Introduction

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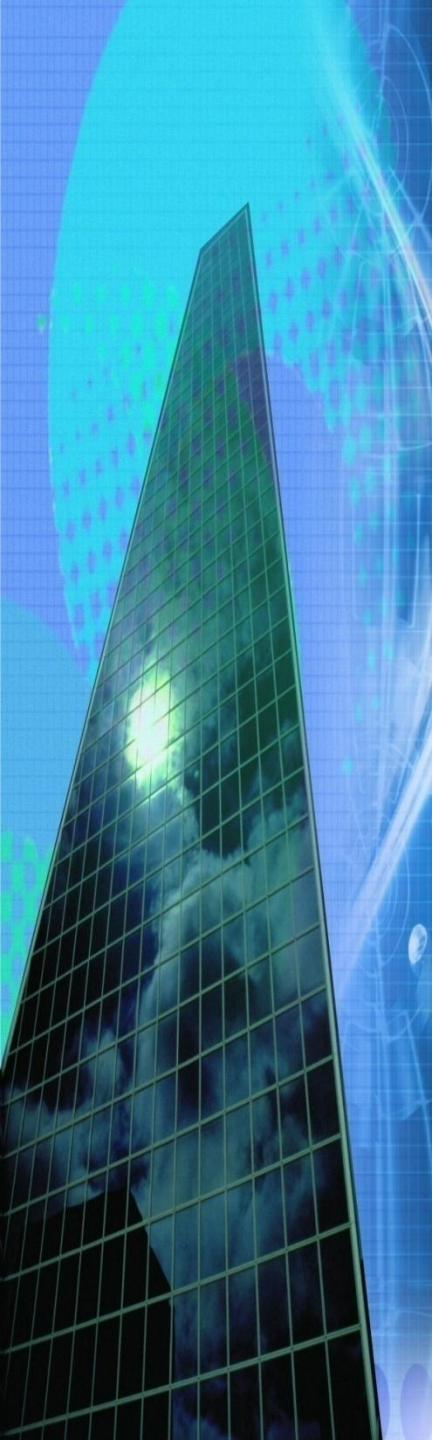
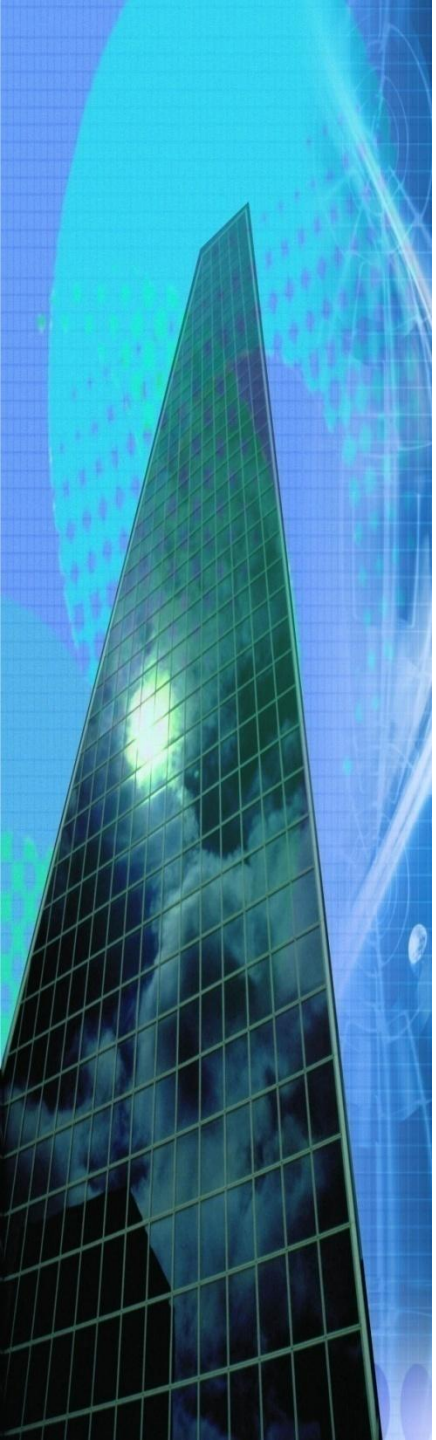


What is an Enterprise Application

- There is a thin line of demarcation which separates whether an application can be termed as Enterprise Application or not.
- Typically an Application which satisfies the business functionalities (functional requirements) of an organization and also take care of factors such as efficiency, scalability, security etc (non functional requirements) is termed as Enterprise Application.
- An organization or enterprise may have several enterprise applications in its application landscape. They can be categorized from various perspectives.



Categorization of Enterprise Applications

Visibility to end user:

- **Upstream:** Customers facing enterprise applications or front-end systems of an organization.
- **Downstream:** Back-end enterprise applications working behind the scenes in an organization to fulfill the customers' or end users' needs.
- **Business Enabler:** Applications which fulfill the general organizational needs.

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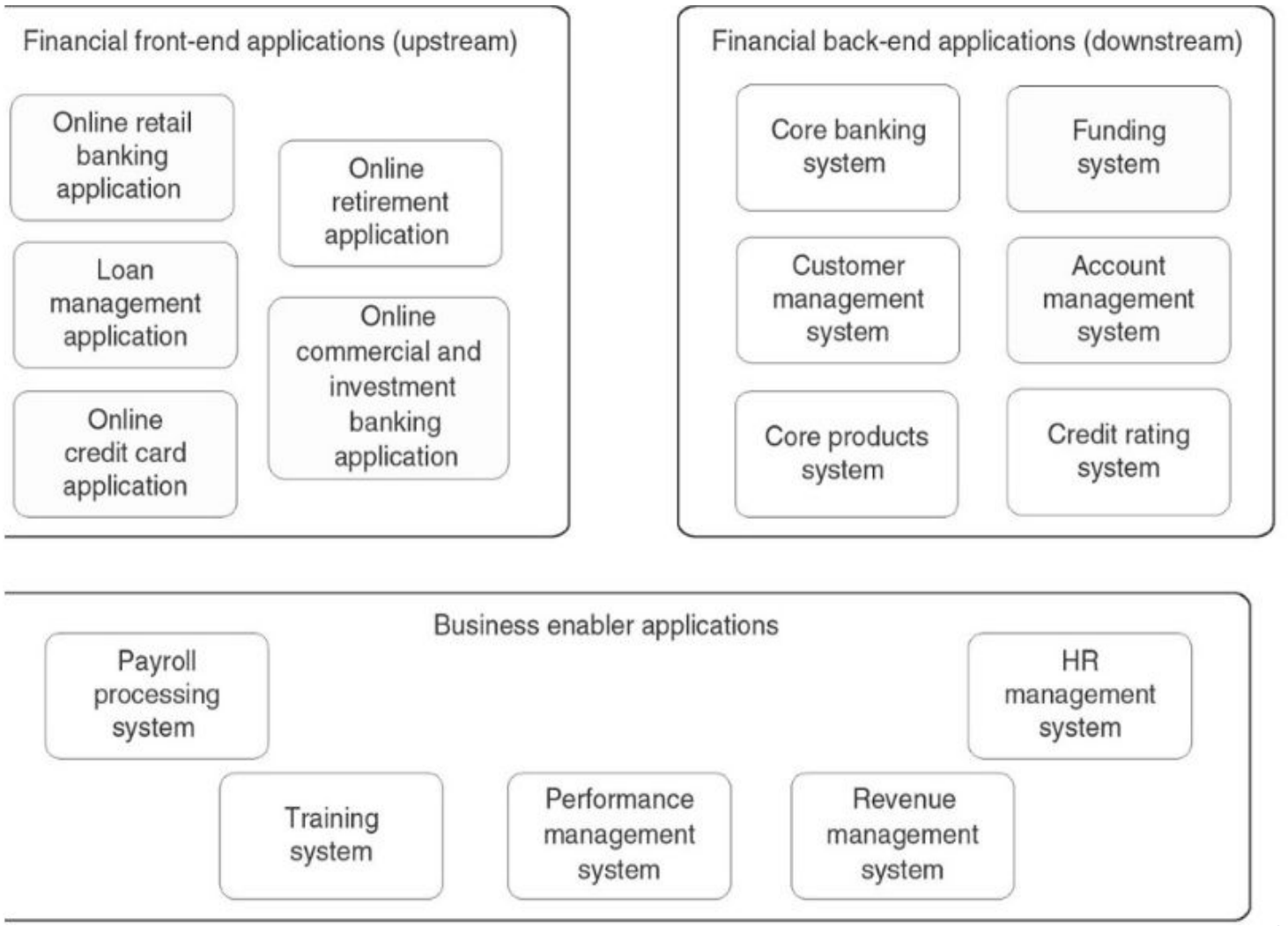
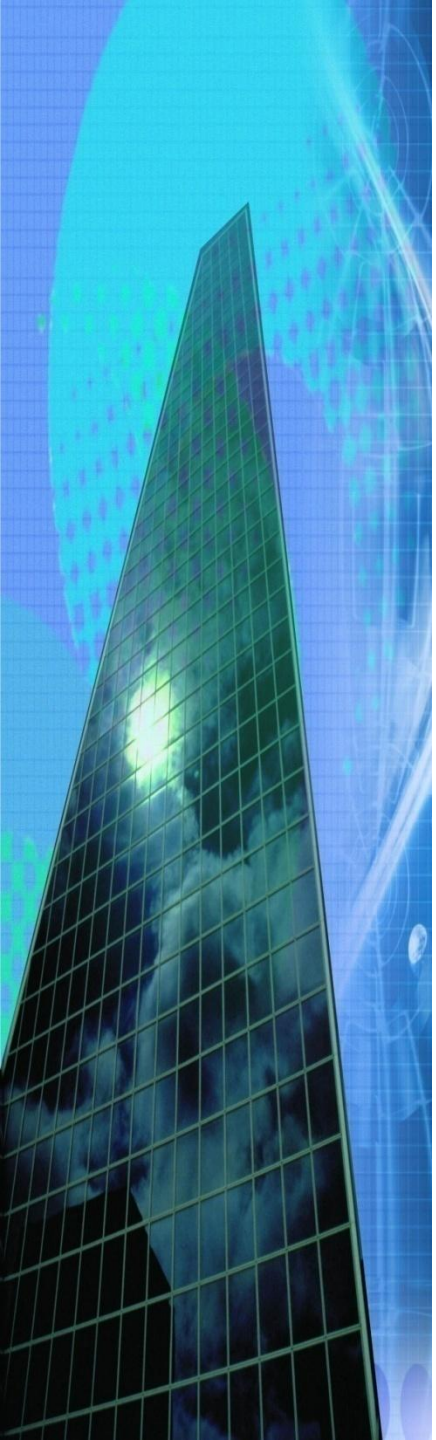
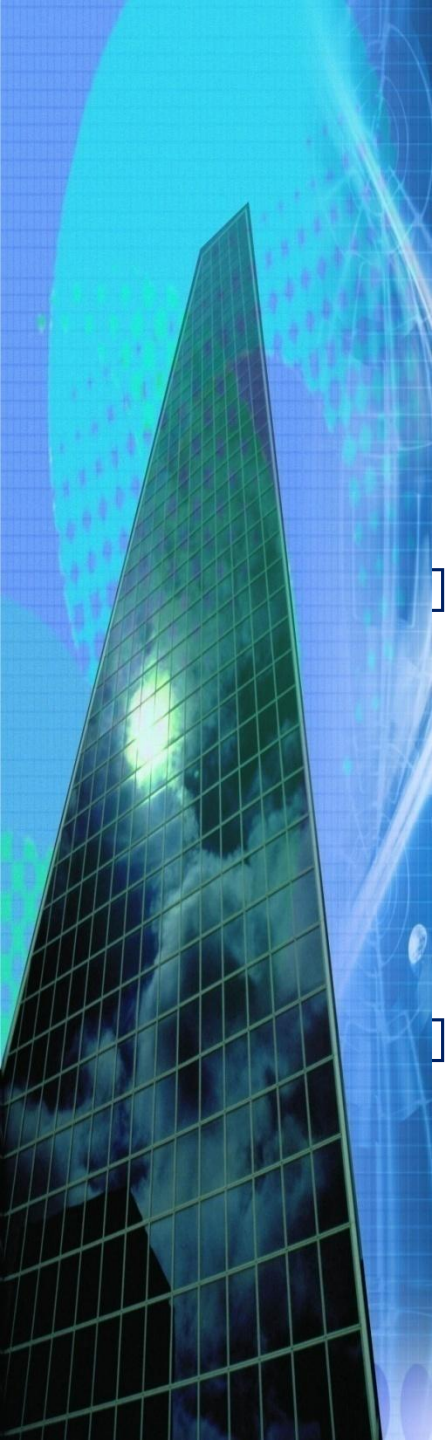
Categorization of Enterprise Applications





Categorization of Enterprise Applications (contd…)

- Industry domain specific application.
- **Type of processing supported:** Enterprise applications may fall under categories such as batch processing, online transaction processing (OLTP) or online analytical processing (OLAP) applications, or decision support systems (DSS).
- Custom built or readymade application.



Challenges in Raising Enterprise Applications

With changing market dynamics, customer needs and technology, Enterprise applications face many challenges to stand out from the crowd. Below are the key challenges:

- Business Process Automation
  - Flow through
  - Quicker time to market
  - Improved productivity
  - Resource Optimization
- Data Harmonization
  - Lack of single version of truth

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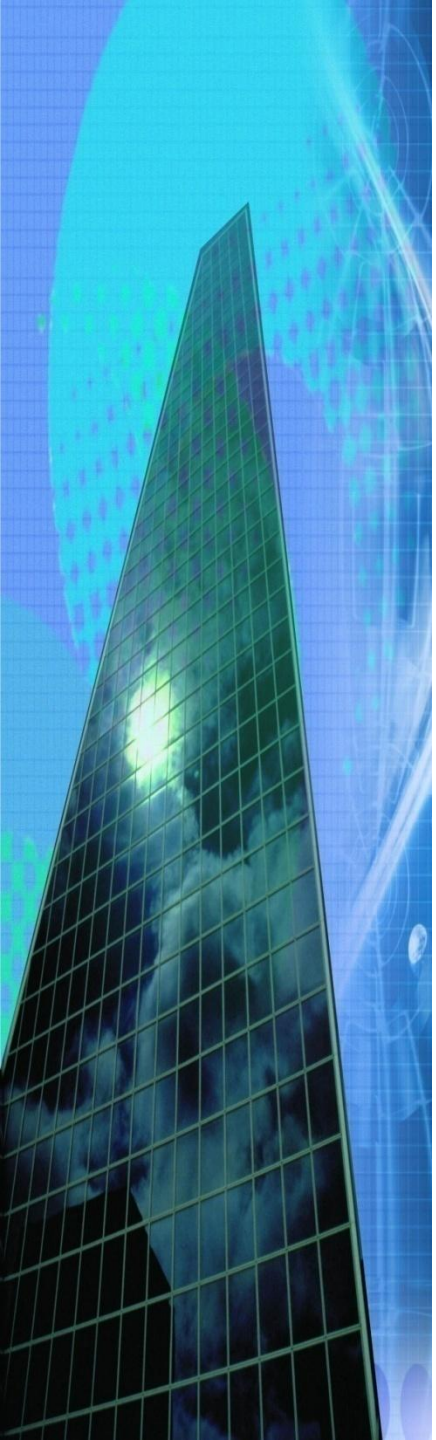

Challenges in Raising Enterprise Applications

- Application Integration
  - Different platforms
  - Different technologies
- Application Security
  - Access by users and other appllications
  - Maintain the Enterprise brand value
- Internationalization
  - Across geographies
  - Across time, date and currency
- Transaction Management

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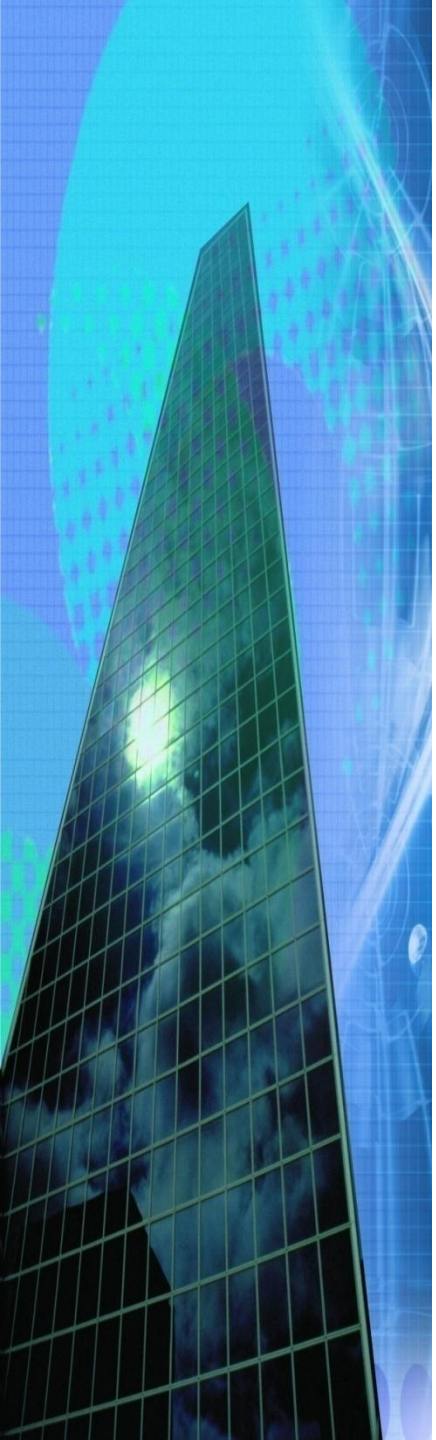
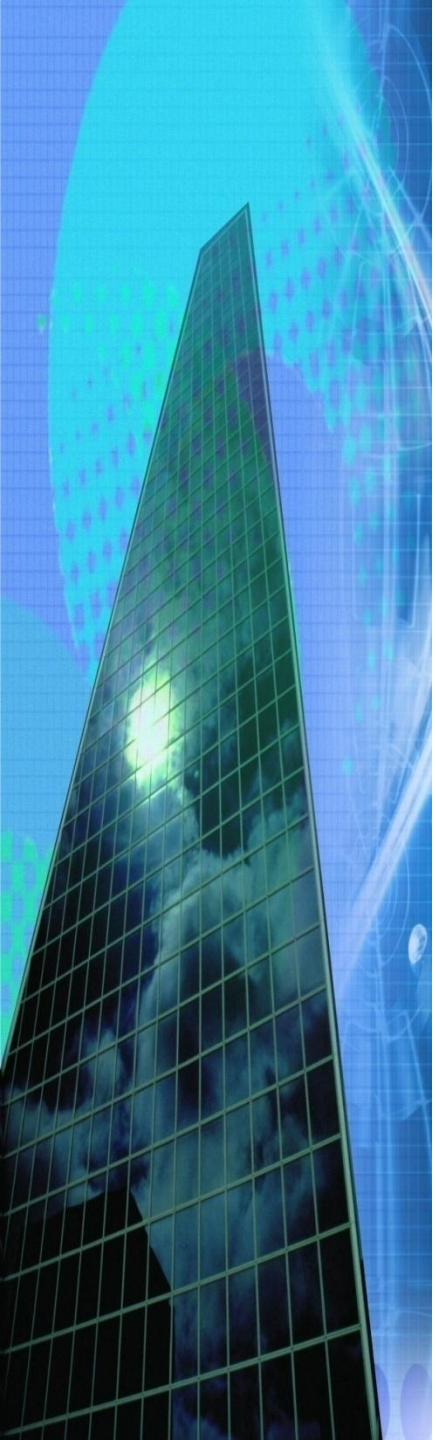


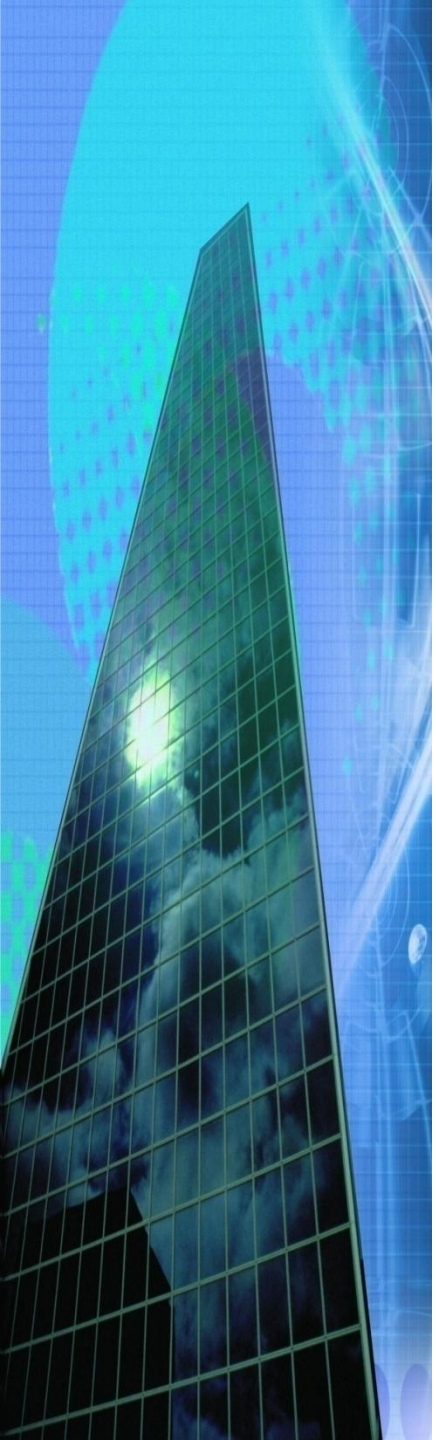
Challenges in Raising Enterprise Applications (Contd...)

- Quality of Service (QoS)
  - Scalability, Availability
  - Maintainability
  - Reliability, Security
- Rich User Experience
- Technology Selection
  - Platform, Framework, Tools
- Governance and Team Productivity
  - Right skills
  - Team diversity
  - Time-to-production



Software Engineering Methodologies

- Comprises of methodologies
  - to develop, manage and maintain the software with focus on
    - software quality
    - software requirements
    - software design
    - software development
    - Testing
    - configuration management



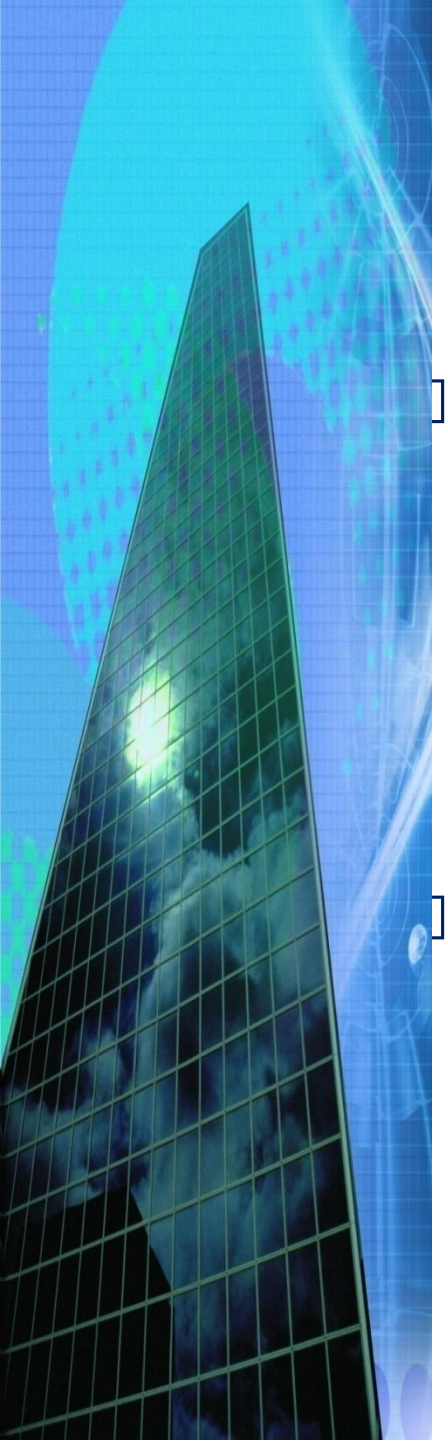
Software Engineering Methodologies

Iterative methodologies

- IBM RUP: RUP(Rational Unified Process) has assembled the iterations in four phases: inception, elaboration, construction and transition.
- Agile software development: an extension to the iterative approach to build applications in a nimble fashion with a light weight process.
- Eg. Extreme Programming, Scrum

Waterfall methodology

- Traditional approach of software development that typically comprises of a sequence of phases —requirements, analysis, design, build and testing —wherein each phase output acts as input to the next phase.



Life Cycle of Raising an Enterprise Application

Stages:

- Inception
  - Typically starts as a result of enterprise analysis and business modeling activities.
  - Requirements engineering is the key activity.
  - Concludes with casting the plan and project estimation.
- Architecting and Designing
  - Takes key inputs from the enterprise architecture initiatives of an organization.
  - Application architecture and software designing are the key activities.

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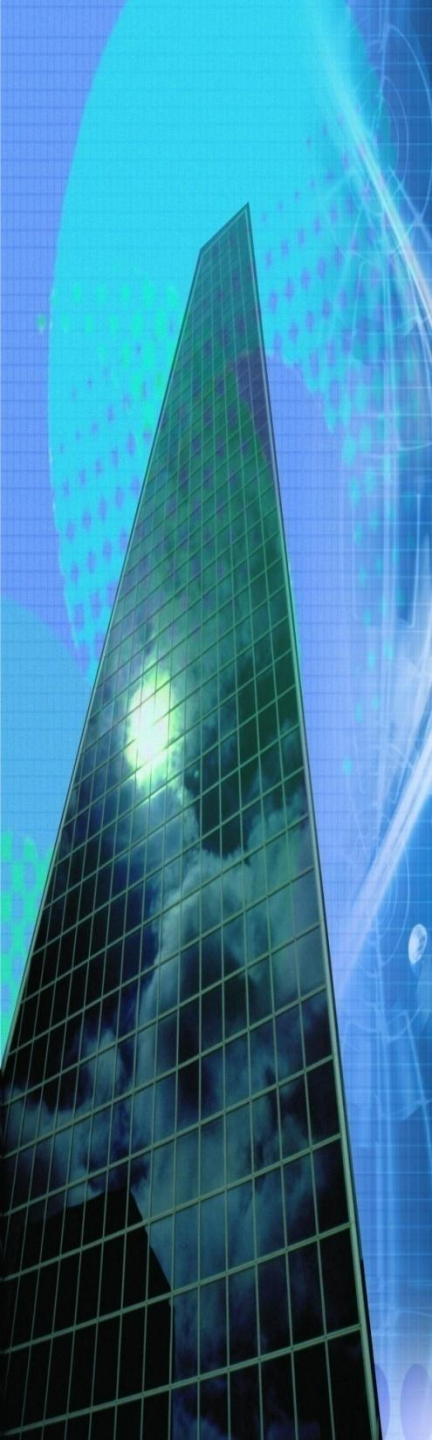
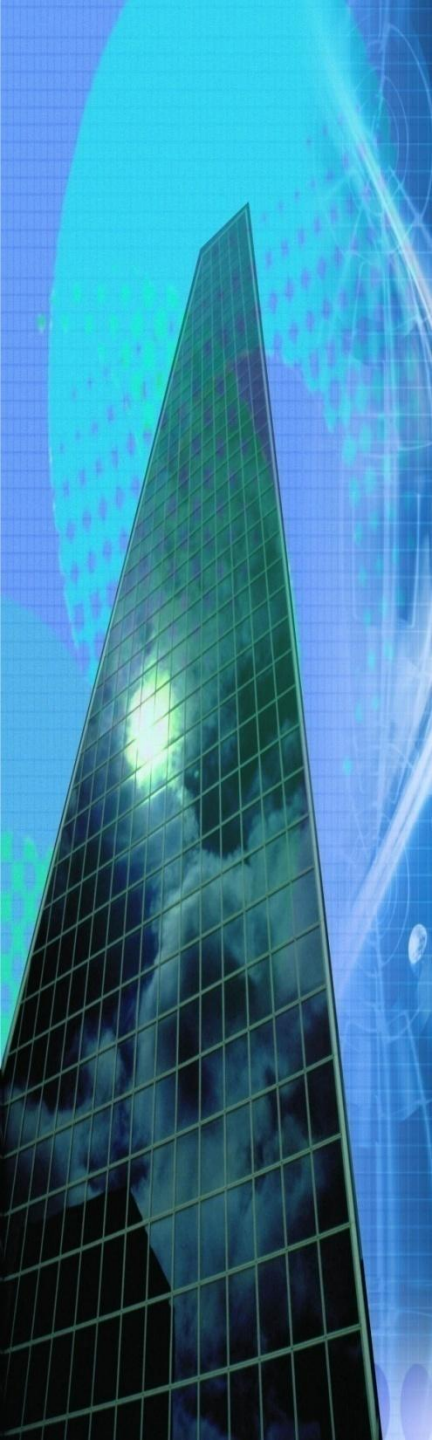


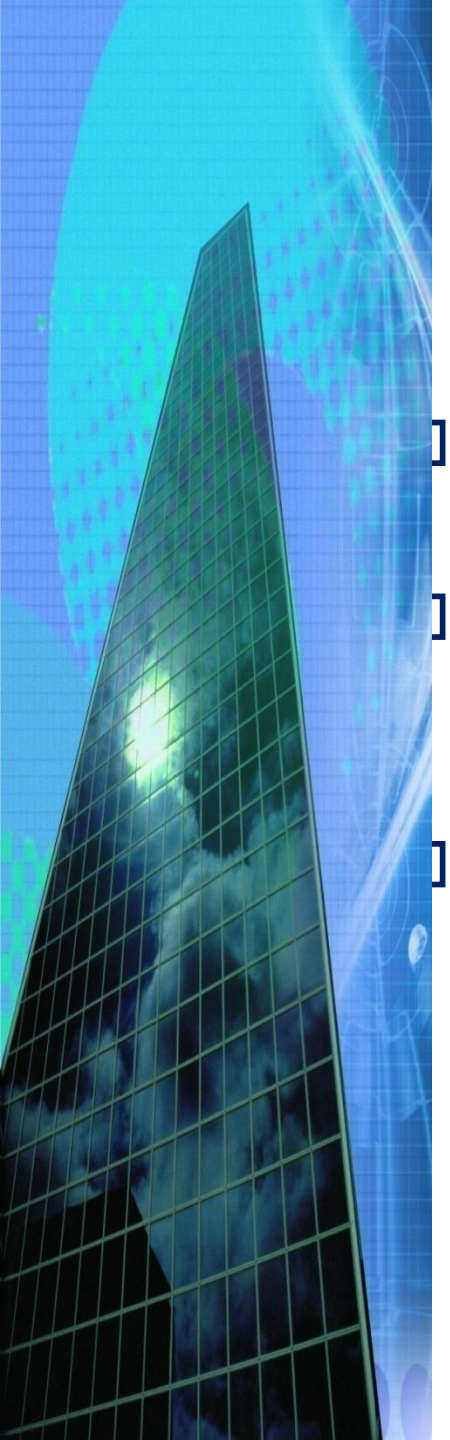
Life Cycle of Raising an Enterprise Application (Contd...)

- Construction
  - starts with building the application framework components;
  - followed by construction of application components;
  - concludes with unit testing and code review and analysis.
- Testing
  - includes integration testing, system testing and user acceptance testing;
  - successful user acceptance test leads to application rollout.



Key Determinants of Successful Enterprise Application

- Business case readiness
- Strategy to execute
- Excellence in Execution
  - Time to complete – objectives, circumstances, environments – may change
  - Continuous assessment – needed
  - Robust traceability – needed
  - Communications –needed –formal handshaking among stake holders, reverse feedback mechanism in each phase.



Skill Requirements to Raise an Enterprise Application

Following are the key skill sets required to develop an enterprise application (Both technical & soft):

- **Knowledge of organizational dynamics:** understand the organizational business and business needs of end users.
- **Domain knowledge:** comes handy especially during inception, architecting and design and testing phase of applications.
- **Business analysis skills:** conglomeration of domain knowledge, technical knowledge, use of business analysis related tools and practice of soft skills.

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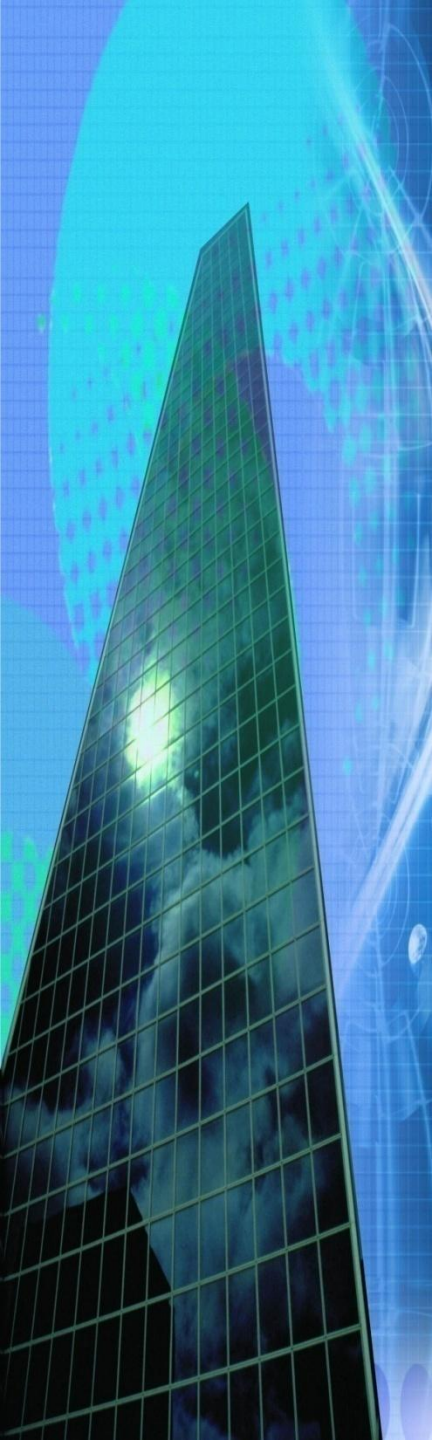

Skill Requirements to Raise an Enterprise Application (Contd…)

- **Program management skills:** includes planning, estimation, budgeting, talent management, change management, positive communication and many more
- **Architecting and designing skills:** includes the knowledge of architecture views and view points, architectural patterns, design patterns, design paradigms like object orientation, aspect orientation and service orientation, usage of design tools, architectural and design best practices, technical frameworks, knowledge of modeling languages like Unified Modeling Language, etc.

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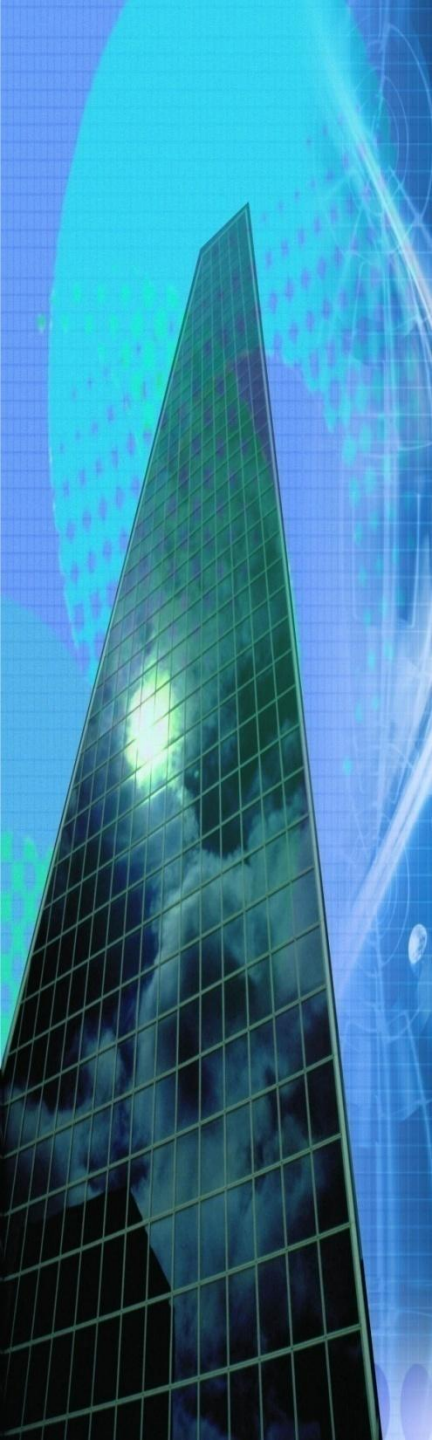
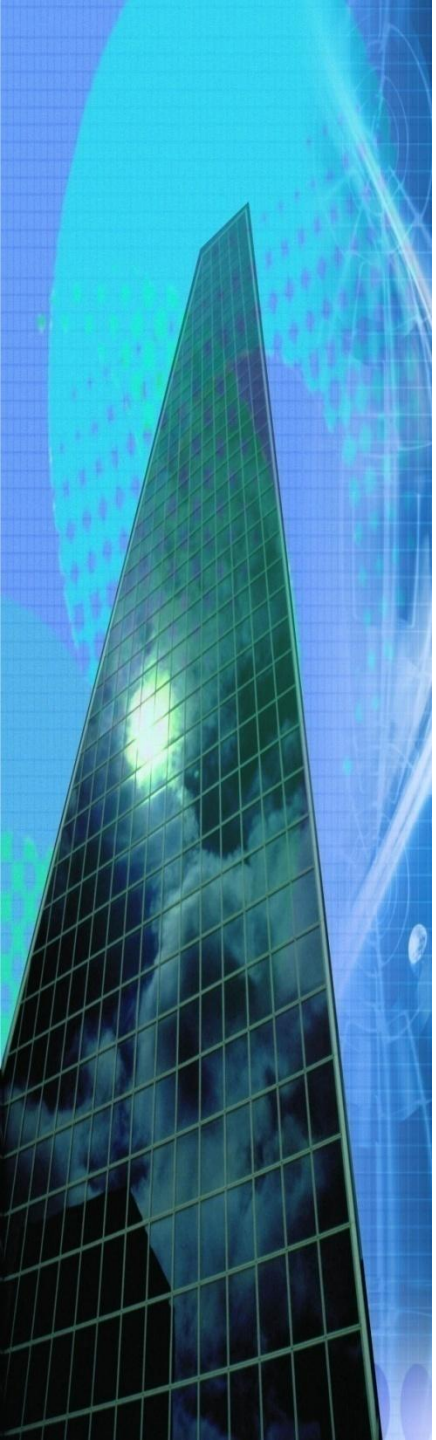


Skill Requirements to Raise an Enterprise Application (Contd...)

- **Programming skills:** includes knowledge of a programming language ,knowledge of the underlying platform, knowledge of an Integrated Development Environment (IDE) tool, programming best practices, code review skills, knowledge of unit testing tools, configuration management and build tools, static code analysis tools and dynamic code analysis tools etc.
- **Testing skills:** includes skills for performing integration testing, performance testing, load testing, stress testing, application security testing, interface testing and user acceptance testing.
- Knowledge of tools

Ingredients of Enterprise Application



Measuring the Success of Enterprise Applications

- Once we are done with raising an enterprise application , we need to measure its success based on different parameters.
- Measuring the business process automation gain and the gain in terms of the ease with which end user can carry out the same process.
- Effectiveness of the solution – to the business problem
- Quality of enterprise application in terms of non functional requirements.
  - Defect free code
- Time to production
  - faster the time to market , better for the organization.
- Adherence to budget and timeliness.
- Cost effectiveness of application.
- Productivity of development teams.

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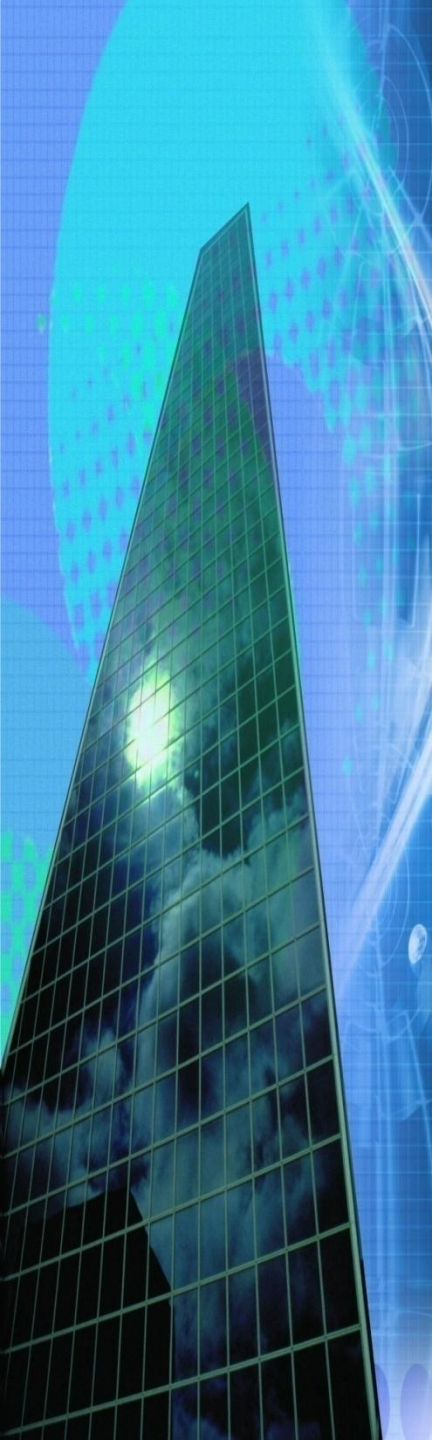

Review

- Review Activities
  - Identify the enterprise applications in your domain area and categorize them
  - Perform a SWOT analysis of the two Software Engineering Methodologies