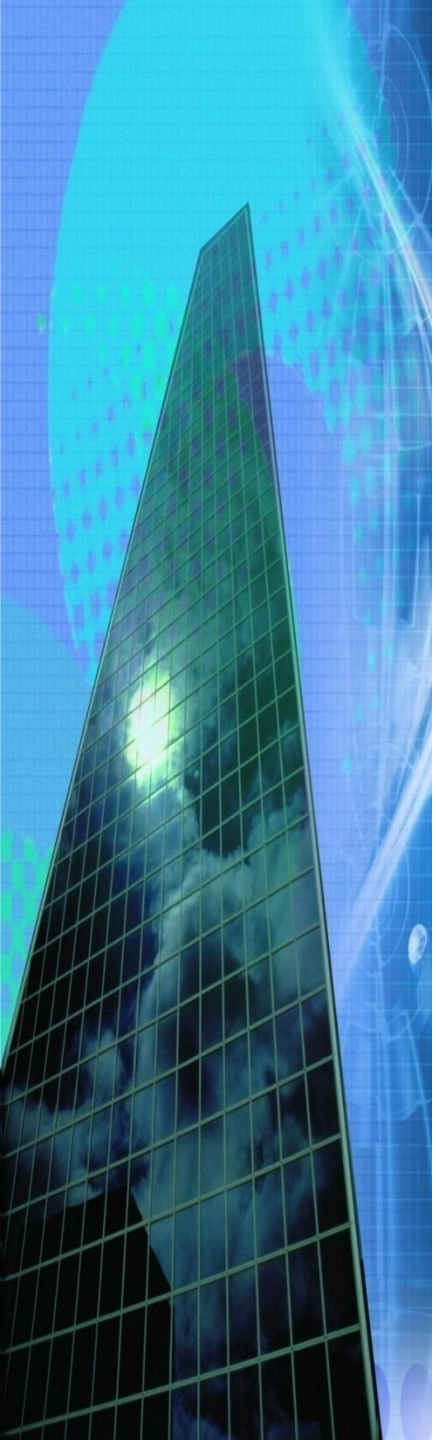
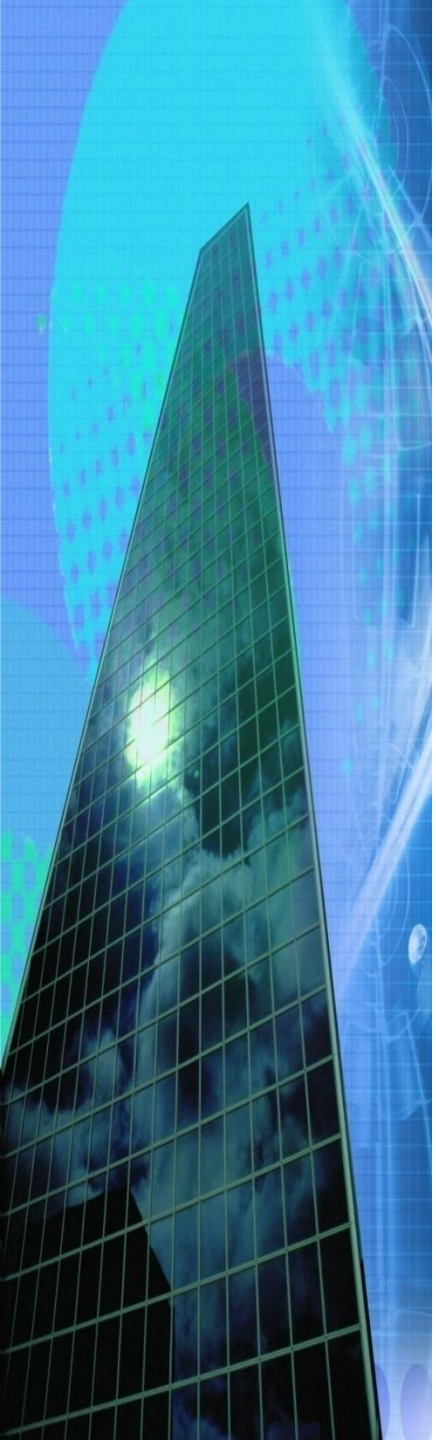


Enterprise Analysis (Contd...)

- Determines the high level investment needed for the enterprise
- Conduct feasibility study for any changes proposed
- Conduct risk analysis and competitive analysis.
- Decides on build-or-buy strategy
- Create RoIe business cases with proper justification
- Get the necessary approvals from the sponsors.



Business Modeling

- Business modeling helps one to understand the business information and the business processes which an enterprise uses to fulfill its business goals.
- Enterprise analysis could lead to two forms of programs/projects:
  - Creating something new/development project
  - Extension/change to something which already exists/re-engineering project
- Business modeling is done by business analysts.

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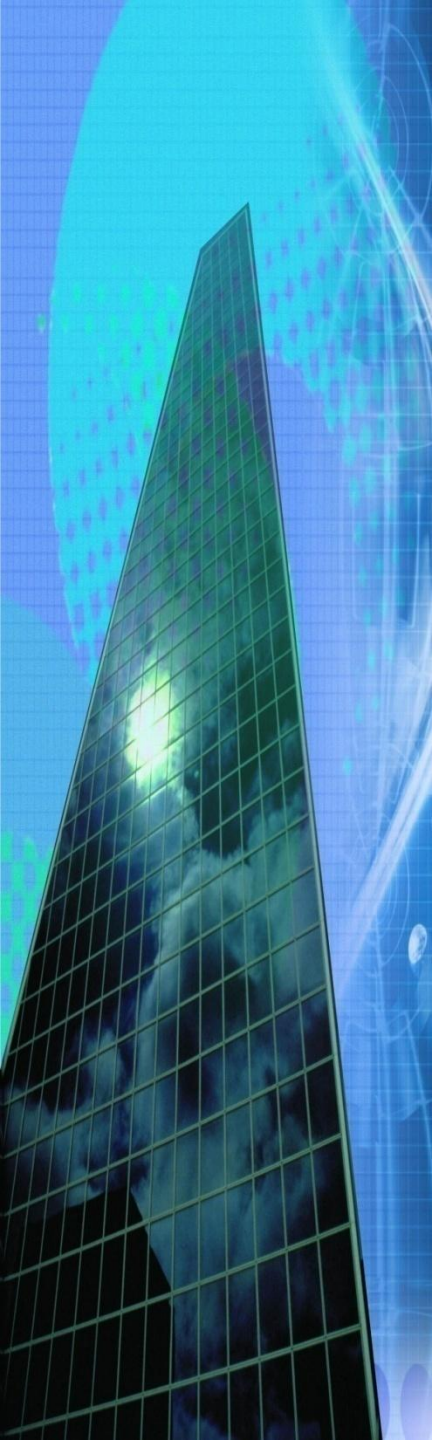
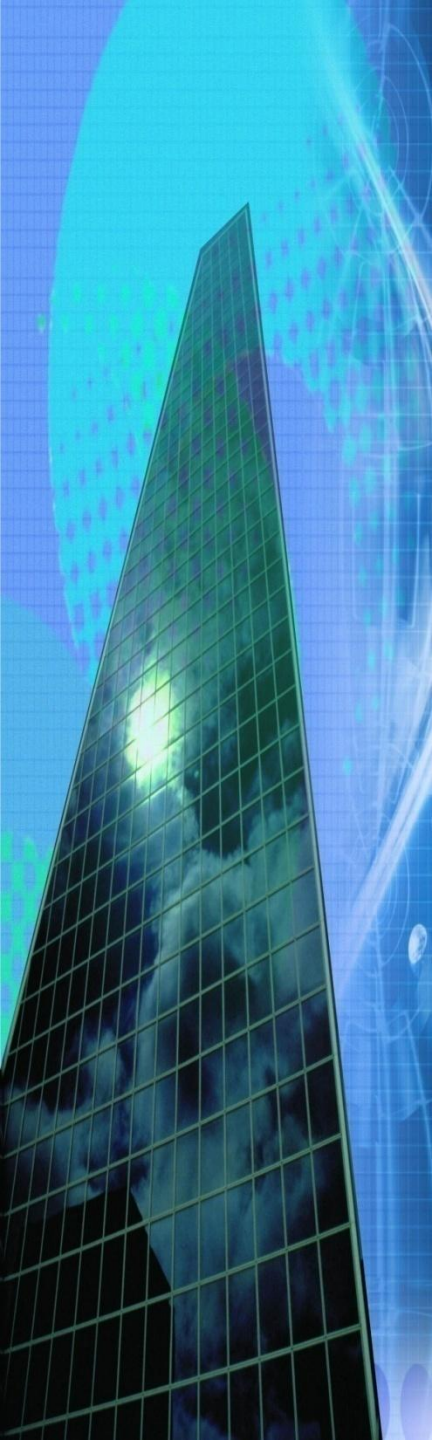


Business Modeling (Contd...)

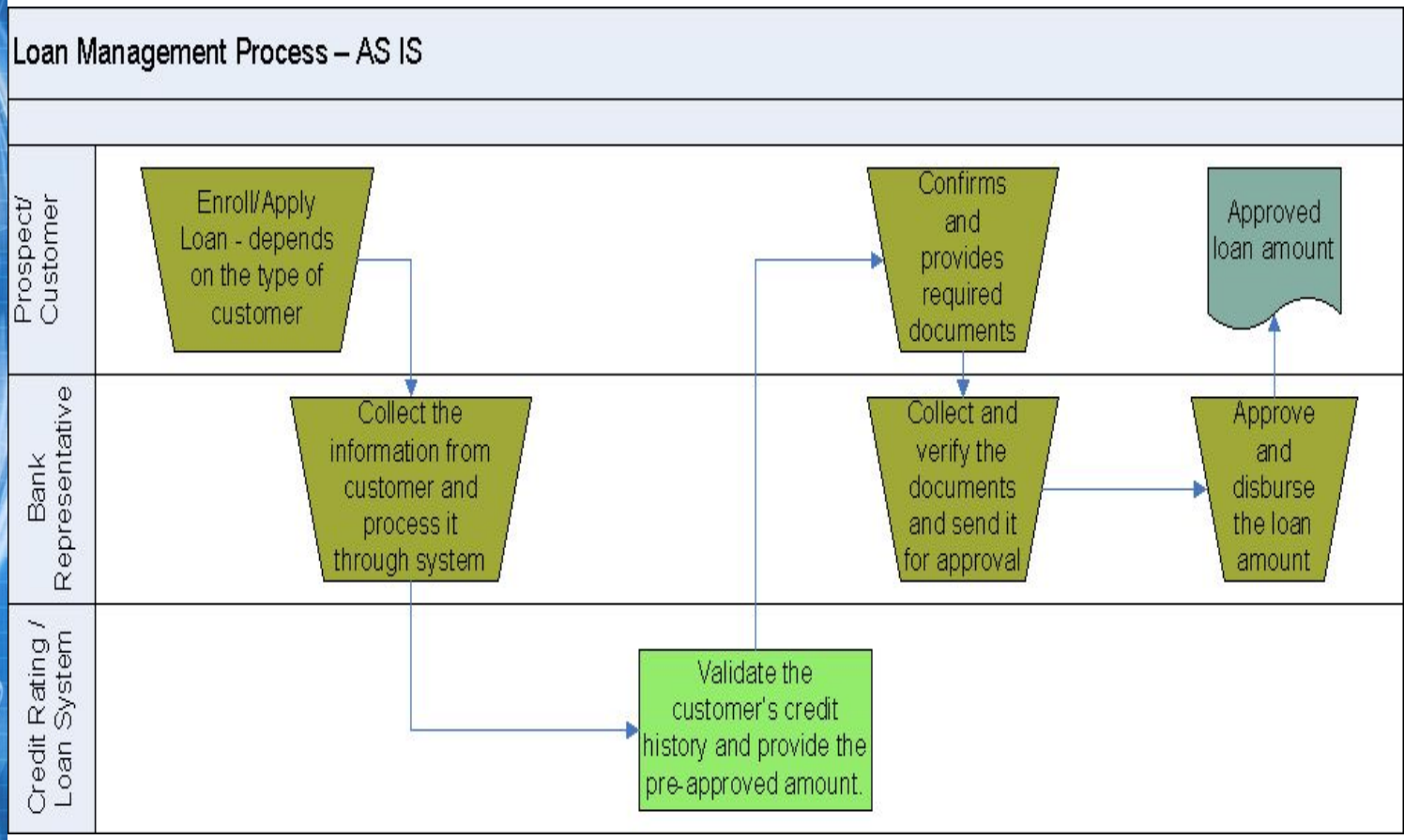
- To understand the business problem at hand it's essential to have AS-IS and TO-BE modeling of the business processes
  - AS-IS business process model reflects the existing business process.
  - TO-BE business process model reflects the desired business process.



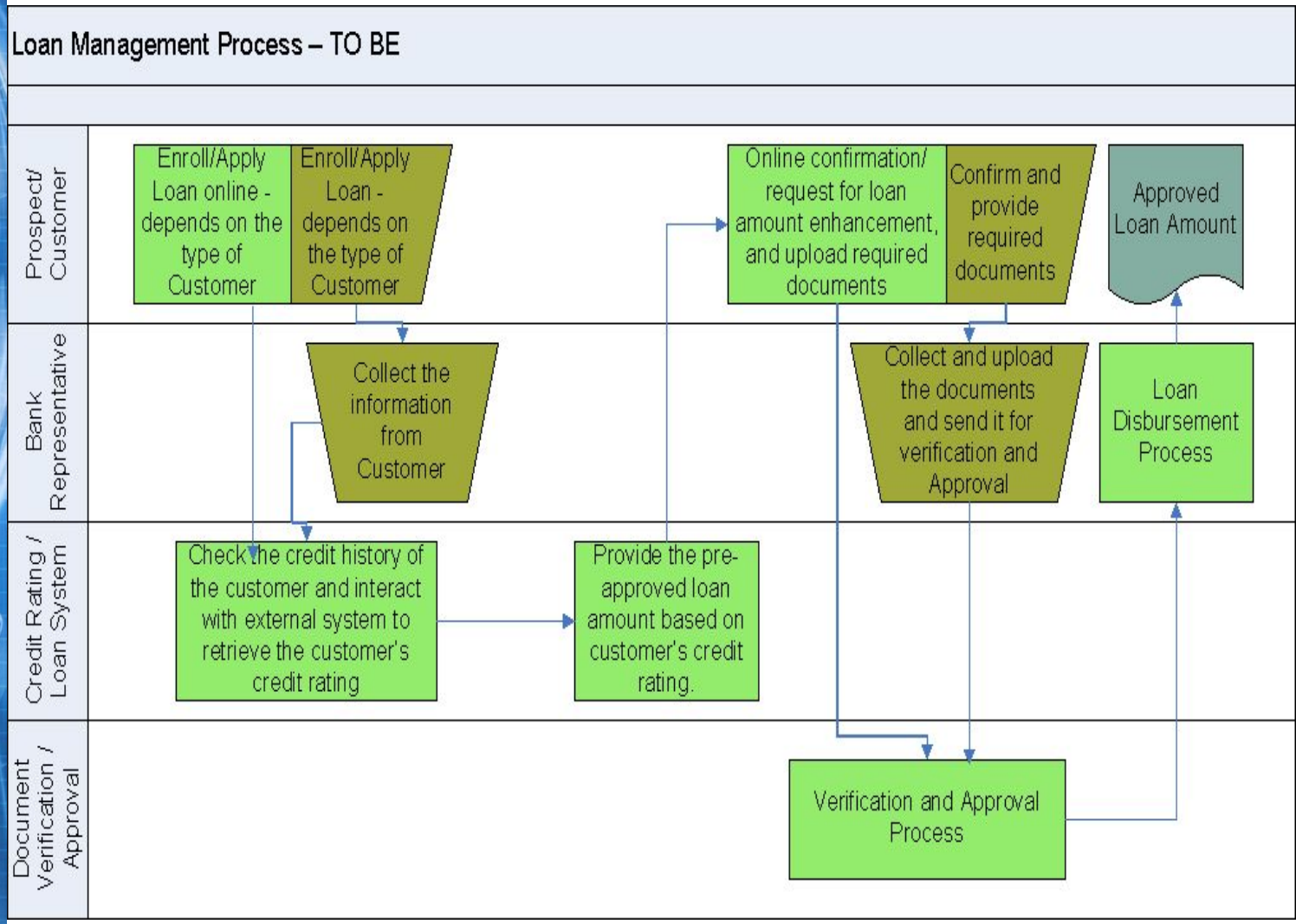
Introduction to Case Study-EM Bank

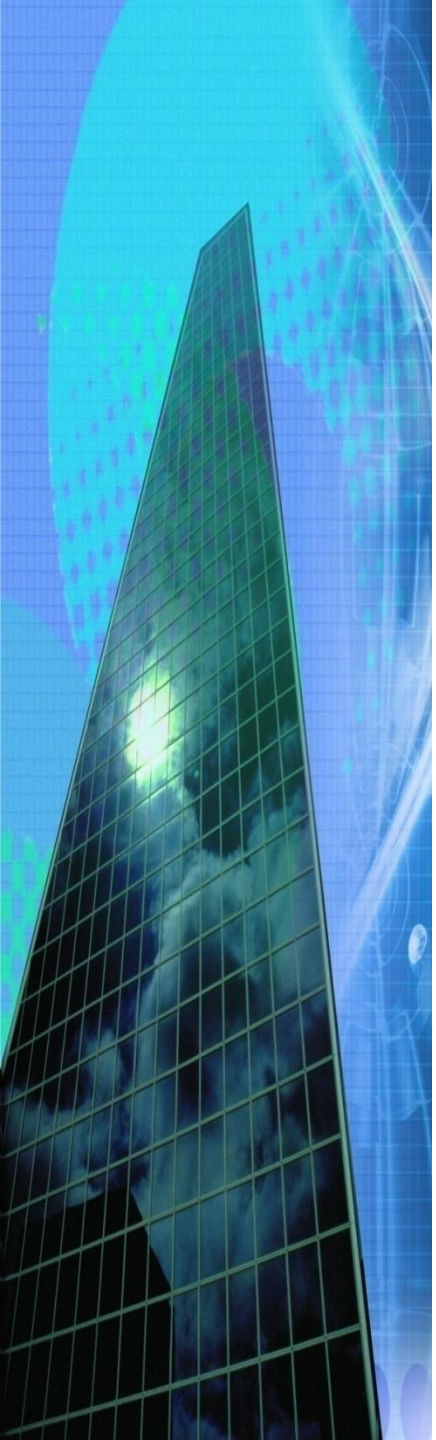
- Easy Money Bank(EM Bank) is a leading bank with its headquarters in Europe and offices and presence in another 50 countries.
- Some of the services offered by the EM bank are core banking , investment banking , mortgage and wealth management.
- To keep up with the market competition, the bank's management has decided to expand the loan offerings and to reach out to more number of customers (both existing and new).
- Business Analyst has performed the task of business modeling and has come out with the AS-IS and TO-BE processes depicted in the two diagrams shown next.

EM Bank- 'AS-IS' Process



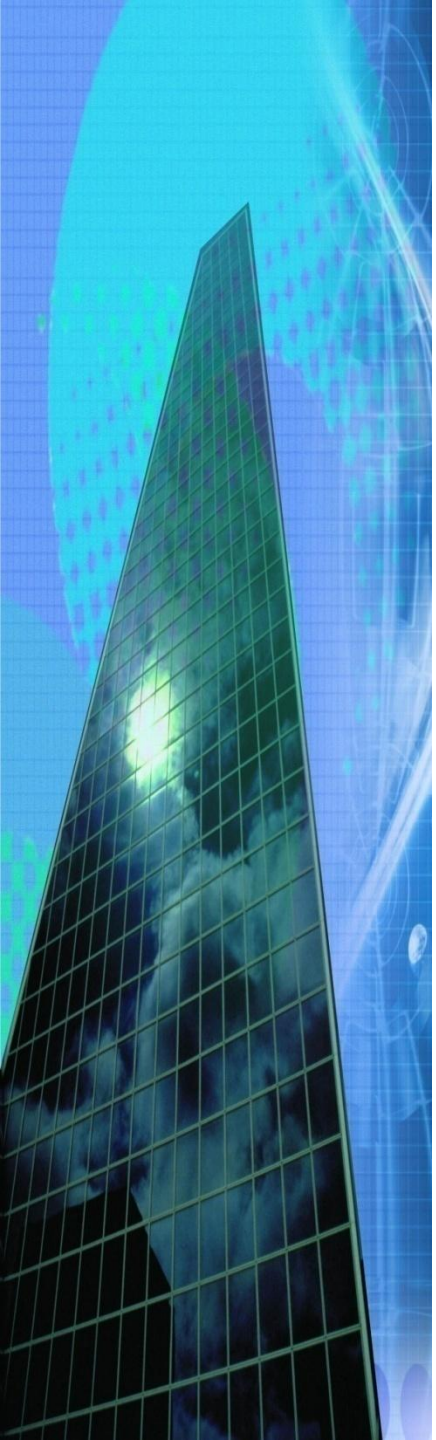
EM Bank- 'TO-BE' Process





Requirement Elicitation and Analysis

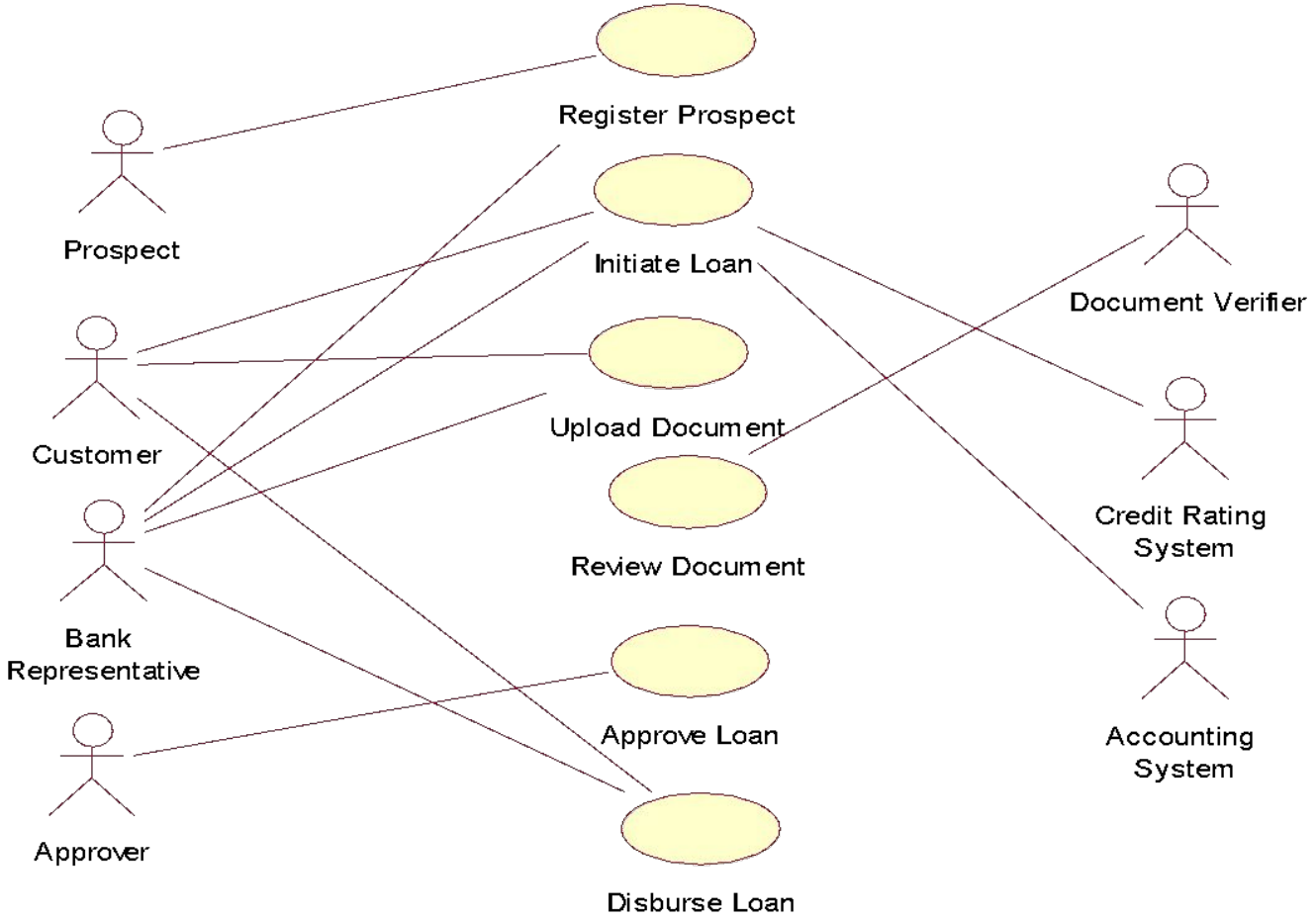
- Requirements elicitation and analysis is a systematic approach of capturing client requirements, analyzing them and documenting the problem domain.
- There are various kinds of requirements which need to be elicited and are broadly divided into two categories:
  - **Functional Requirements:** capture what the system is expected to do - mechanisms such as Use cases and prototypes are used to depict functional requirements.
  - **Non Functional Requirements(NFR):** NFRs capture how the system does what it is expected to do with respect to its constraints and expected qualities of service (QoS) such as reliability, scalability, portability, usability, availability, security and performance.

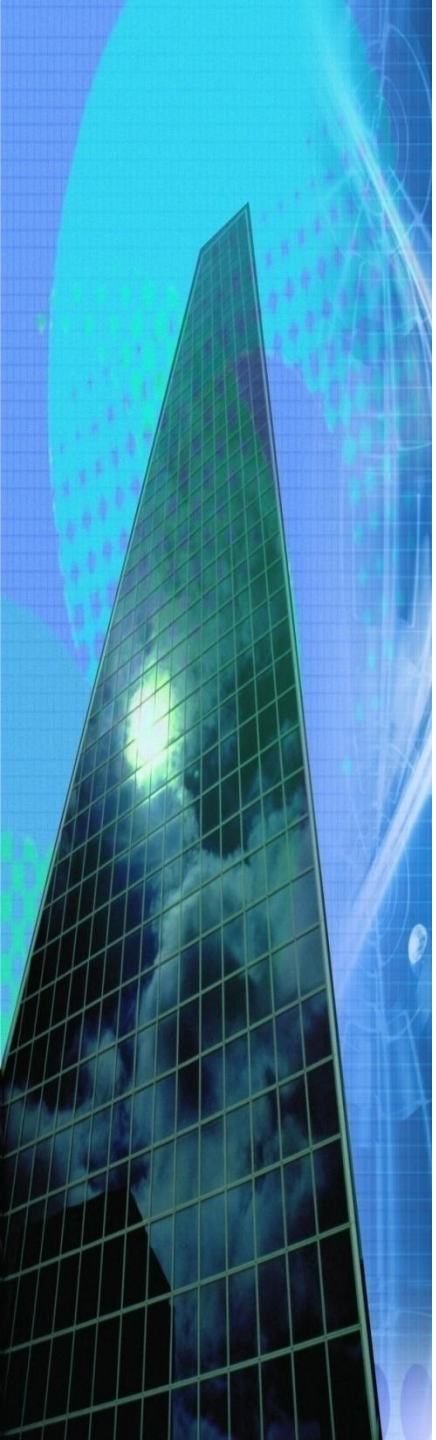


Functional Requirements

- Use case diagram
  - Entities – Actors – represents a role
    - Human users, external systems, external devices
    - To find out Actors
      - Who is going to use the system?
      - Eg: Customer, Reviewer and Approver
      - Eg: Accounting system, Credit rating system
  - Functional reasons – Usecases
    - Why does an actor need to interact with the system under consideration?
    - Why does the credit rating system interact with the system?
  - Relationship
    - Generalization, Extends, Uses/include

LoMS Use Case Diagram





Relationship

- Generalization relationship among Actors

  Bank Executive

    Bank representative, Approvar, Document Verifier

- Generalization relationship among Usecases

  Initiate Loan

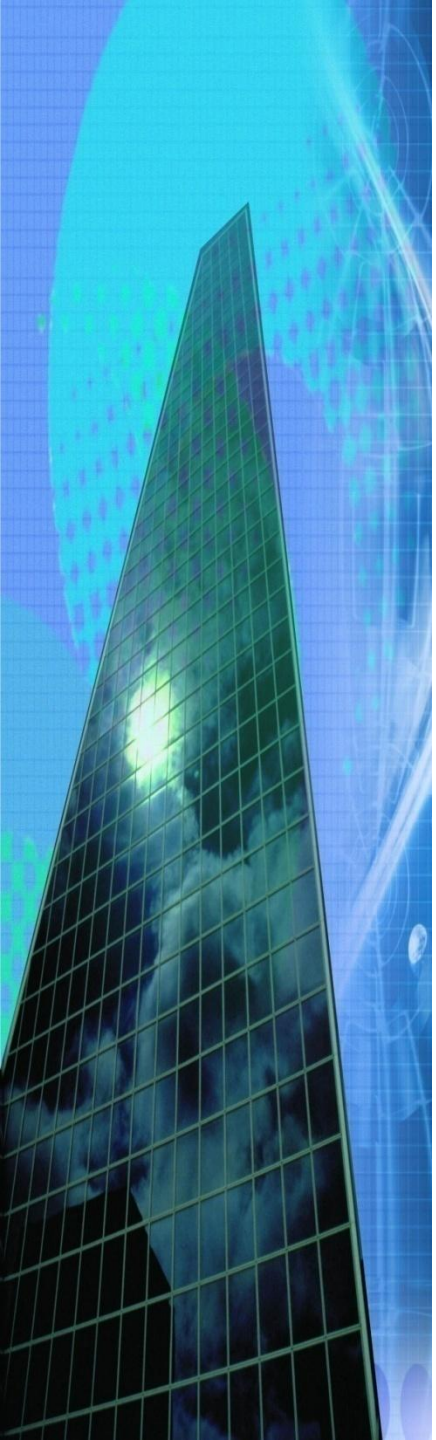
    Initiate loan by customer, Initiate loan by bank representative

- Extends relationship

  Provide credit rating extends Initiate loan

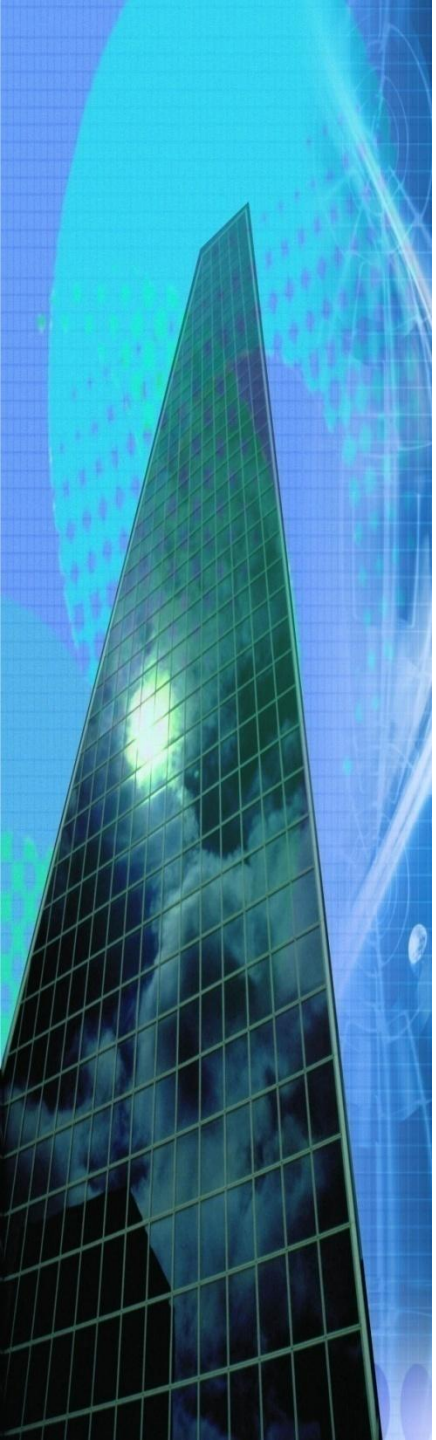
- Uses/Include relationship

  Initiate loan include provide customer information



Elements of Use Case Specification

UCS Elements	Description
Actors	List of participating actors in the use case
Description	Brief description of the use case
Preconditions	Prerequisites to start the use case
Post conditions	Outcome of the usecase
Priority	Business criticality
Trigger	The event that initiate the use case
Primary Scenario	Primary flow of use case
Alternate scenario number	List of alternate flows
Field Definitions	Size, type, values
Exceptions	Exceptional flows
Assumptions	Assumptions if any
User Interface	Reference to prototype
Related Use cases	List of related use cases
Non functional requirements	Capture NFR



User Prototypes

- The human actors identified need to interact with the system
- This leads to creation of UI or user prototypes or wireframes
- Purpose
  - To allow business users to validate the user interface
  - Look and feel perspective
  - To find out usability requirements like navigability
  - To understand the exceptions and variations in use cases

Non Functional Requirements

- The NFRs of an enterprise application have a very high impact on the way the system has to be architected, designed and deployed. In fact, NFRs play a pivotal role in the validation of the architecture and design of enterprise applications.

Key NFR	Description
Performance requirements	Capture values such as peak load, throughput, response time
Usability requirements	Effective use of screen space, internationalization, easy navigability
Scalability Requirements	Data storage, planning for growth, resource utilization

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Non Functional Requirements (Contd...)

Key NFR	Description
Interface requirements	Steps for integration of the application with other systems
Operating requirements	Security, Maintainability and Reliability requirements
Lifecycle requirements	Testing , portability, reusability
Regulatory requirements	Legal and other compliances to be followed

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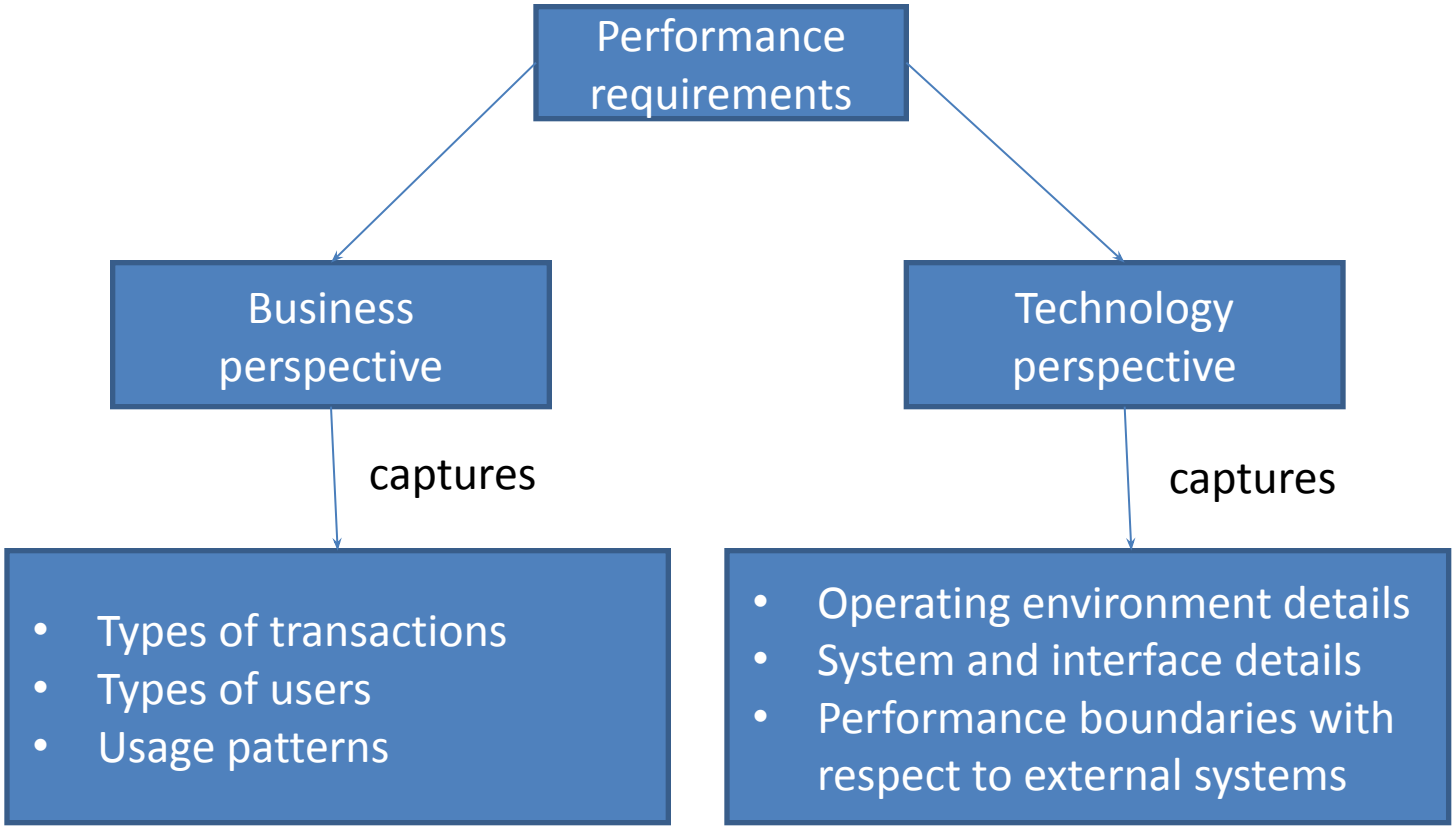
Non Functional Requirements (Contd...)

- Performance Requirements are related to the measure of performance constraints.



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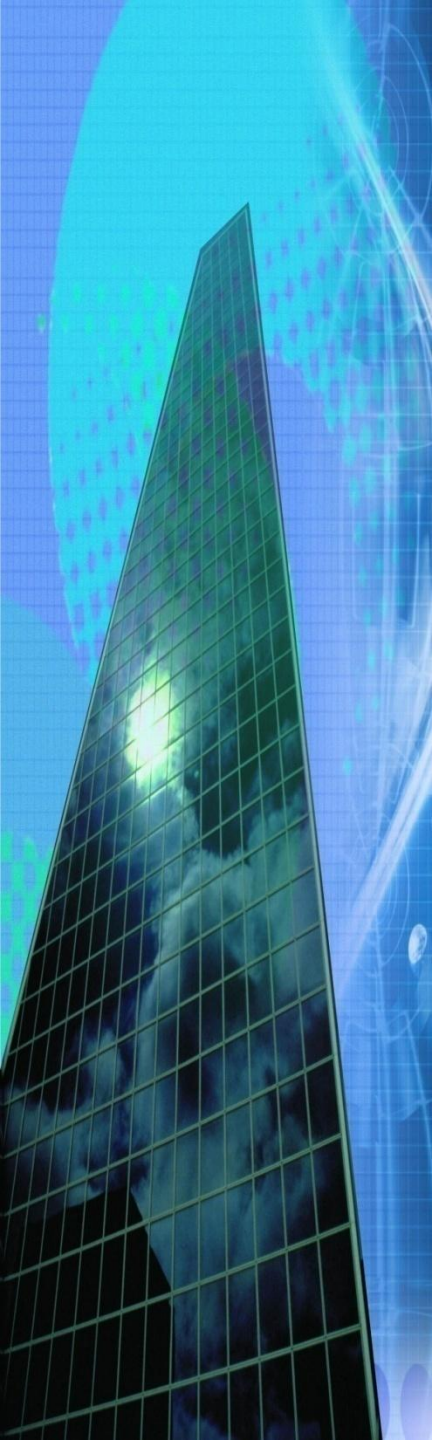
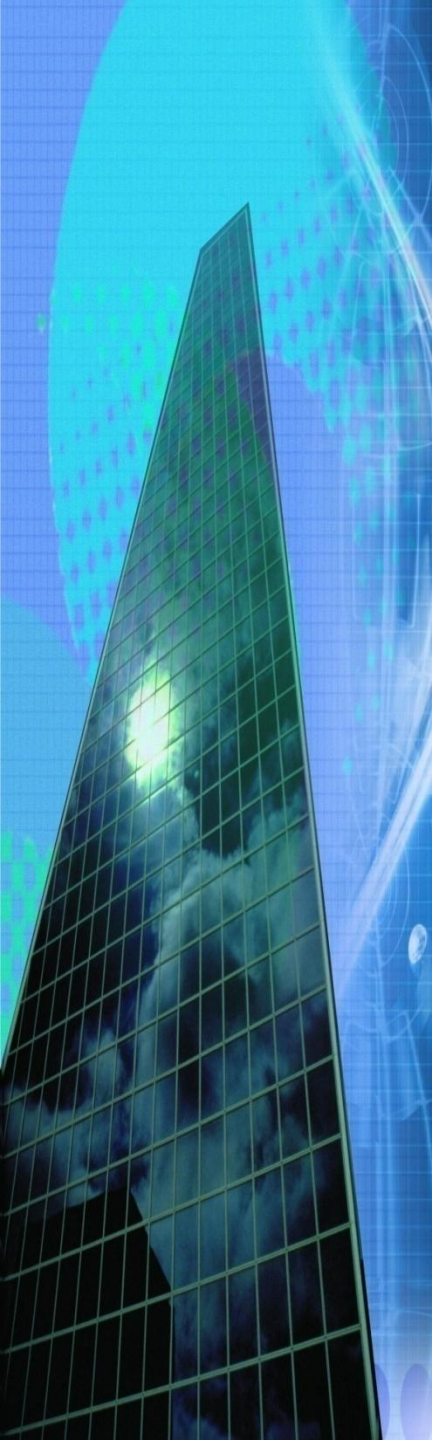


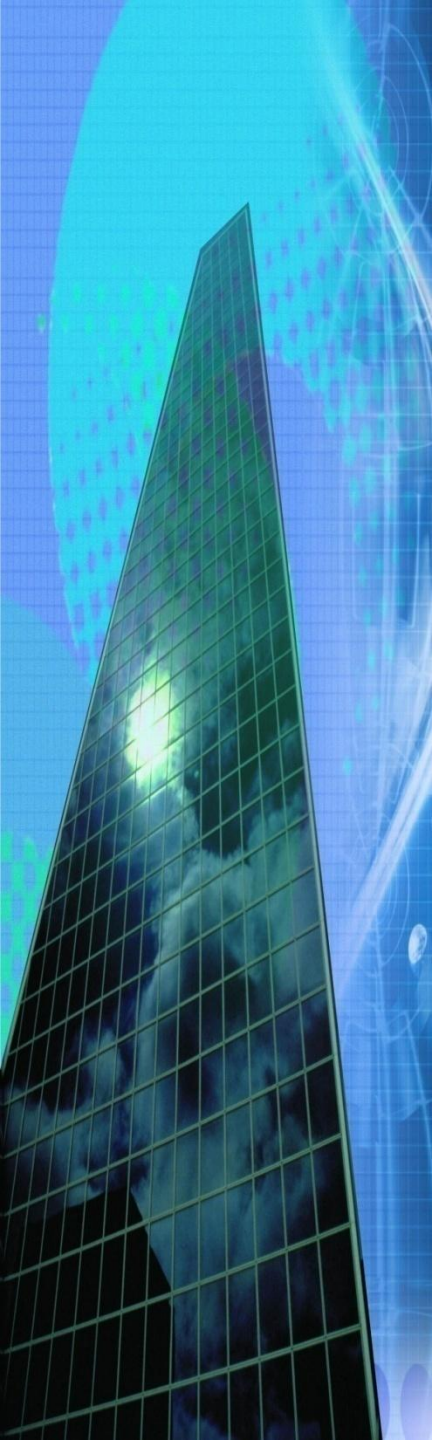
Non Functional Requirements (Contd...)

- Usability Requirements dictate the user experience
- Operating requirements are the constraints on the enterprise application which lay down the requirements related to security, maintainability and reliability of enterprise applications.
- Lifecycle requirements relate to needs that an application should fulfill at one or more stages of its lifecycle, and can be captured in terms of testability, reusability, portability and installability to name a few.
- Regulatory requirements capture the restrictions and the legal requirements related to certain categories of sensitive data, and ways in which they can be processed.



Software Requirement Specification

SRS Elements	Description
Business Overview	Brief overview of what an enterprise does
System Overview	Overview of the system under consideration
Functionality list	List of business functionalities
Use cases	List of identified use cases
NFR	List of non functional requirements
Prototypes	Wireframes of the primary functionalities



Requirements Validation

- Requirements validation is an exercise which is typically facilitated by business analysts to ensure that the requirements stated during requirement elicitation and analysis are meeting the business objectives.
- Requirements validation typically comprise of the following three activities:

  - Ensuring the coverage of all business needs identified during enterprise analysis and requirements elicitation phase.

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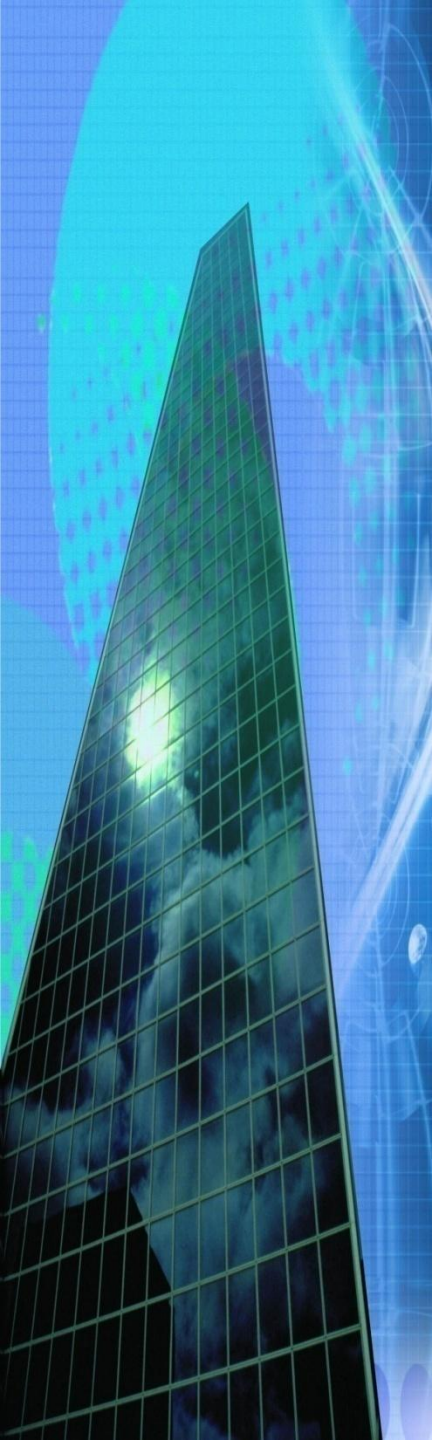
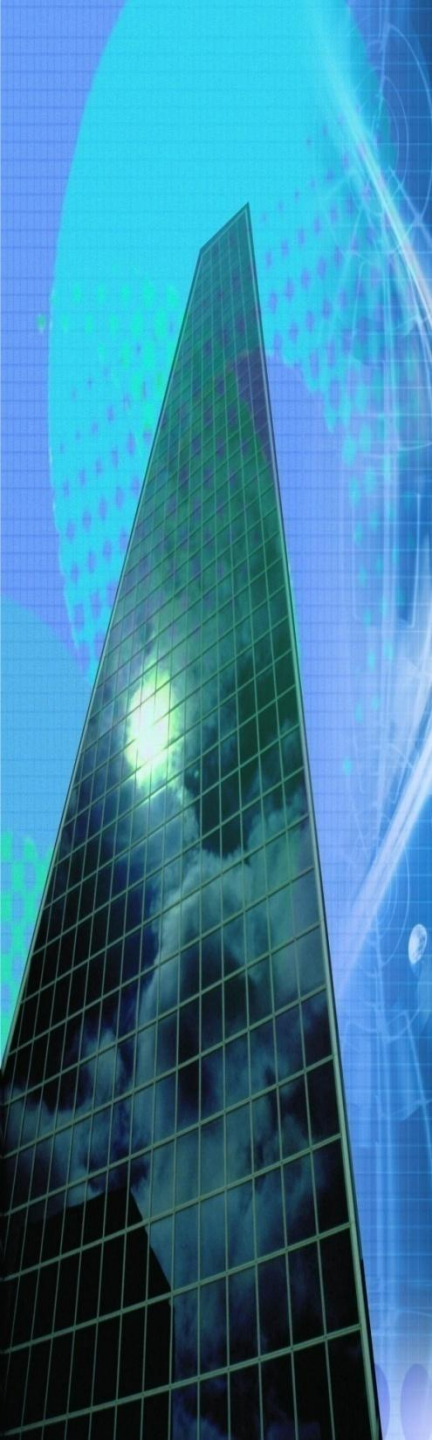


Requirements Validation (Contd...)

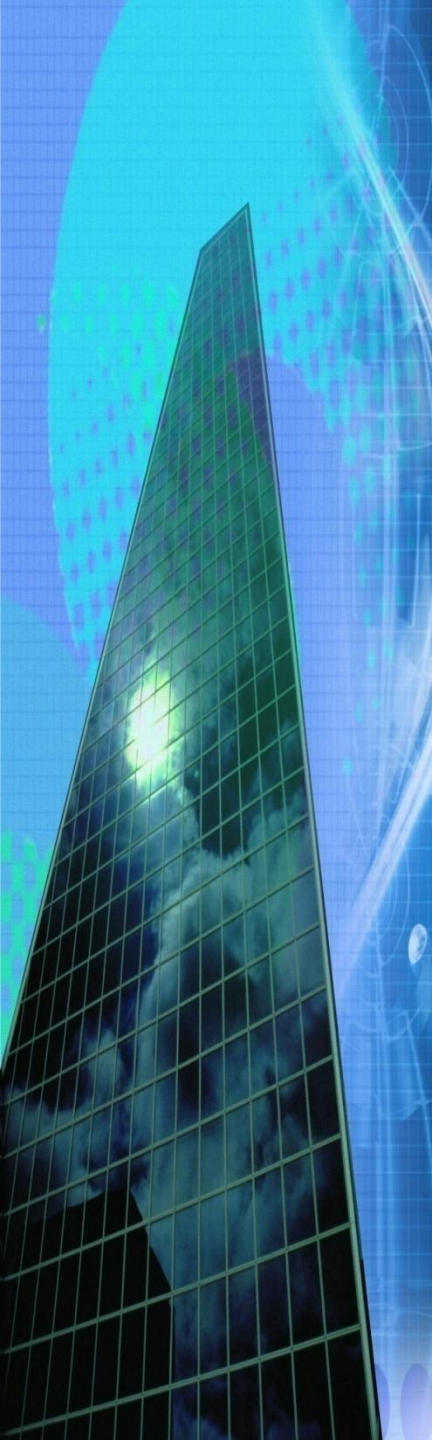
- Ensuring the requirements documentation sanctity by subject matter experts and end users.
- Ensuring the feasibility of requirements to the extent possible.

- There are many ways to perform requirement validation such as requirement traceability matrix (RTM), user acceptance test (UAT) cases and proof of concepts(PoC).



Planning and Estimation

- The business case acts as the primary input for preparing the highest level planning document called Project Charter.
- Once the Project Charter is realized, detailed planning is done followed by the process of “estimation”, taking care of cost, schedule, size and effort required to build the enterprise application.
- A few of the popular estimation techniques are :
  - **Ballpark Estimation:** involves decisions based on heuristics. Data available in the organization from similar projects, similar domains or industry standards are used for estimation.



Planning and Estimation

- **Use Case Point Estimation:** The target functionality which is depicted in the form of Use case models is the basis for doing Use Case Point estimation.
- **Function Point Estimation:** A function point or FP is the unit to measure the functional size of the software under measurement. To perform FP estimation, a fully documented functional specification of the target software solution is needed.