

# The Critical Role of Architects in an Enterprise SOA

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# SOA Opportunities and Challenges

## □ SOA makes it possible to:

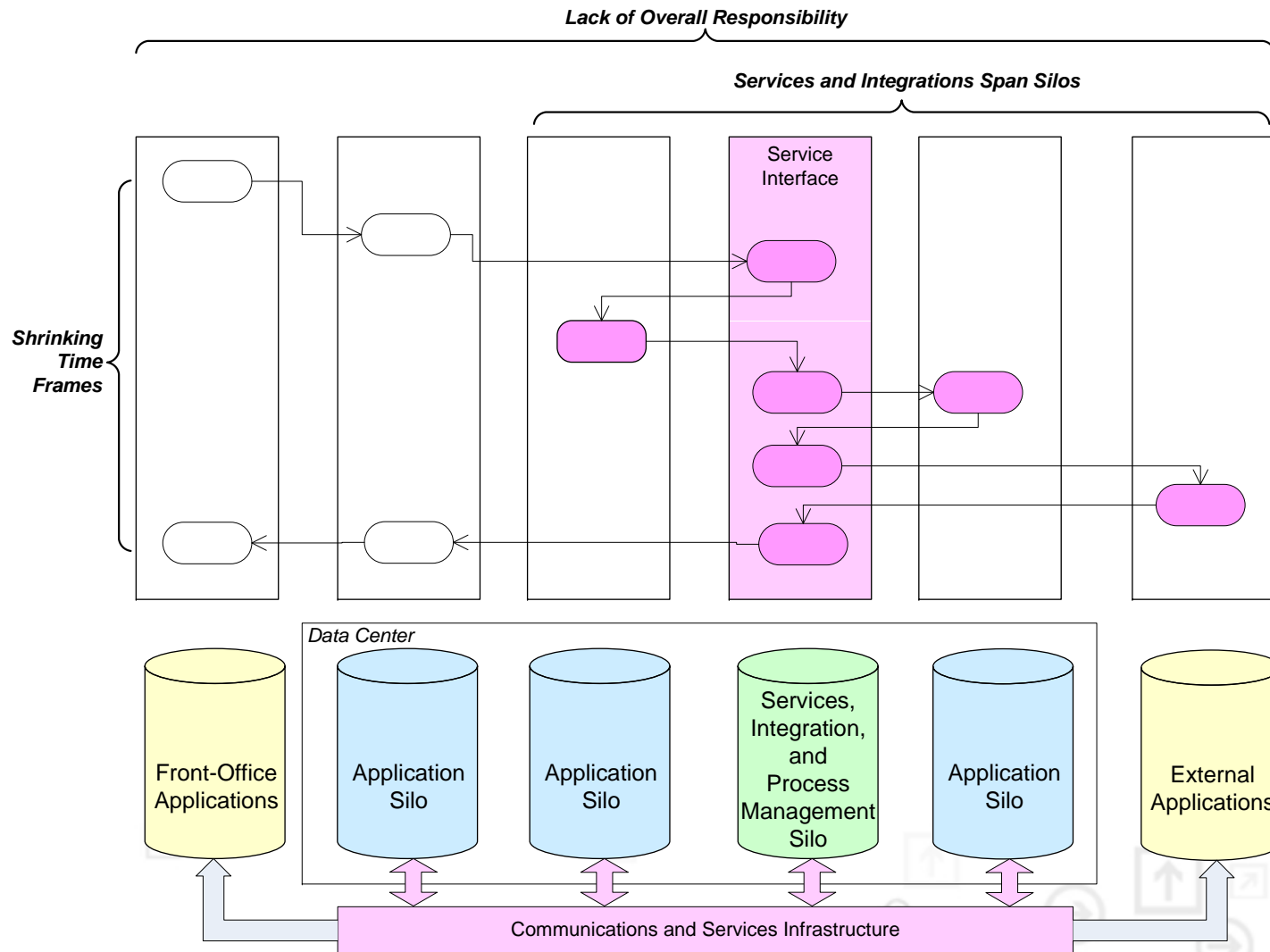
- Reduce systems complexity
- Increase systems and business flexibility

## □ The problem is:

- The benefits depend on a good architecture
- Architectures rarely start with a blank slate
  - The existing mess is a reality
- Architectures not built all at once
  - They are built bit by bit, project by project
- Development projects tend to be focused on business goals
  - No incentive to build reusable services
  - No incentive to capture and share design patterns

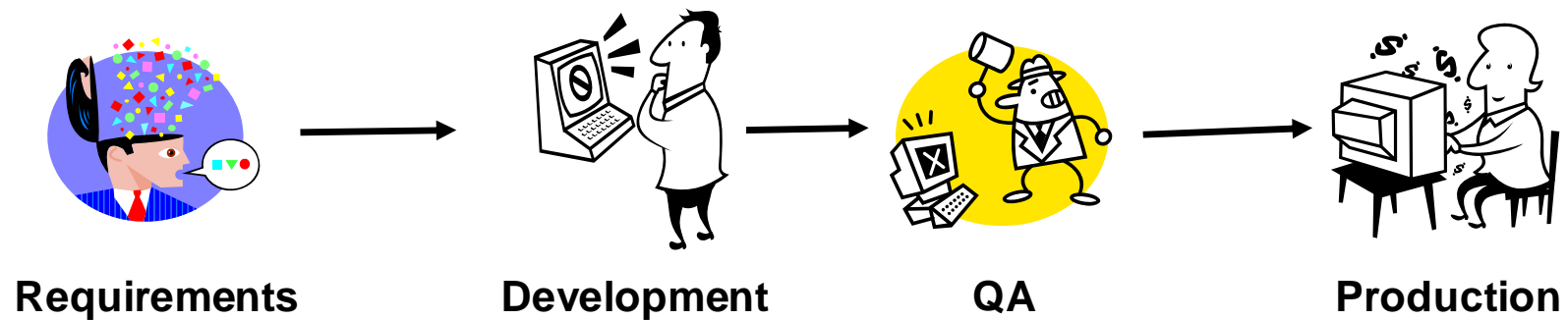
## □ Who focuses on the proper structure? **Architects!**

# Business Processes and Services Cross Organizational Boundaries



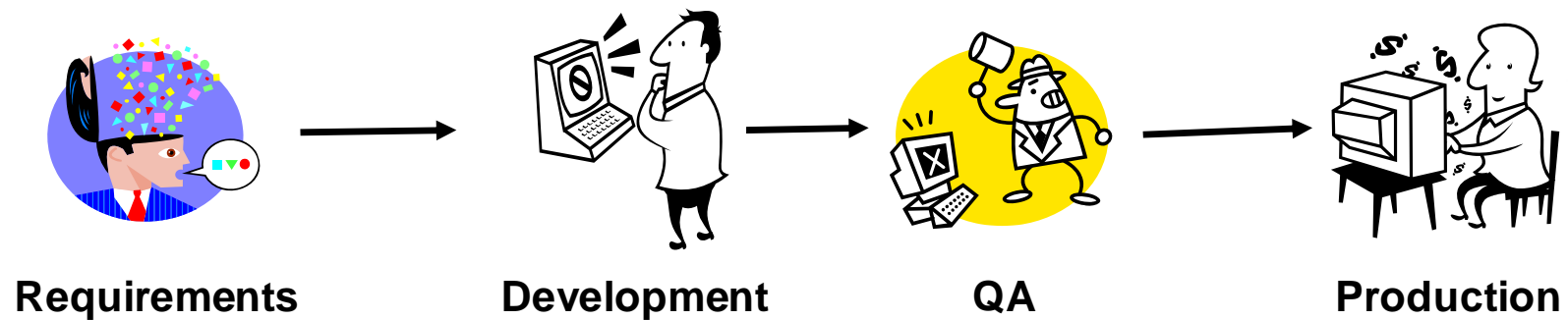
# Many Development Processes Have Become Degenerate

They assume a single system is being worked on

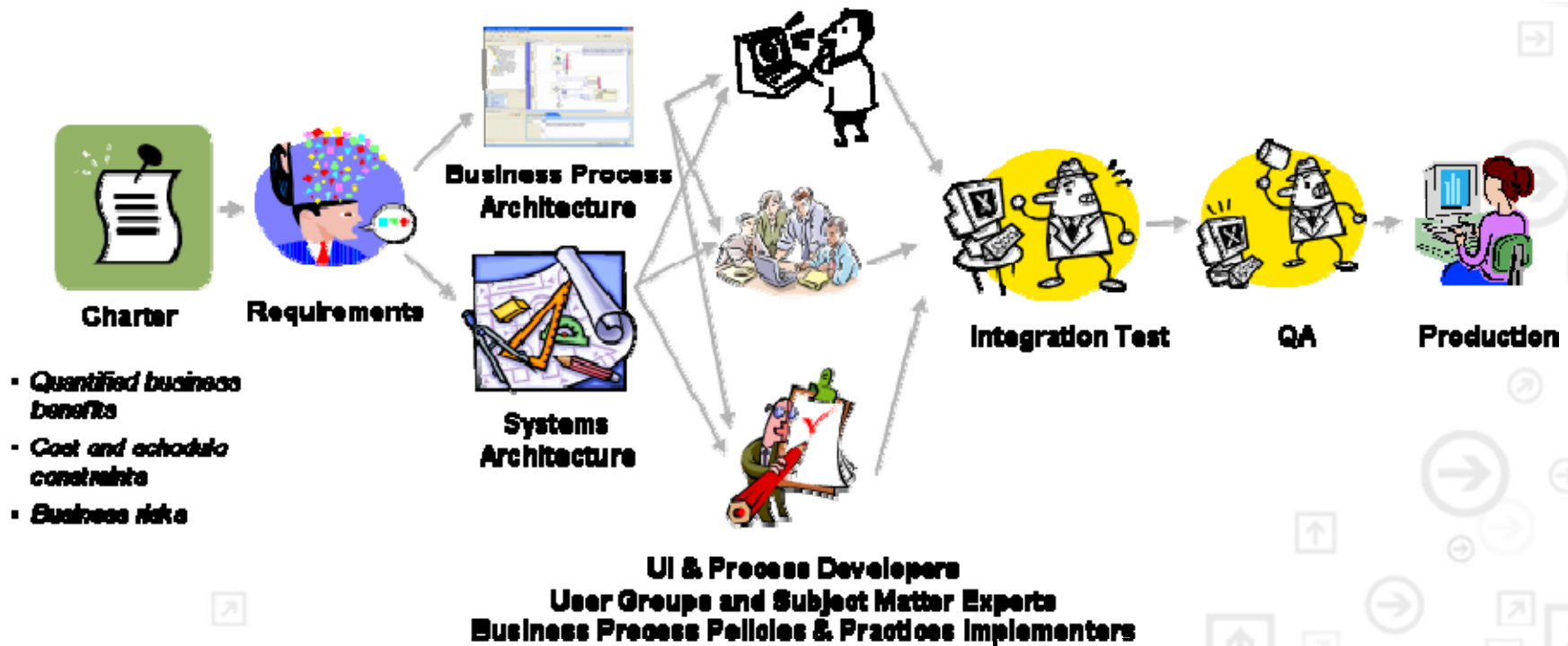


# Degenerate Processes Will Not Work for SOA and BPM

Multiple organizations and systems are involved

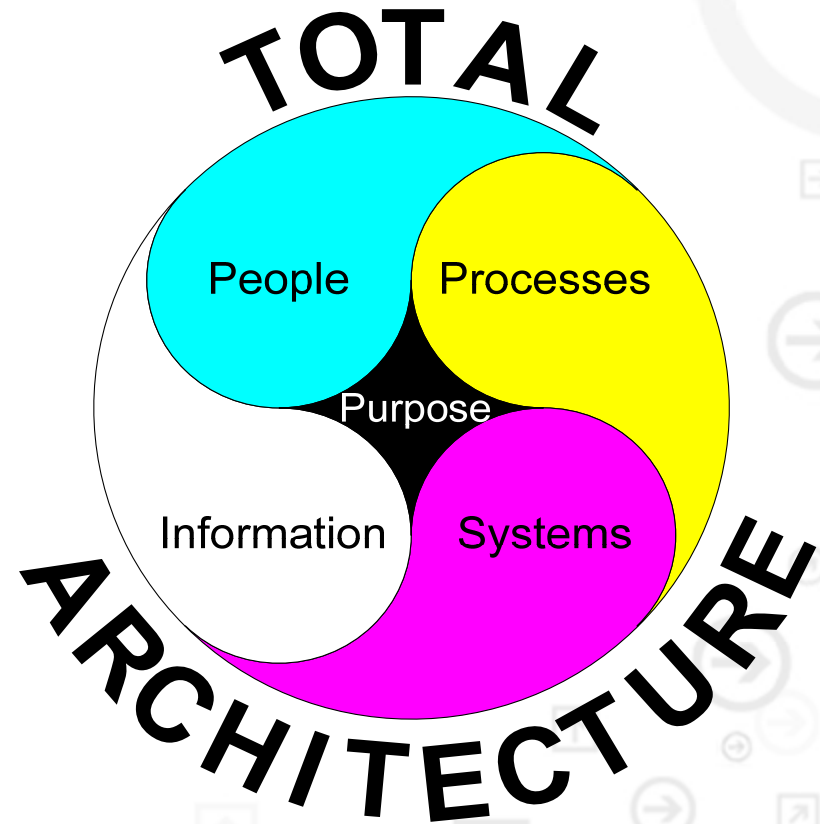


# A Richer Development Processes Is Required



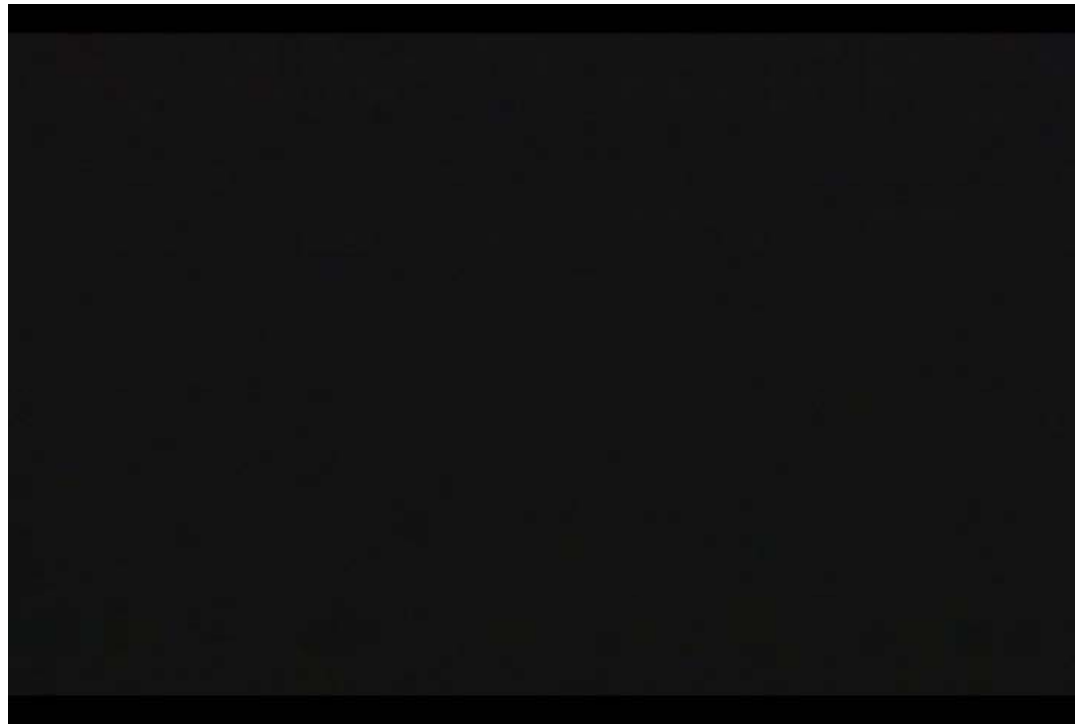
# A Total Architecture Perspective is Required

- **Business purpose**
- **Business processes**
  - Sales order management
  - Inventory management
  - Accounting
- **People**
  - Participants in the business processes
- **Information**
  - What information is being used
- **Computer systems**
  - Computers, networks, applications, infrastructure
- **How it is all organized**



# Enterprise Architectures Are Built Incrementally

- ❑ Each project builds a piece of the architecture
- ❑ Projects must be guided towards the goal
  - This is the role of the enterprise architects
- ❑ The enterprise must continue to operate!



# What is Architecture?



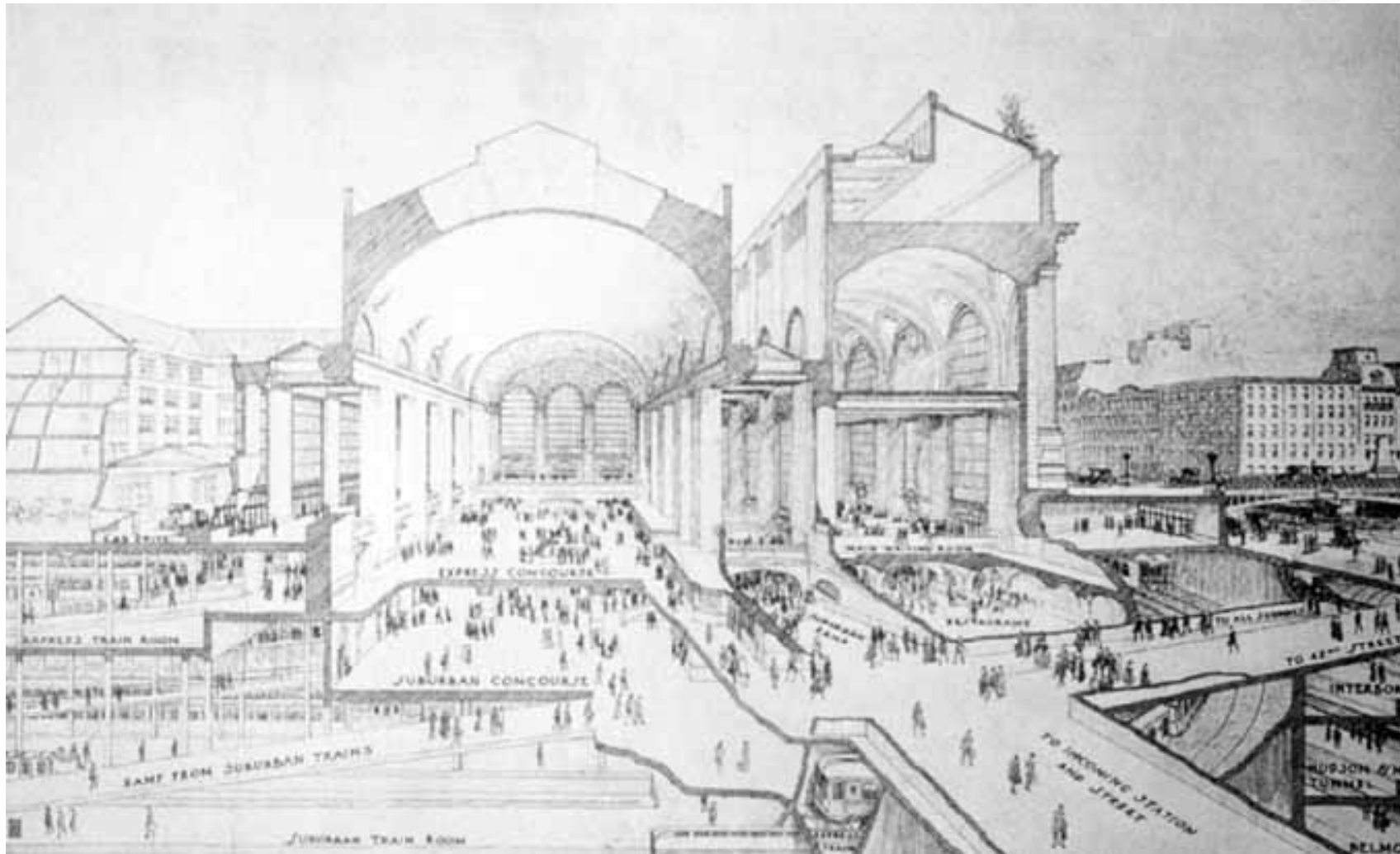
# Is it External Structure?



# Is it Internal Structure?



# Is it Organization?



# Is it Dynamics?

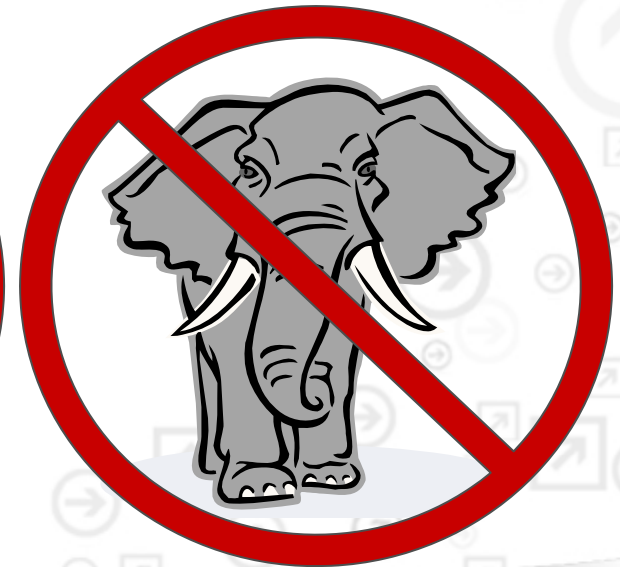


# Considering Dynamics Helps You Understand...

□ ...what is possible...

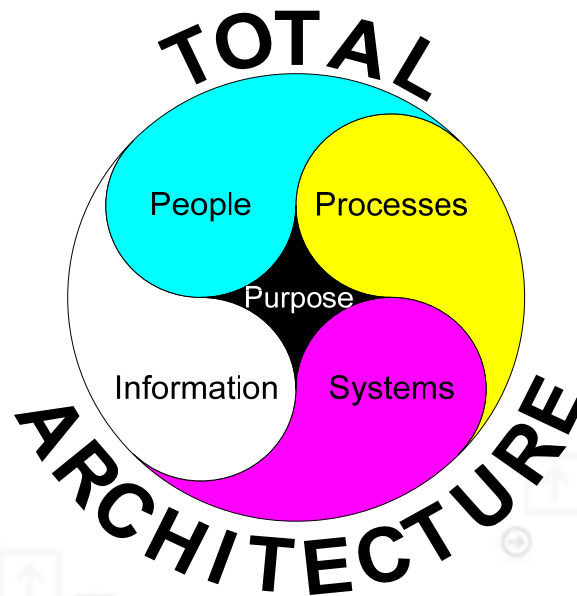


□ ...and what is not...



# Architecture is Structure with a Purpose

- ❑ **The purpose is to execute business processes**
  - Information is an important part of the process
- ❑ **The participants include both people and computers**
  - Organizations define the “architecture” of the people
- ❑ **You must consider the Total Architecture!**



# Business Processes are the Key to Total Architecture

- They are the mechanism for providing IT value
- They define the required collaboration between people and computers
  - Timing
  - Movement of information
  - Transfer of control (responsibility)
- **The value of the architecture lies in its ability to support business processes**
  - Current
  - Future

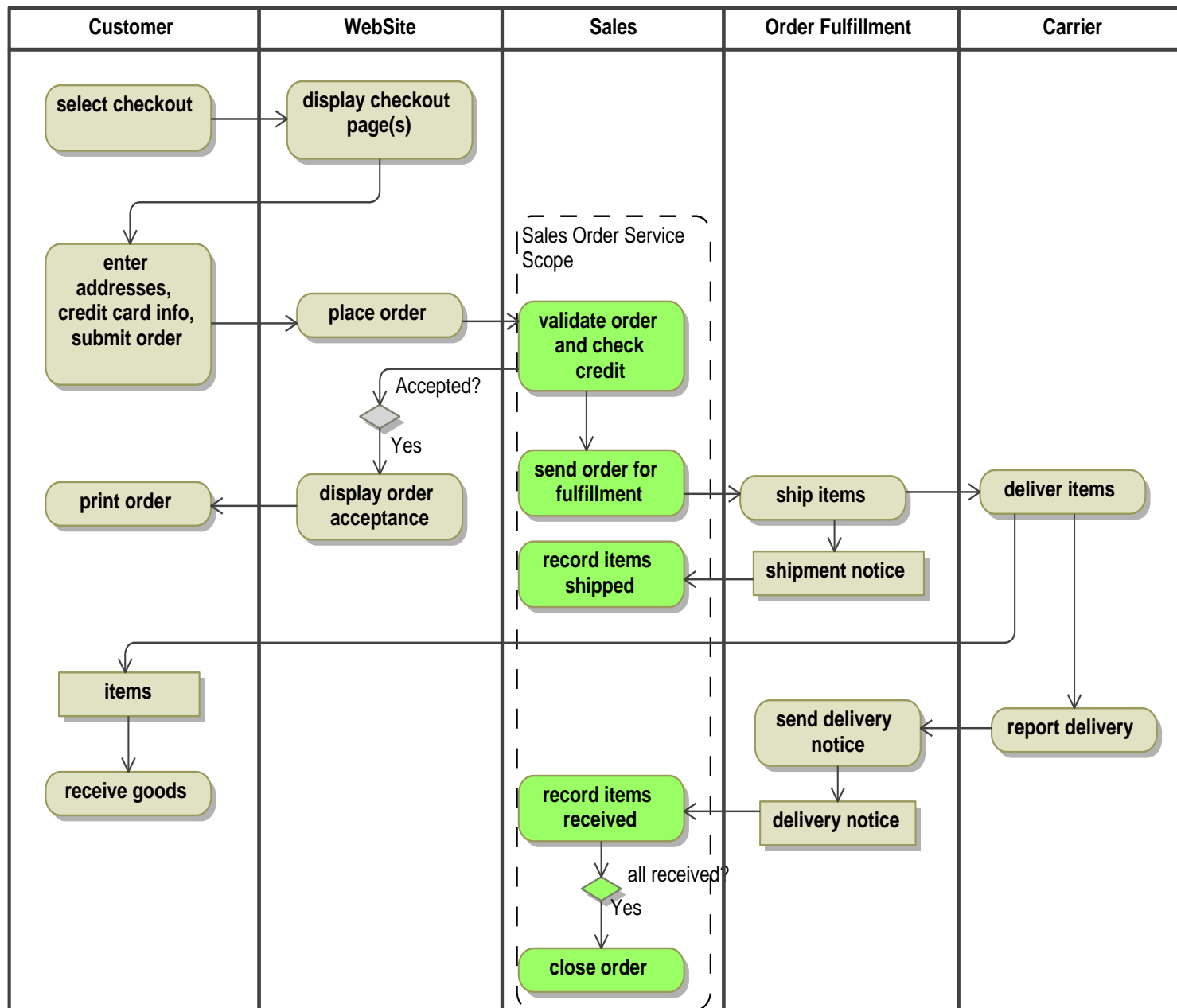
# Architect Responsibilities



# Project Architect Responsibilities

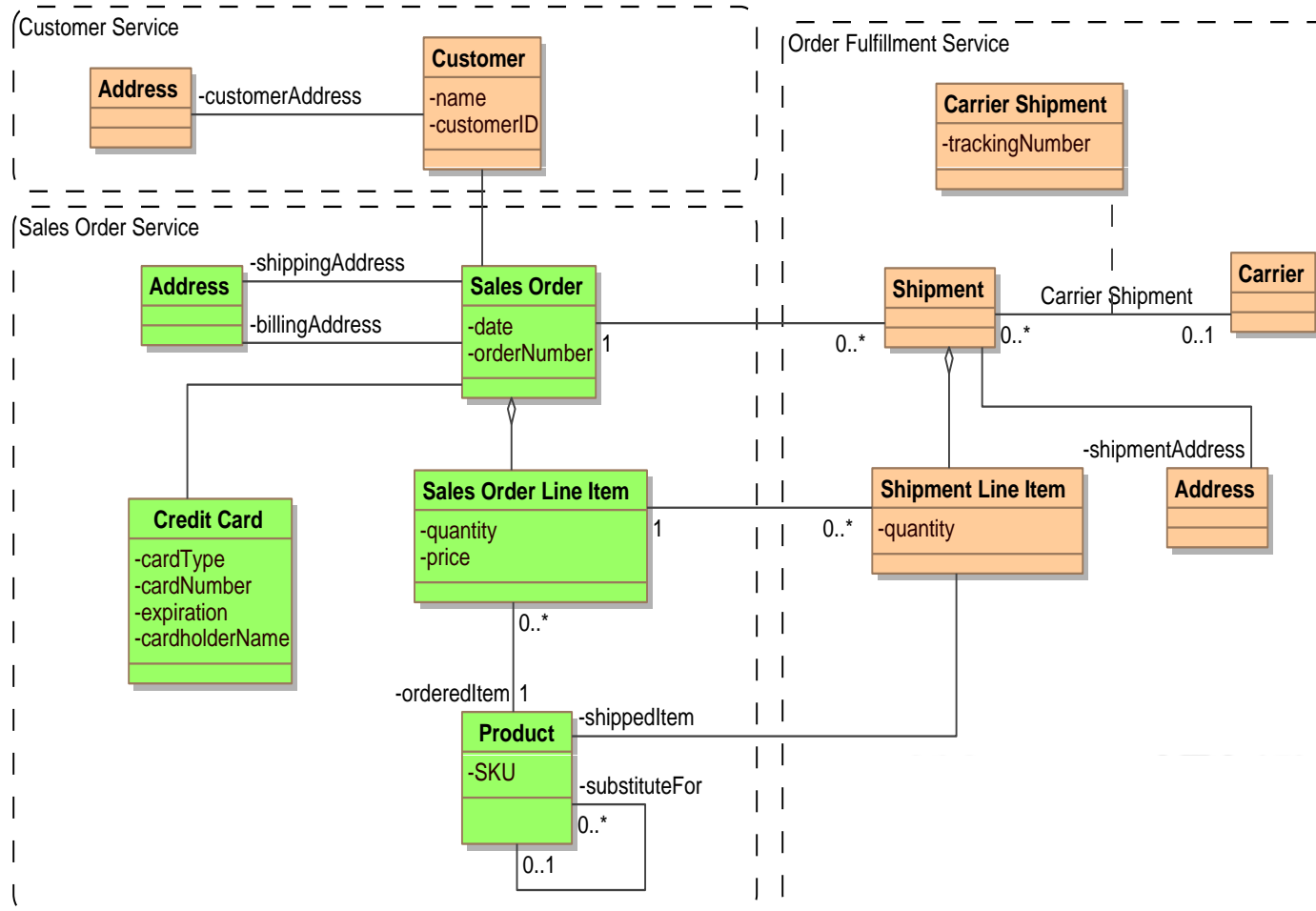
- **Modify the business processes impacted by current project**
  - Focus on the portions that change
  - Meet the business objectives
  - Remain within cost and schedule constraints
  
- **Identify service opportunities, looking at:**
  - Business processes using the services
  - Existing interfaces providing similar functionality
  - Data models of information managed by the service
  
- **Select design patterns to be used**
  - Identify the needed patterns
  - Design candidate patterns (possibly)

# Business Process Context



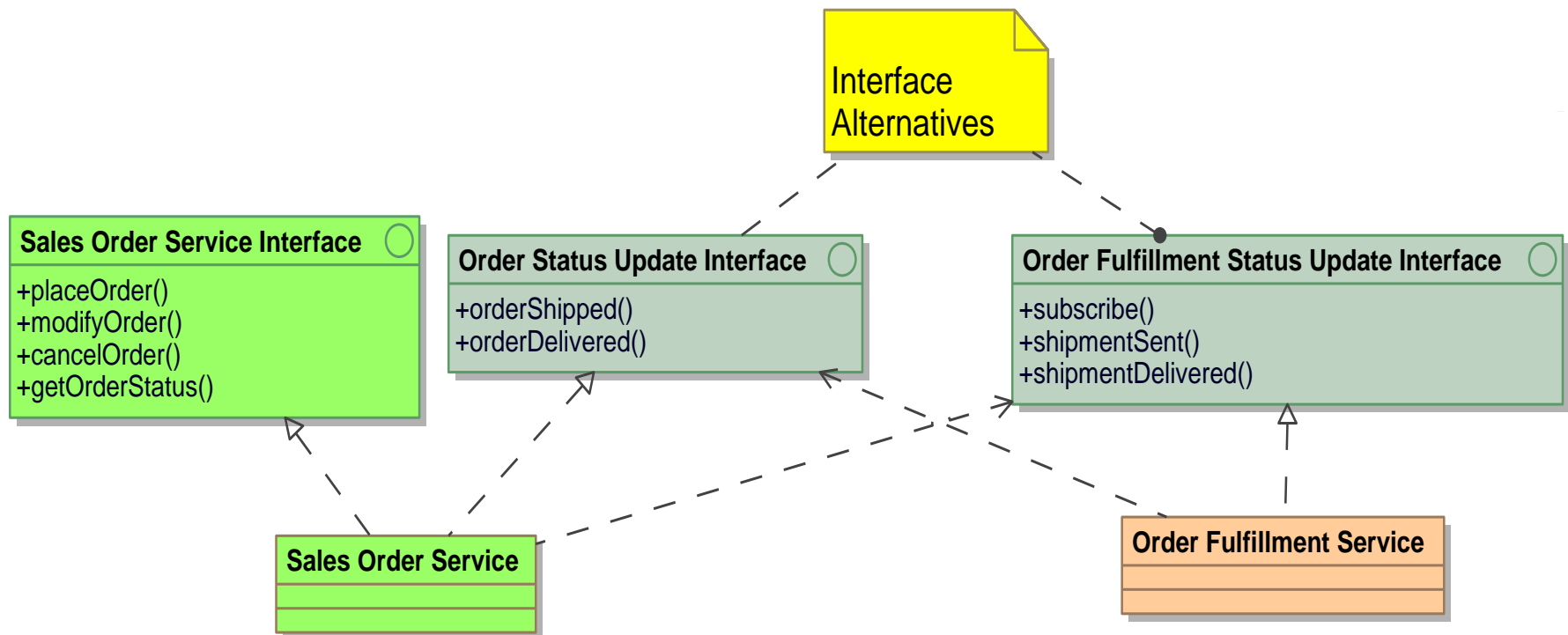
# Information Requirements

- ❑ What information does the service manage?
- ❑ What information does it use but not own?
  - Is the information cached? How is the cache maintained?

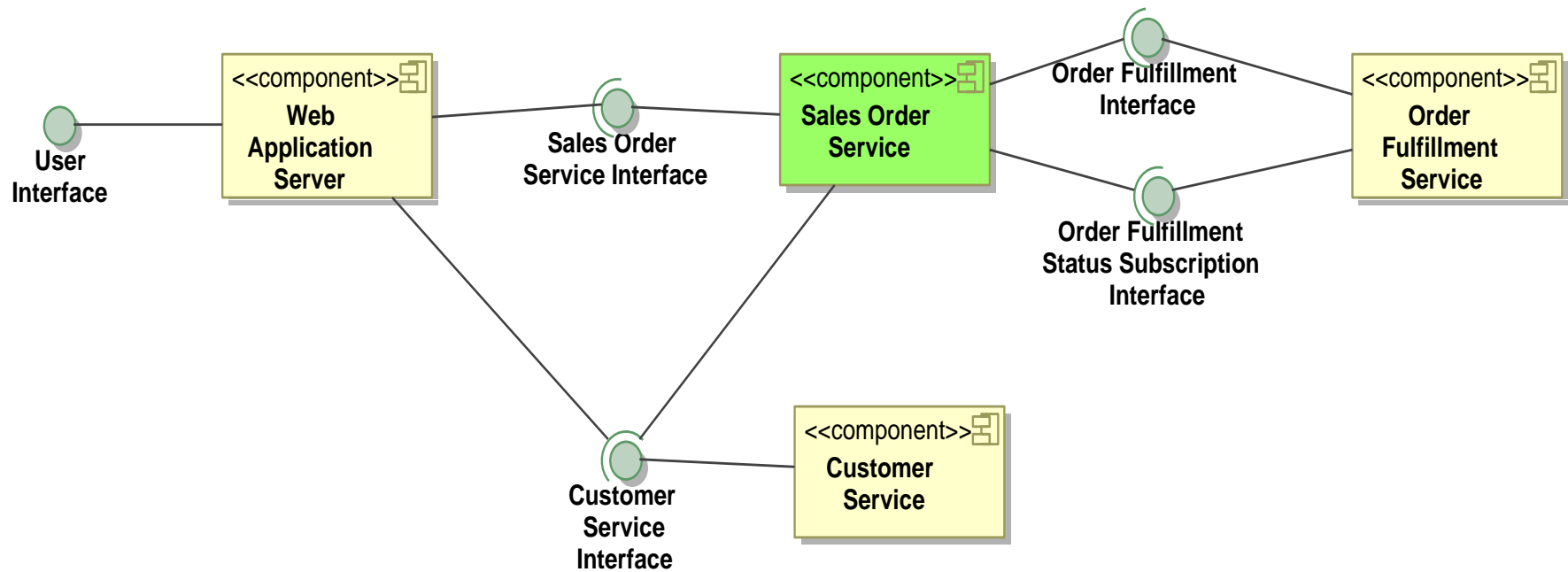


# Capability Requirements

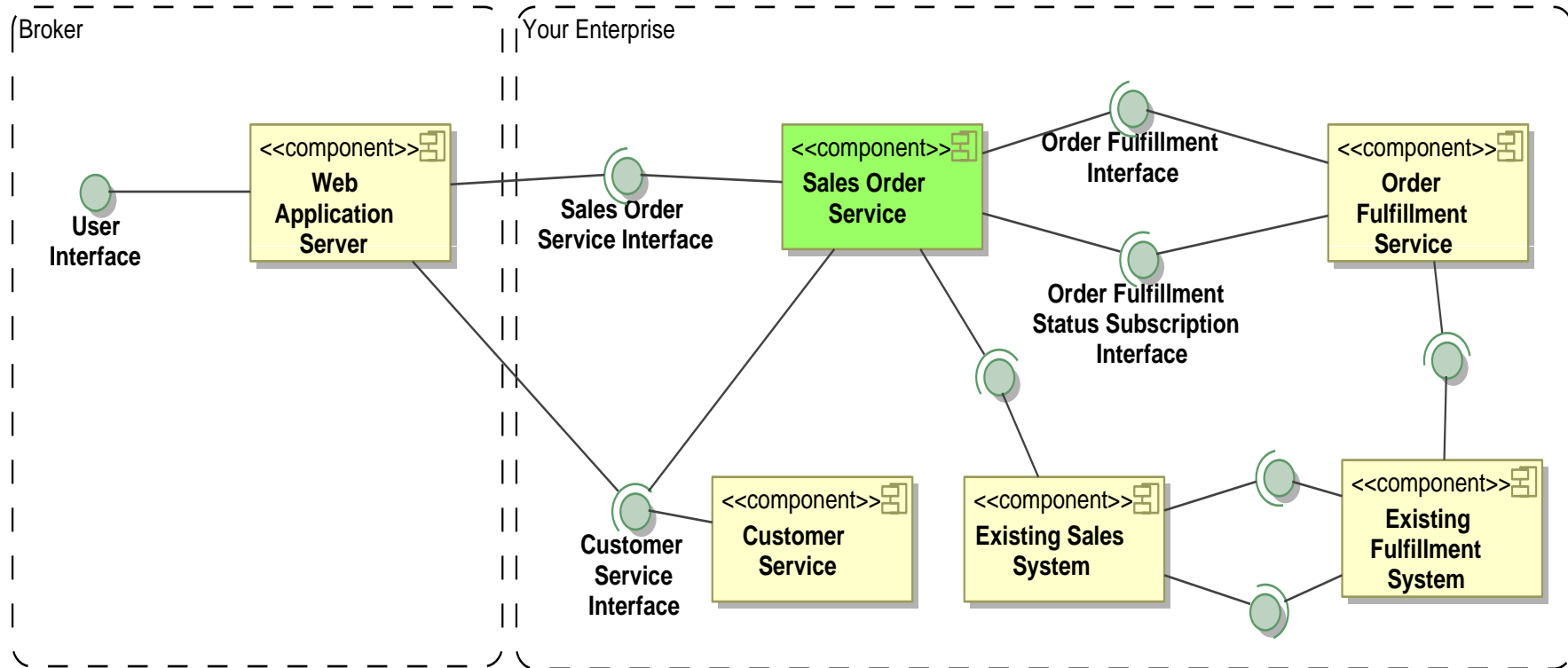
- Provided operations
- Don't forget about multi-step processes



# Partial Solution Architecture

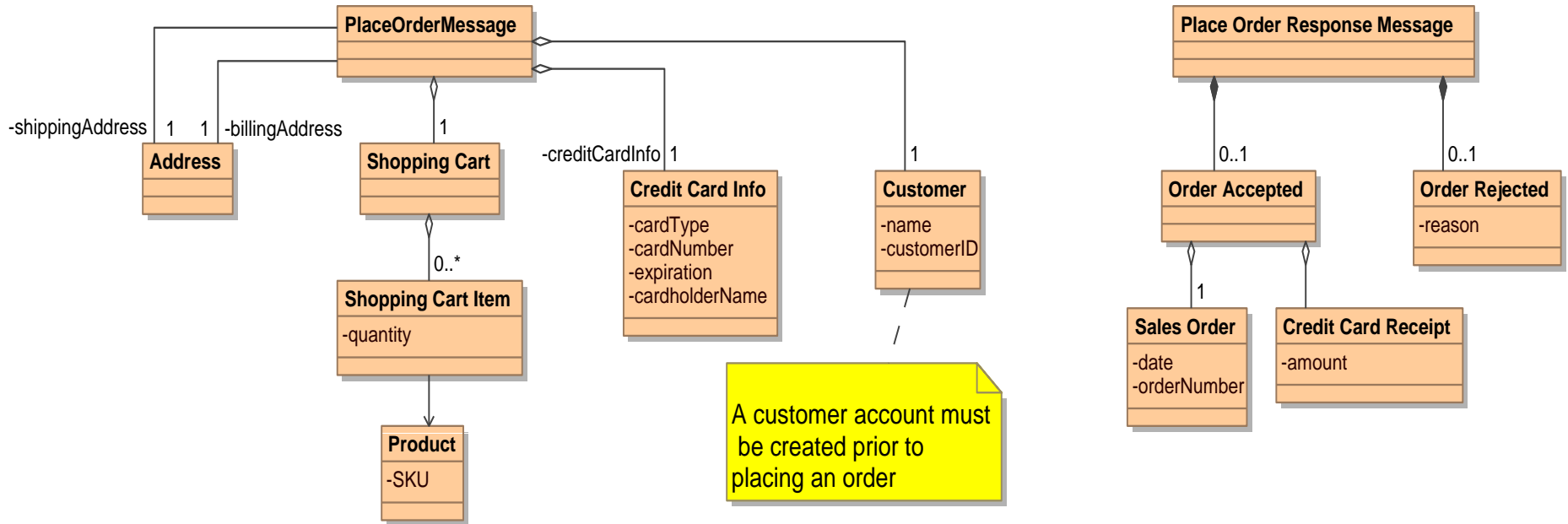


# Complicating Realities

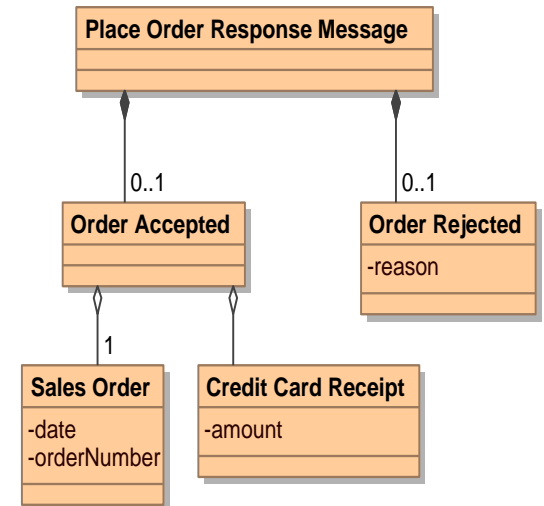


# Message Data Structures

- Information required
- Information returned
- Common data models
  - Whole messages?
  - Common sub-structures



A customer account must be created prior to placing an order



# Enterprise Architect Responsibilities

- **Define the target enterprise architecture**
  - System evolution takes longer than reorganization
  - Establish business goals and objectives for future-state architecture
  - Define practical evolution strategy
    - System replacement
- **Guide project teams in evolving towards that architecture**
  - Each project makes an incremental move towards the goal
- **Provide project-level governance**
- **Directly participate in projects requiring complex designs**

# Enterprise Architect Responsibilities (con't)

## □ Assemble comprehensive business process models

- Fragments come from individual projects
- Determine and document dependencies between processes
- Make models readily accessible to project teams

## □ Abstract and document interaction patterns

- Specify preferred implementations
  - Specify technologies to be used
- Oversee reference implementations
- Govern use of patterns

## □ Train and mentor project architects

- Provide a convenient means for answering questions

# Collective Architect Responsibilities

- ❑ **Balance short term needs against longer term objectives**
  - Too much short term yields inflexible systems
  - Too much long term and the enterprise suffers
- ❑ **Architecture decisions are investment decisions**
  - Make the appropriate cost-benefit tradeoffs
  - Balance short-term vs long-term gains
- ❑ **Be pragmatic yet forward looking**
  - Don't crash the plane while you are building it!
- ❑ **Lead design efforts**
  - Define the overall structure and organization
  - Avoid the policeman role

# Summary

- **Architecture encompasses organizations as well as systems**
  - Not just an IT responsibility
- **Business processes are the key to understanding architecture**
- **Architecture is built piecemeal, one project at a time**
  - Requires close cooperation between project and enterprise architects
- **Architects are the key to achieving SOA goals**
  - Reduced systems complexity
  - Increased systems and business flexibility
- **Architects must actively drive the structure**
  - Through authority
  - Through leadership

# Questions?

