Telelogic

&

Evocean

Bridging the Enterprise Architecture to IT Architecture Gap

Presented by Jog Raj
31st January 2008

Telelogic

Agenda

- Introductions

- The Business Challenge

- What is Enterprise Architecture

- Bridging the Business and IT gap

- Service Orientated Architectures

- Role of Tools in Architecture

- Demonstration

- Questions & Answers

- Summary

Telelogic At A Glance

- **Founded**   1983

- **HQ**   Malmö, Sweden

- **US HQ**   Irvine, California

- **Public Company**   Listed in 1999

- **Development Sites** USA, Sweden, UK, India

Telelogic

# Global Presence

Over 40 offices around the world

© Telelogic AB

Bridging the Enterprise Architecture to IT Architecture Gap

Current Business Challenges

- Hypercompetitive Market

  - Innovation

  - Ability to implement ideas

- Mergers and Acquisitions

- Governance and Compliance

- Reduce Cost

  - Operational costs

  - IT Asset Management

    - Reuse of assets

    - Application Integration Costs

- Risk Reduction and Mitigation

A Growing Divide?

Business Challenges and Opportunities

Business Process Adaptability
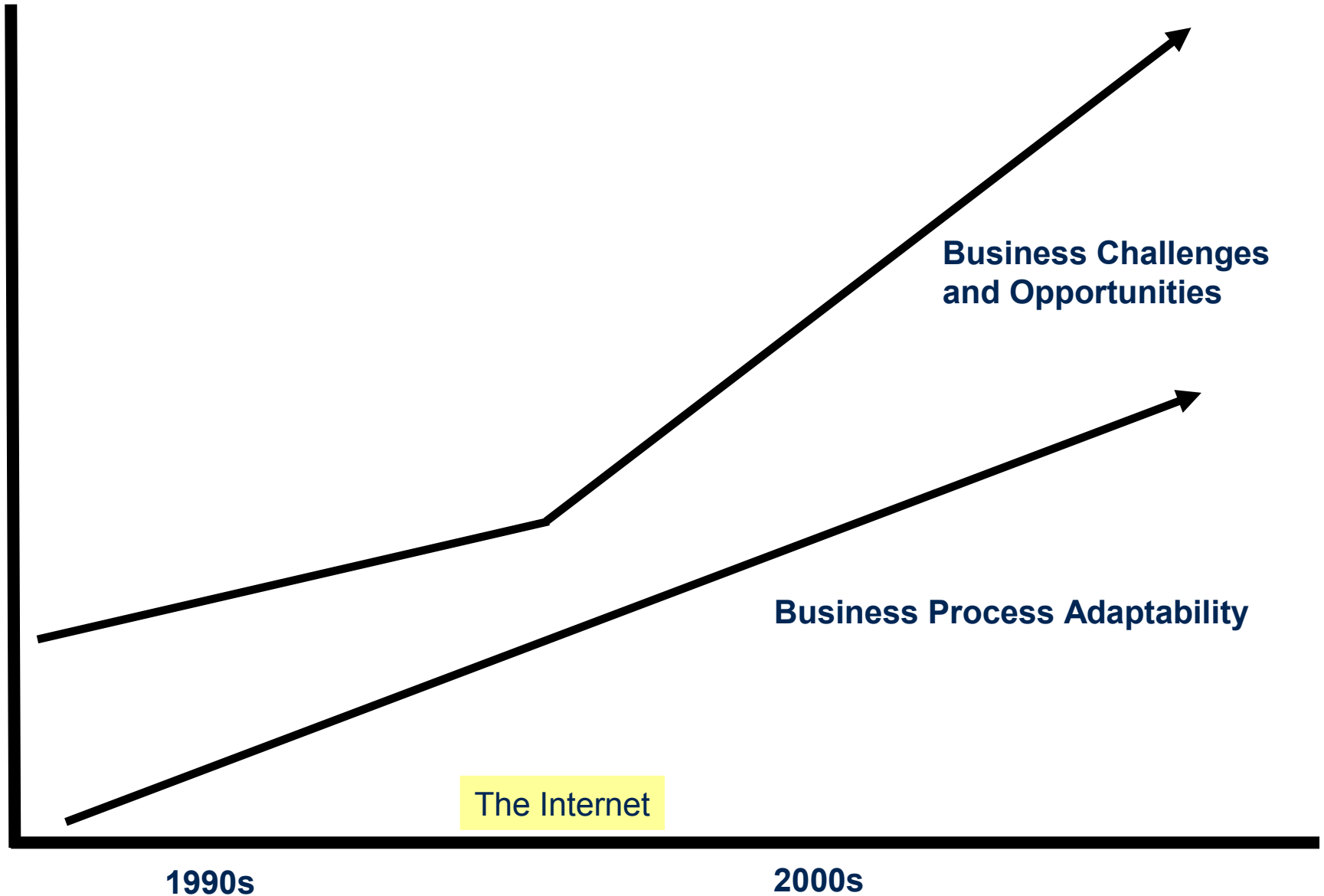
The Internet

1990s

2000s

Telelogic

What is Enterprise Architecture?

- A description of business and IT domains:
  - Mission, Strategy, Landscape, Organization, People, Locations
  - Processes, Technology, Information, Data, Applications
- A description of the relationships between them
- A set of graphical and textual models and artefacts that can be communicated in a common manner
- *An Enterprise Architecture supports an operating business in achieving its goals*
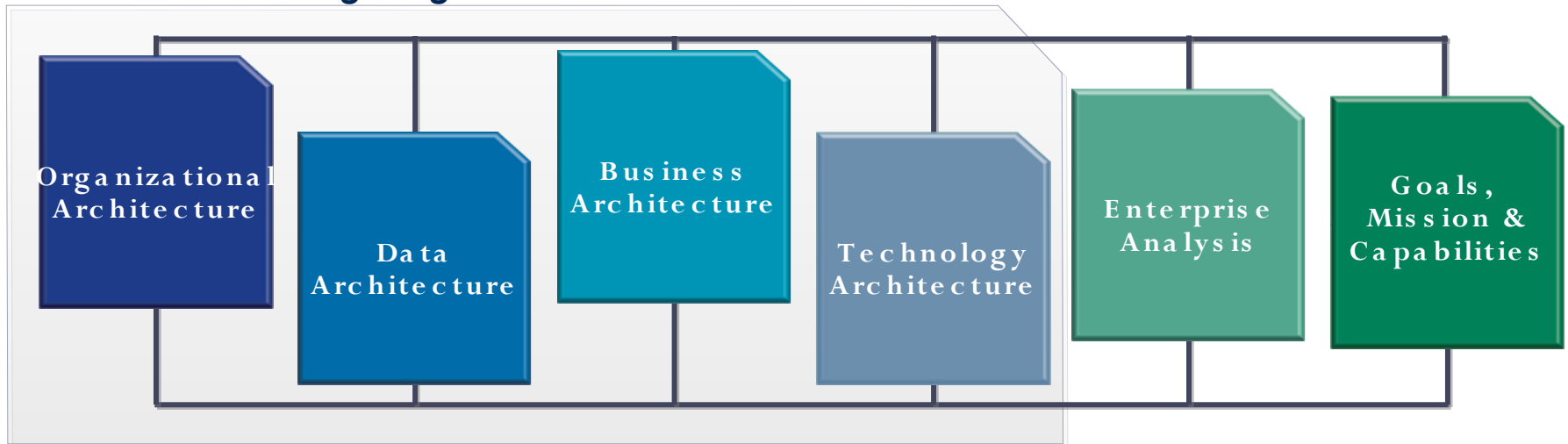
Enterprise Architecture

Challenges:

- Managing IT Investments

- Legacy System Integration

- Regulatory Compliance

- Efficient project deliver

- Stakeholder buy-in

- Redundant data

- Portfolio Management

- Alignment of Business & IT

- Sarbanes Oxley

Who Derives Benefit from an Enterprise Architecture?

Different users demand different capabilities and benefits

Decision Makers demand reliable and consistent information
- Need effective decision support and IT governance

Business Analysts demand detailed analysis capability
- Highly advanced Impact Analysis and What-if Scenario capability

System Engineers/Architects demand a common language
- Need for multi-disciplines to communicate more effectively

Reviewers demand instant access from any location
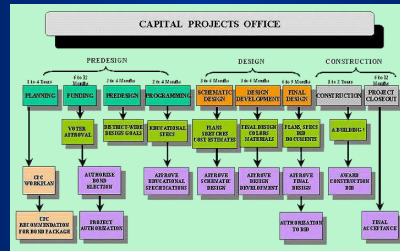- Mainly interested in review functionality

Telelogic

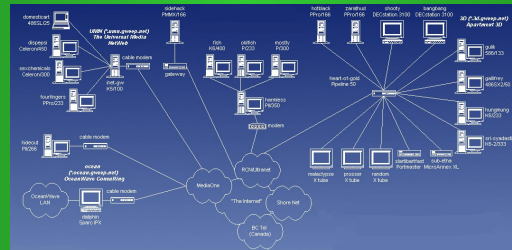# Different Stakeholders, Different Perspectives

Speak a Common Vocabulary!

STRATEGIC

OPERATIONAL

TECHNICAL

Telelogic

Support for Decision Making
Investing in the right initiatives

Principles

High-level guidelines about the use of BPM and SOA

- reference architectures

- processes and best practices

- lifecycle management

- standards

Portfolios

Collection of planned & existing

- business processes

- business & technical services

- applications

Roadmaps and scheduling for projects and deliveries

Tooling

Organization

Resource management

Roles

Reporting structures

Decision patterns

Project assignments

Strategic Initiatives

Investments
Prioritization of projects and initiatives based on enterprise goals and objectives
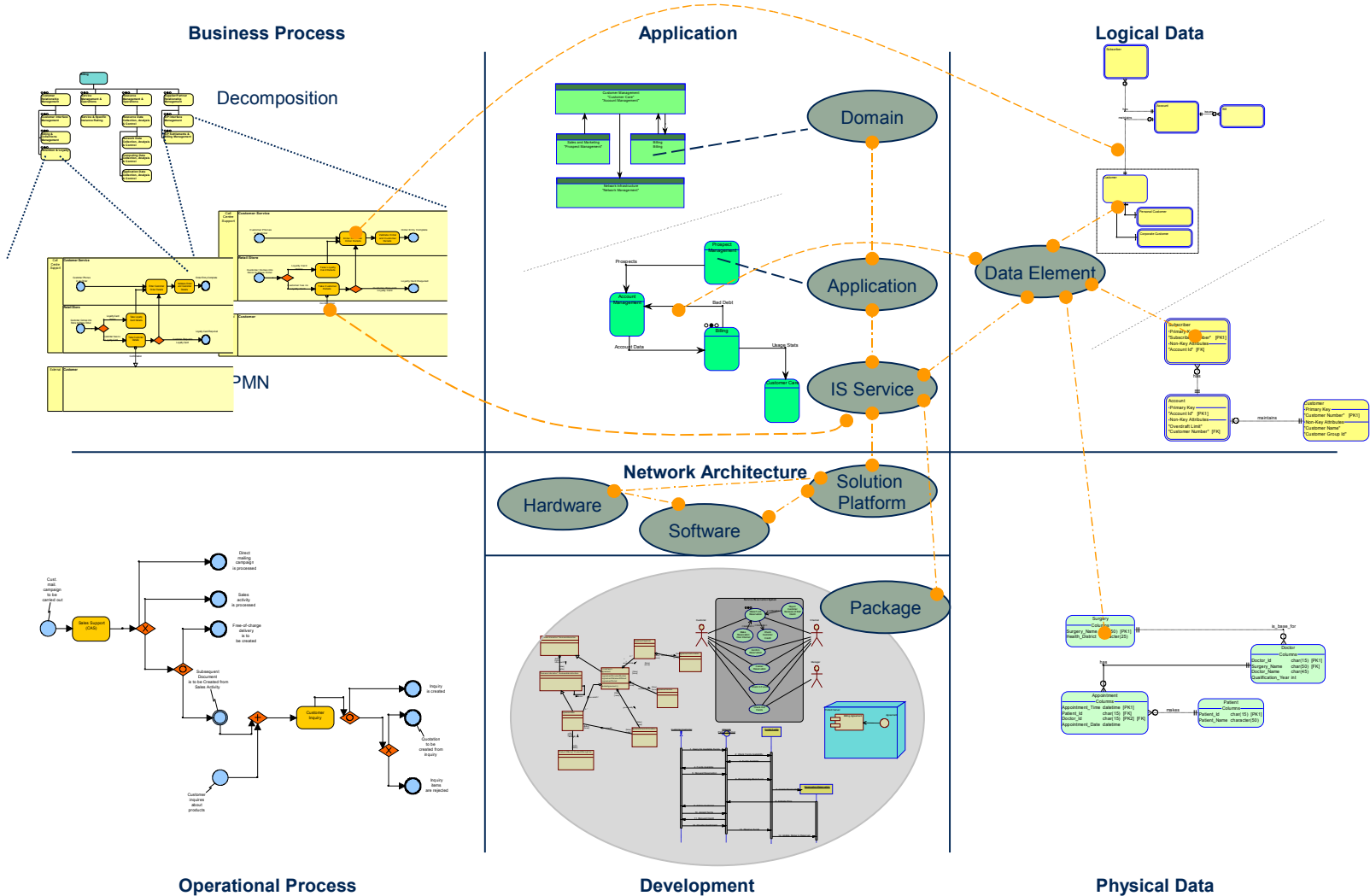
Projects

Technical Infrastructure

Telelogic

Architecture as Decision Support Tool

- Decision support tool
  - Integrated strategic information base for powerful decision-making
  - Traceability of data in repository
  - Capture, analyze <u>and</u> visually communicate information how systems, applications and business processes interrelate
  - Share and digest architecture information in order to make smarter, faster decisions

Example Model

Business Process

Decomposition

PMN

Application

Domain

Application

IS Service

Logical Data

Data Element

Network Architecture

Hardware

Software

Solution Platform

Package

Operational Process

Development

Physical Data

Exploring Integrated Models

- Shows relationships in encyclopedia (repository) between any objects

- Allows navigation across a scenario

- Provides analytic capability to answer questions

- Interfaces with SA reporting system

- Can update its own queries
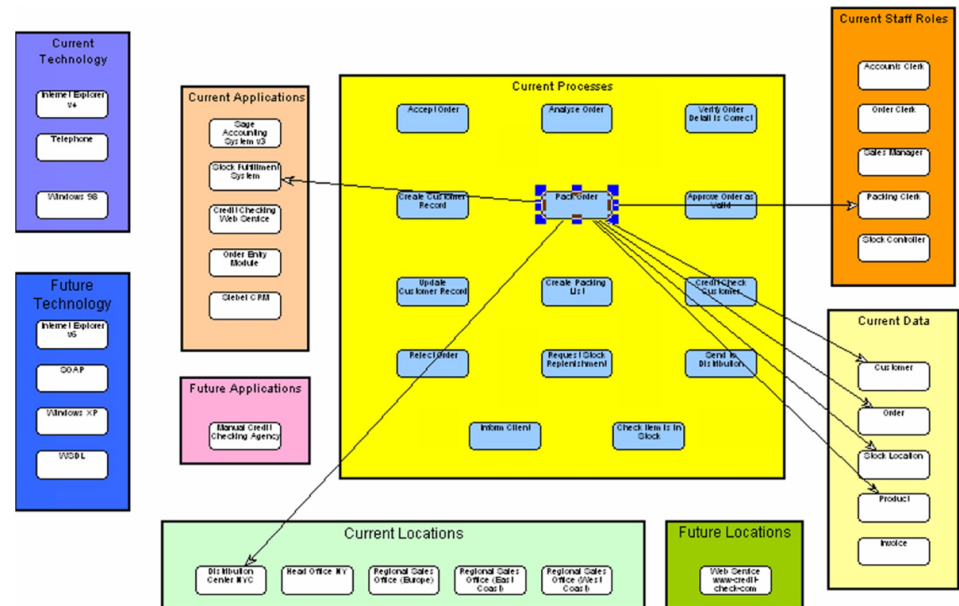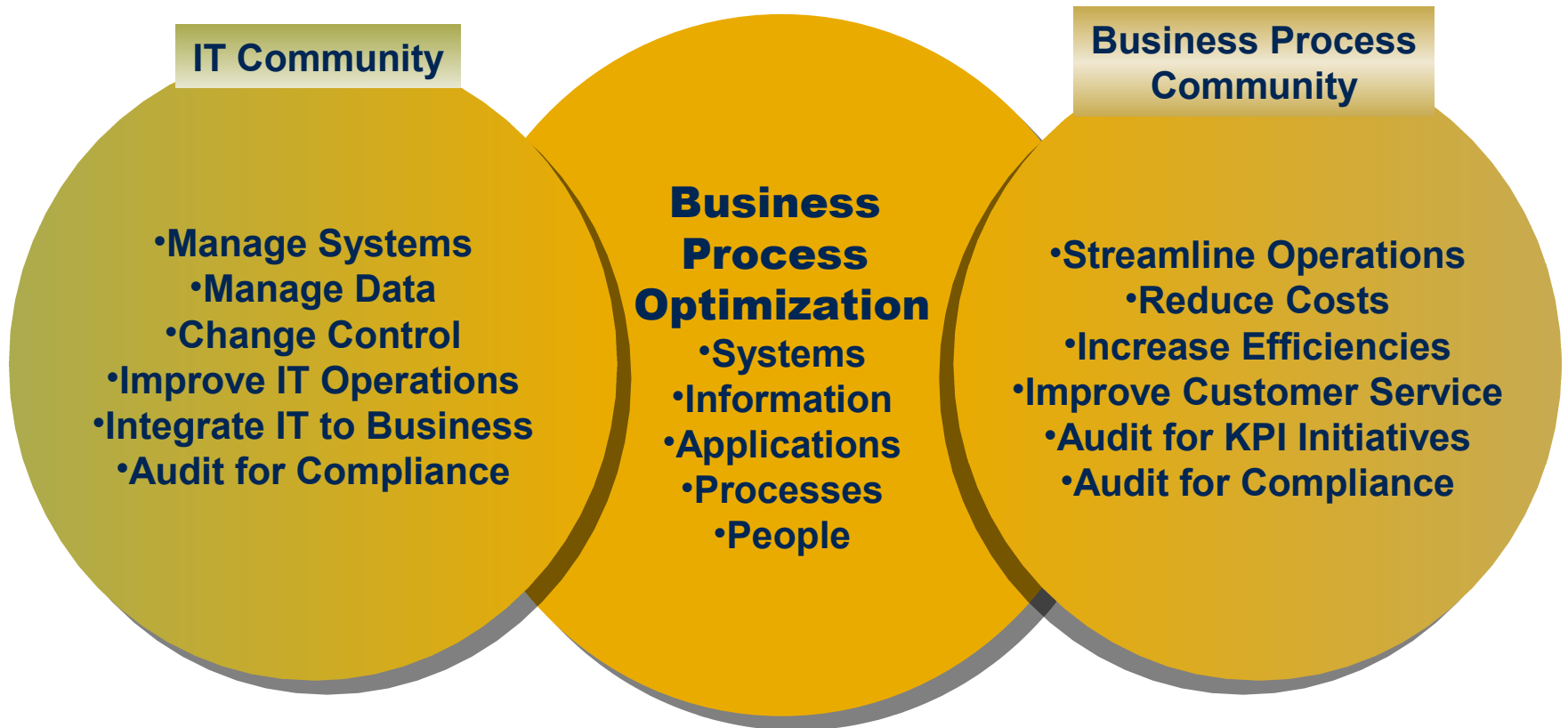
How do I Communicate With My Stakeholders?

- We must be able to share information across the entire organization

  - Generation of an EA Website allows for information sharing across the organization.

    - Process model Business Processes

- We need to communicate to the non-technical community

  - Explorer views, Pie Chart, and Bar Chart outputs allow for analysis for a non-technical audience

Telelogic
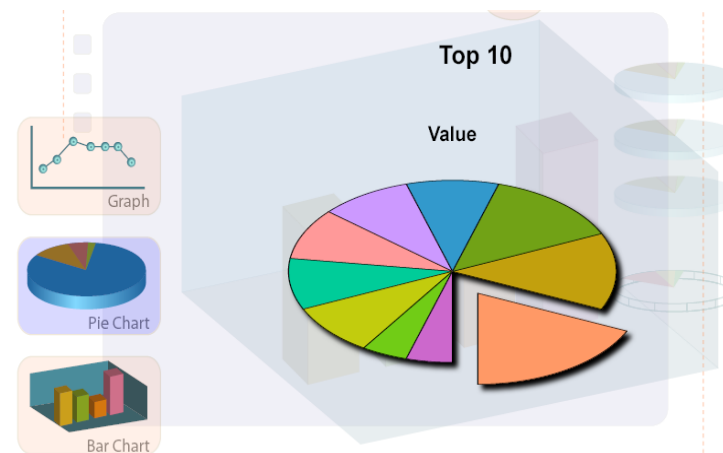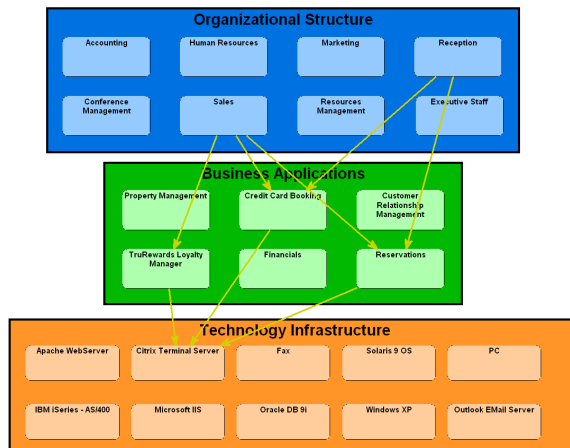
Bridging the Enterprise Architecture to IT Architecture Gap

Key Issue
Two Cultures, Two Languages…One Goal

IT Community

- Manage Systems
- Manage Data
- Change Control
- Improve IT Operations
- Integrate IT to Business
- Audit for Compliance

Business Process Optimization

- Systems
- Information
- Applications
- Processes
- People

Business Process Community

- Streamline Operations
- Reduce Costs
- Increase Efficiencies
- Improve Customer Service
- Audit for KPI Initiatives
- Audit for Compliance

Telelogic

Architecture for
Planning and Executing Change

Current State	Change Analysis		Projects

As-Is	Business Needs	To-Be	IT Change
Business Processes	Continuous Improvement	Business Processes	Acquire
Information	Business Objectives	Information	Outsource
IT Landscape	Change Directives	IT Landscape	Develop
			Integrate

Investigate	Envision & Plan		Execute

© Telelogic AB

Telelogic
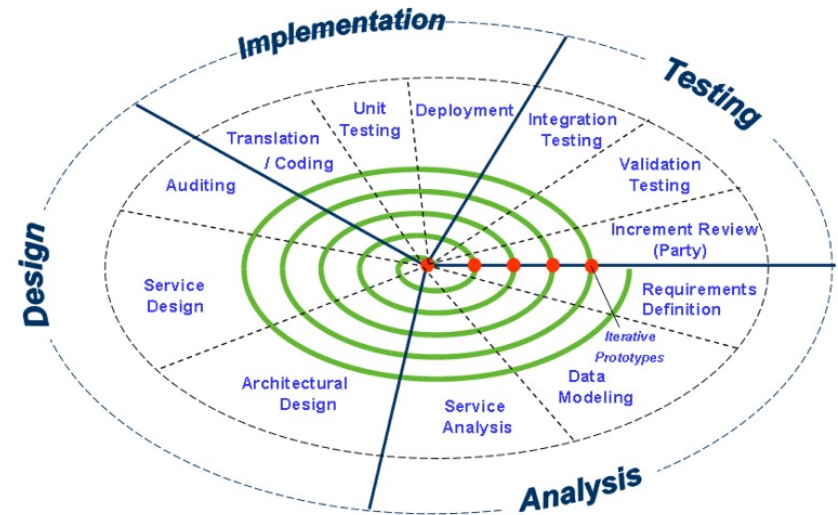
Plan IT Change

- Automation through Software
  - Change Existing / Build New Apps
    - Requirements
    - Analysis
    - Design
    - Implementation
    - Testing
  - Purchase COTS
- Design technology changes to support IT

| As Is Business | As Is IT | Plan Business | Plan IT |

Telelogic

Multiple Development Paradigms

- Flexible approach allowing for multiple paradigms, with support for
  - service-oriented architectures
  - object-oriented development
  - component-based development
  - structured analysis and design

- Support for various languages and frameworks to describe service, software, and system architectures
  - UML
  - SysML
  - DoDAF
  - BPMN
 - BPEL
  - IDEF
  - …

Telelogic

Software & Services (SOA) Development
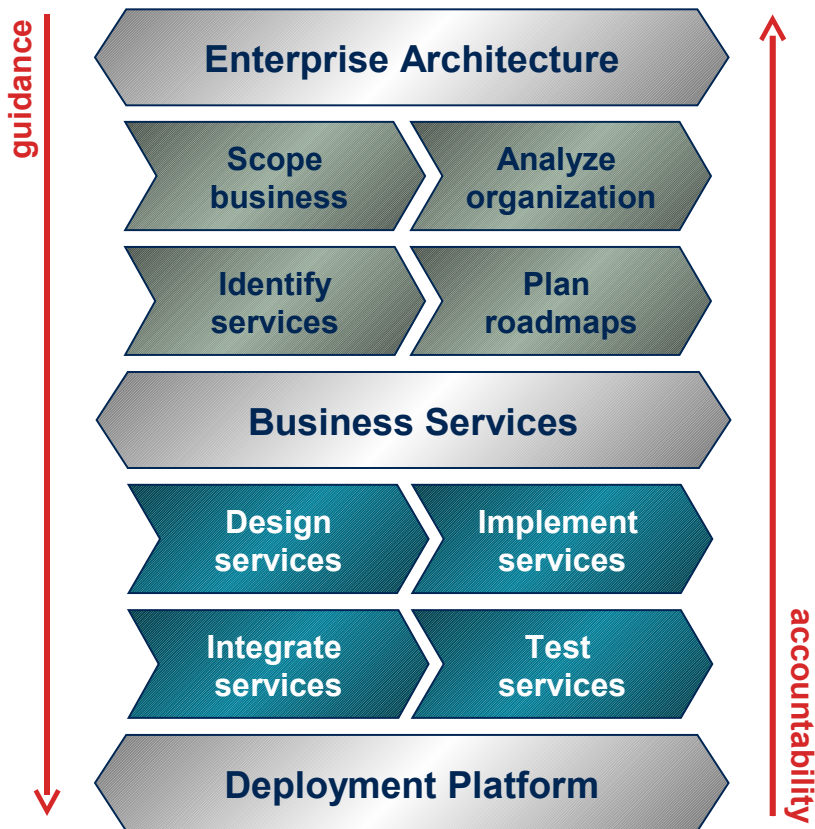
- Design and specify technical services
  - aligned with business requirements and services
  - platform-independent
  - hand-off to implementation
- Develop and maintain technical service architecture
  - decompose or orchestrate services
  - checked and validated
- Simulate services
  - model verification and testing
- Implement and deploy services
  - in-house development
  - outsourcing
- Integrate legacy applications
  - service-enable applications

Telelogic

What is Service Oriented Architecture

- Architecture for understanding assets in terms of the capabilities they provide in terms of dynamic interchangeable components and their relationships

- A framework of technologies that standardise interfaces
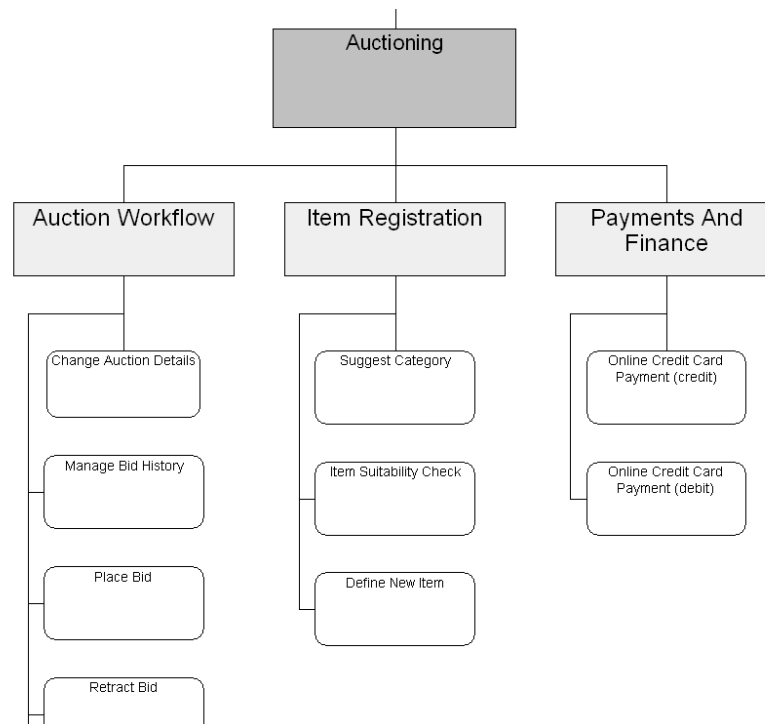
Service-Oriented Architecture (SOA)

- Relationship of services and services users

- Collection of many services to build into larger business flow

  - Ties together disparate systems

  - More completely represents more business processes

- Advantages

  - Reuse and reconfiguration

  - Promote agility, productivity and efficiency

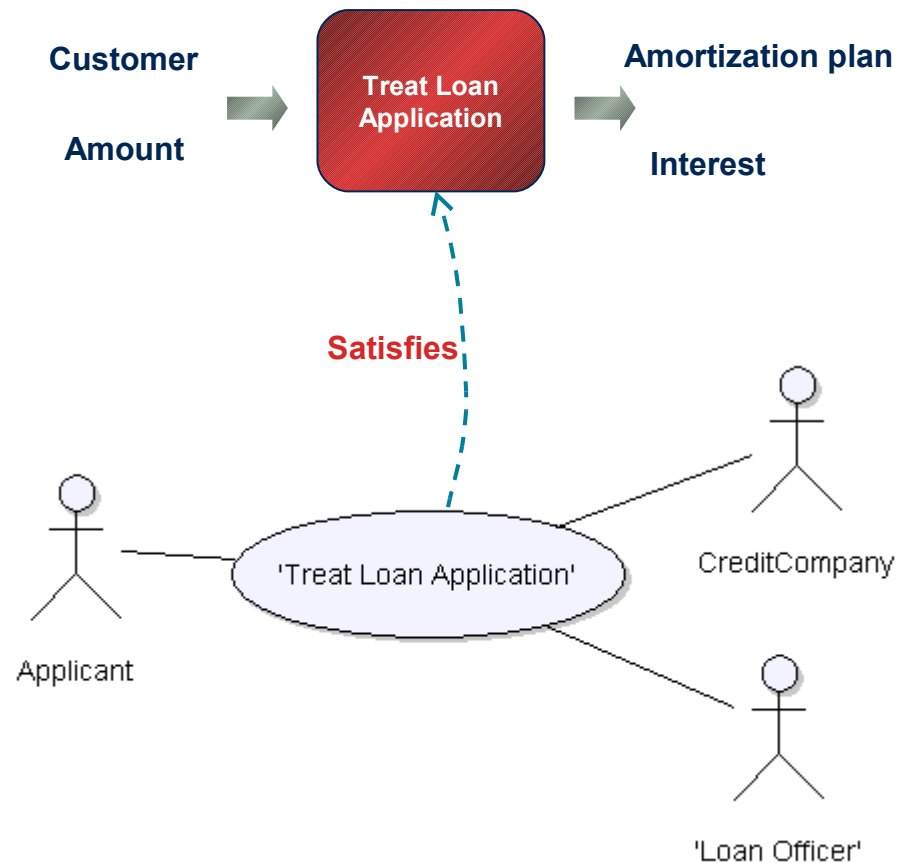 - Construction: better, faster, less costly

Visualizing Requirements

- Requirements can be visualized graphically using UML
- Telelogic DOORS supports requirements and integrated with System Architect
  - show relationships using a standard notation
 - simple to establish traceability links in the context of the model
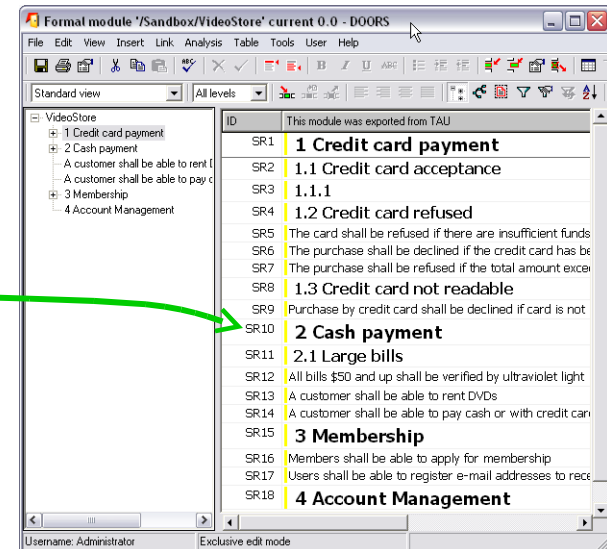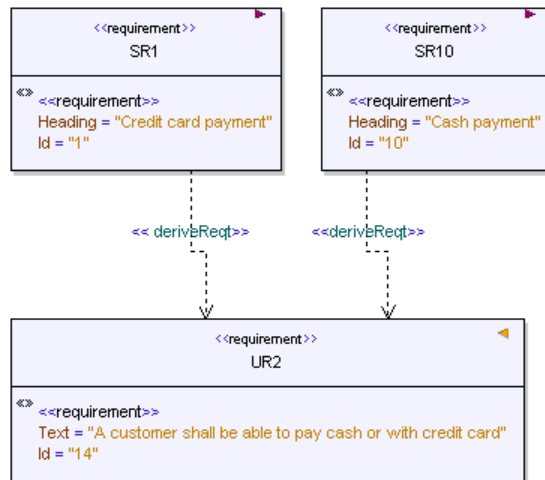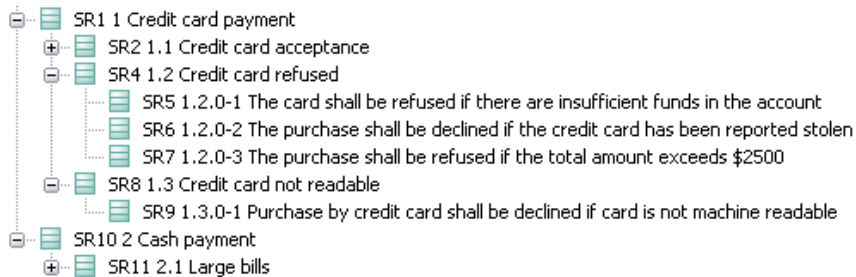
Process Decomposition

- Business processes can be transformed into use cases
  - scenarios that lead up to technical services
  - participants of business processes usually end up as use case actors
  - only selected business processes are transformed

Customer

Amount

Treat Loan Application

Amortization plan

Interest

Satisfies

'Treat Loan Application'

Applicant

CreditCompany

'Loan Officer'

Telelogic

Detail Use Cases

- Typically combined with requirements management

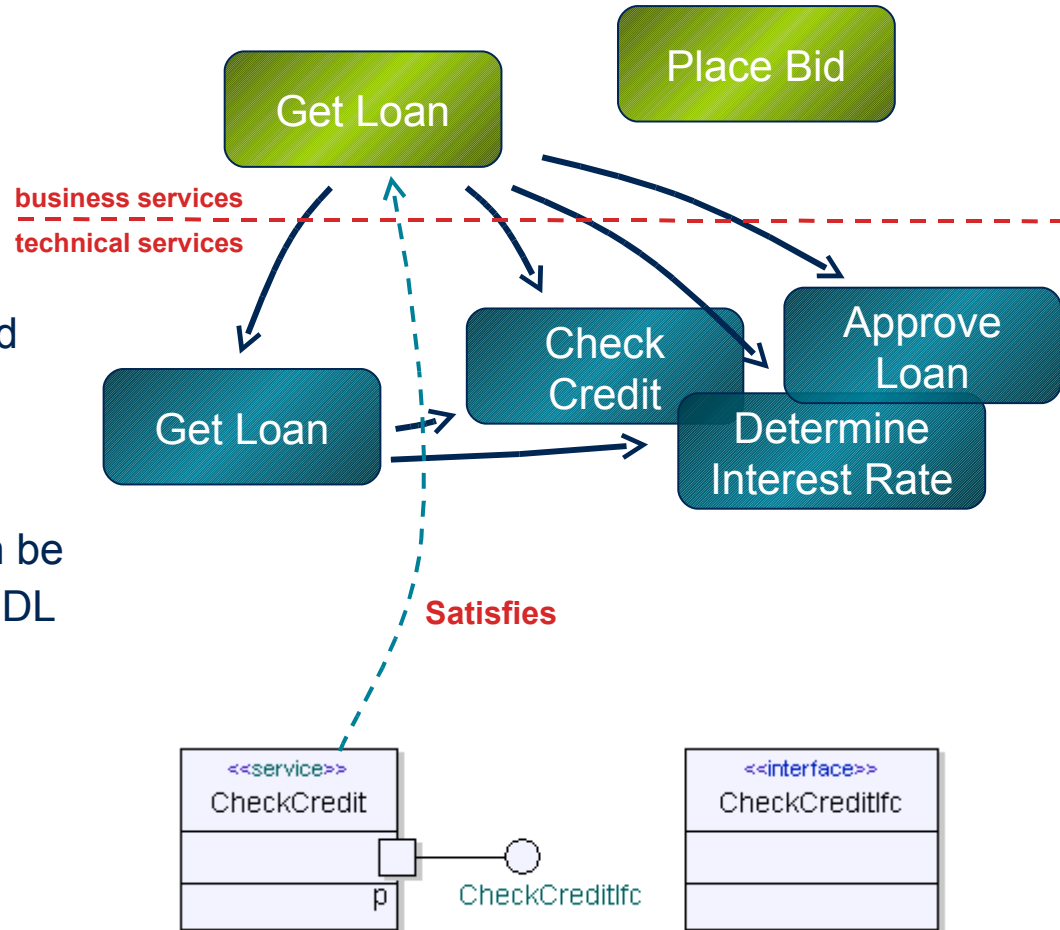- Can be derived from business processes or services
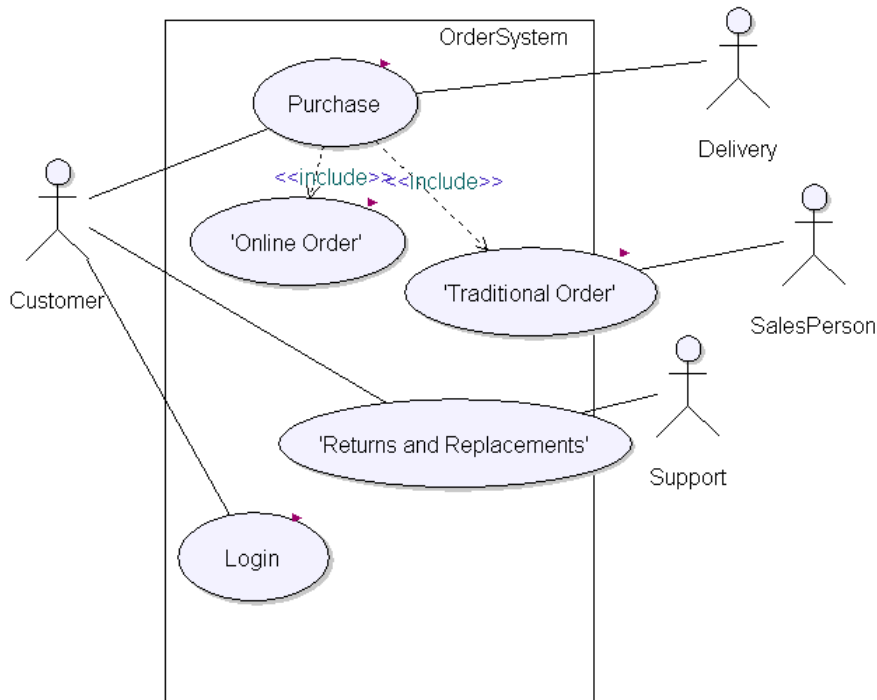
- Use cases can be at different levels

  - business process level (in lieu of BPMN)

  - system or service level

- Use case execution

  - validate flows and functionality

A **use case** includes activities, interactions, or textual descriptions of functionality; it is not "just" a use case diagram.
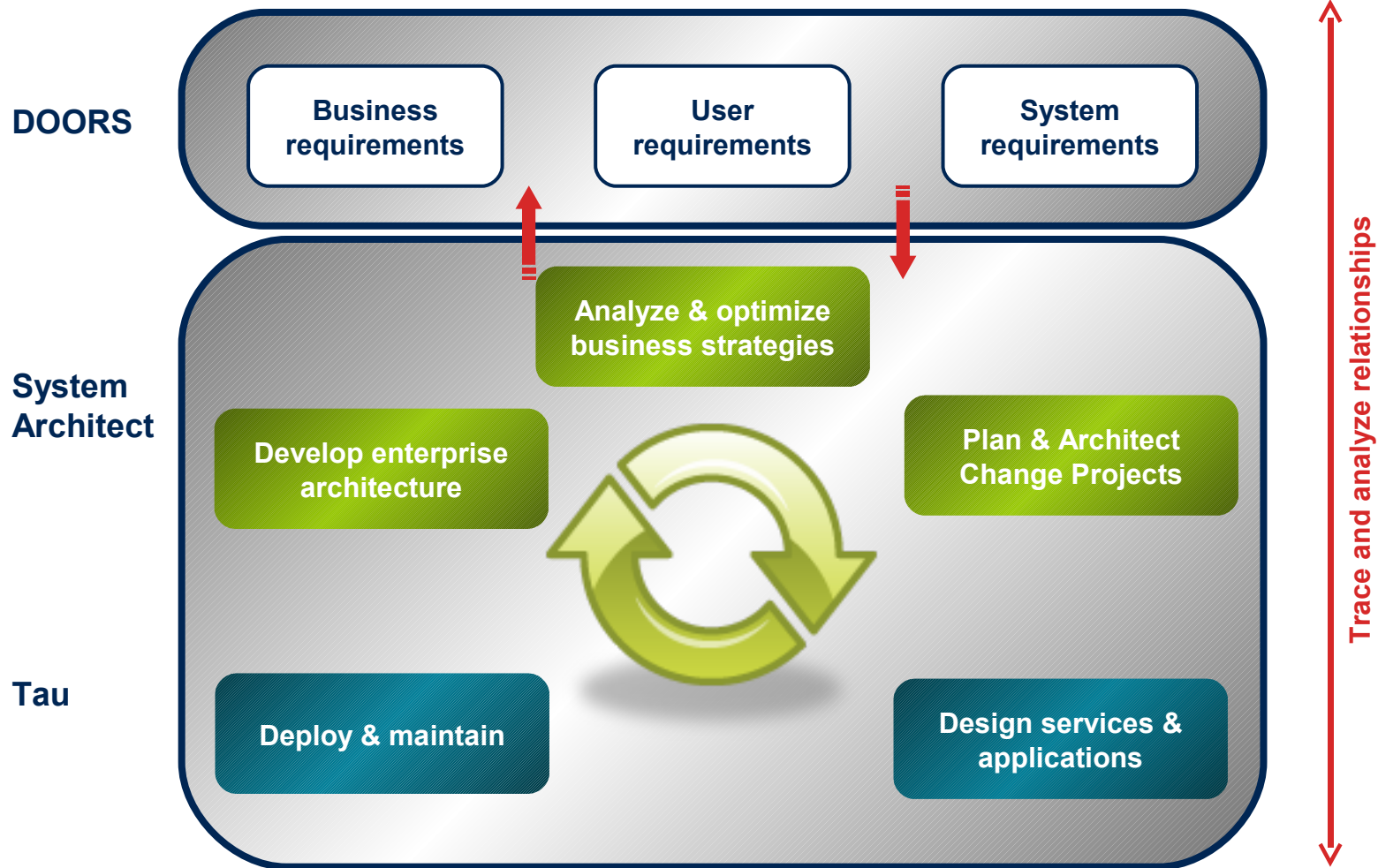
Telelogic

Service Automation

- Business services can be transformed into technical services
  - at the same level of abstraction or finer-grained
- Technical services are intended for deployment
  - service interfaces that can be further developed into WSDL
 - include service behavior

Requires a start anywhere approach
Enable Enterprise Workflow

DOORS

- Business requirements
- User requirements
- System requirements

System Architect

- Analyze & optimize business strategies
- Develop enterprise architecture
- Plan & Architect Change Projects

Tau

- Deploy & maintain
- Design services & applications

Trace and analyze relationships

Telelogic

System Architect and Tau

- System Architect and Tau share a repository

- TAU UML 2.1 editor included within System Architect
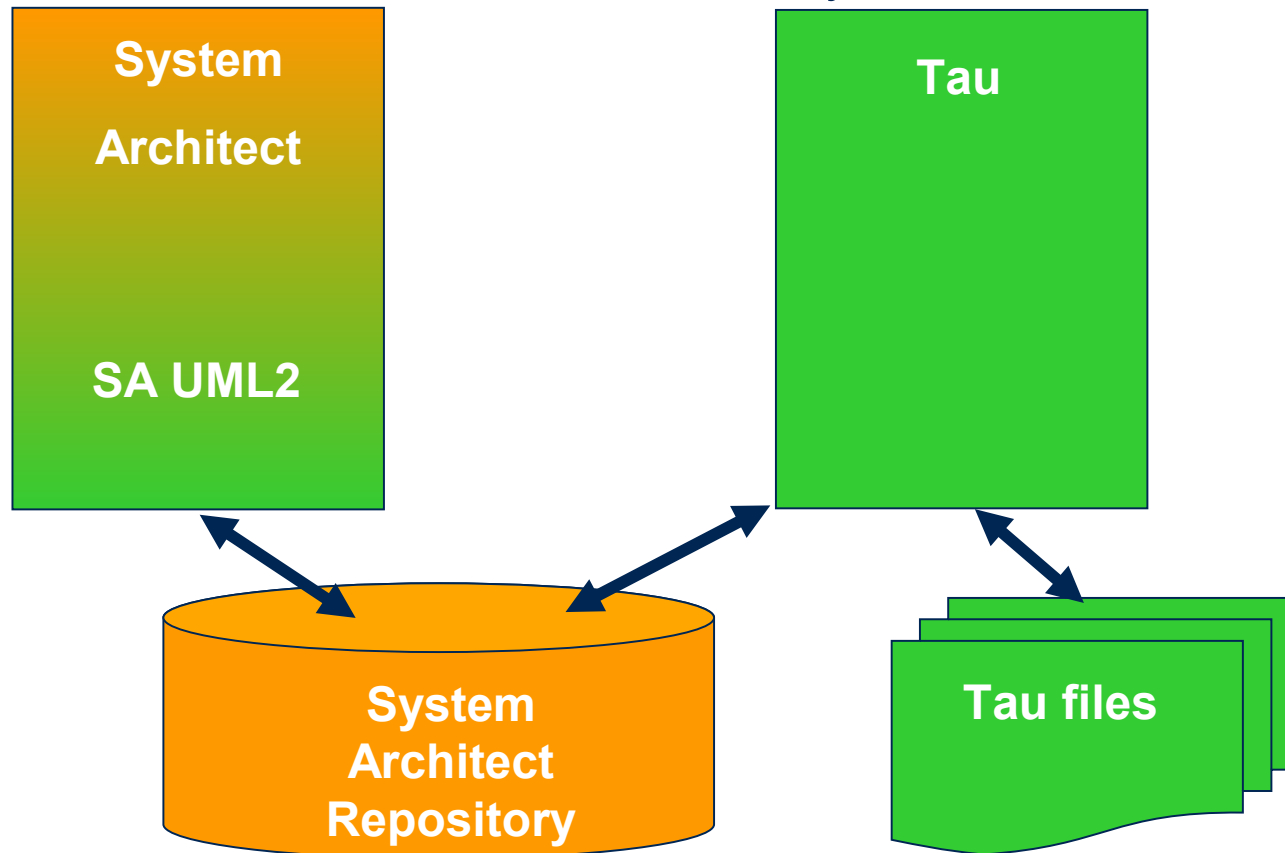
Summary

- Bridging the Business and IT gap is the challenge

- Use architectures to drive IT delivery from business objectives.

- Use integrated tools that support both the business change and IT development needs.

  - Telelogic System Architect supports Enterprise and IT Architecture

  - Telelogic DOORS supports requirements and impact analysis

  - Telelogic Tau supports SOA applicable technologies

    - Service execution, tracing, and testing

    - Various native importers to encourage simple reuse of architectures captured in other formats

    - Forward and reverse engineering of:

      - WSDL, XSD, Java, .NET/COM components, C#, C++

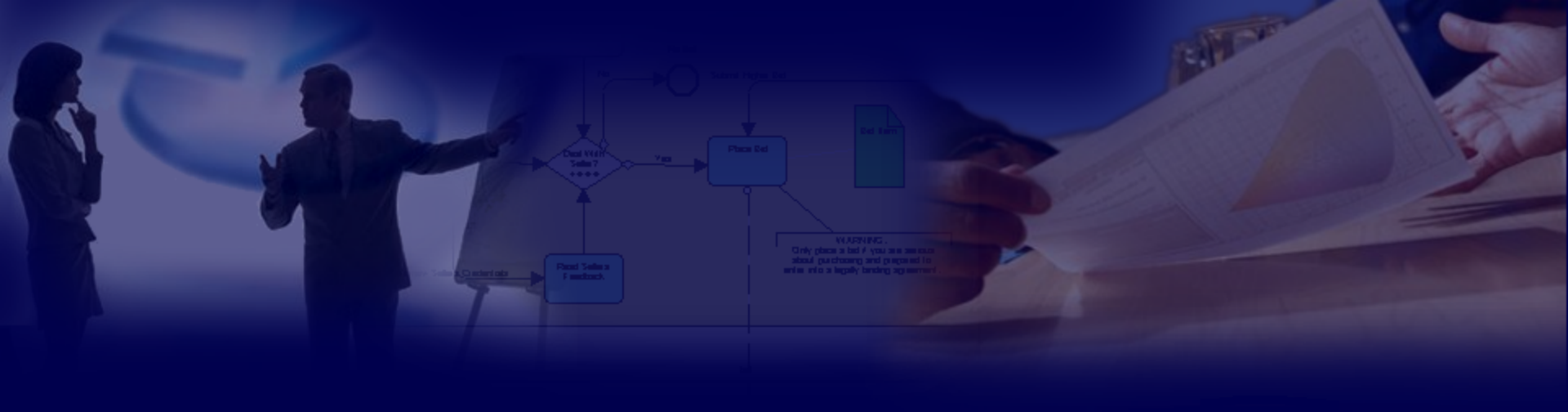 - Telelogic System Architect and Telelogic Tau share a repository for Enterprise level Concept to Code working

Telelogic

Contact

- Telelogic – www.Telelogic.com

partners with

- Evocean - www.evocean.ch

Forthcoming Events

Model Driven SOA and Tau – 20th February 2008 in Zurich

For More information contact Evocean

Thank You!