

The Critical Role of Architects in an Enterprise SOA

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SOA Opportunities and Challenges

□ SOA makes it possible to:

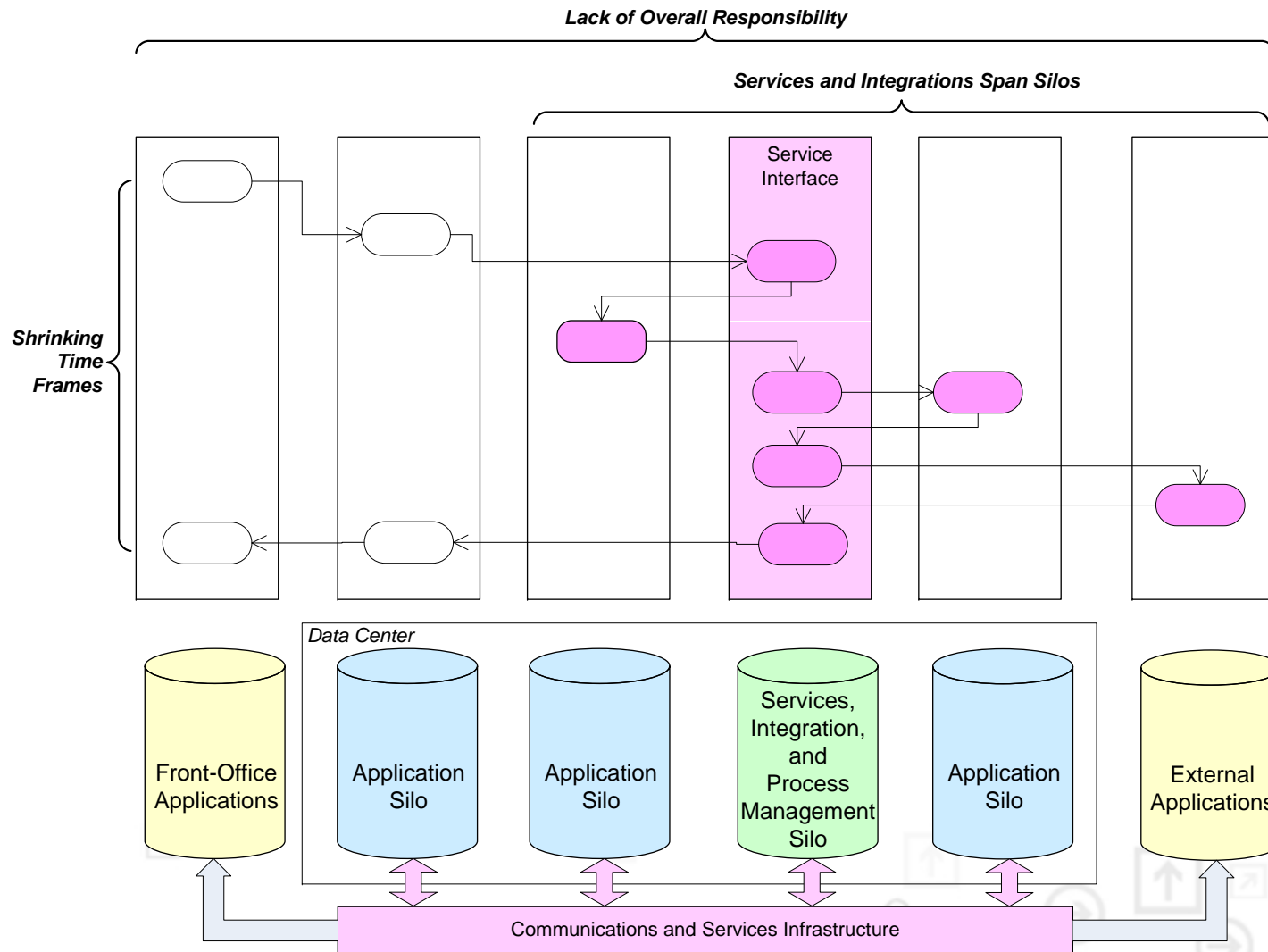
- Reduce systems complexity
- Increase systems and business flexibility

□ 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

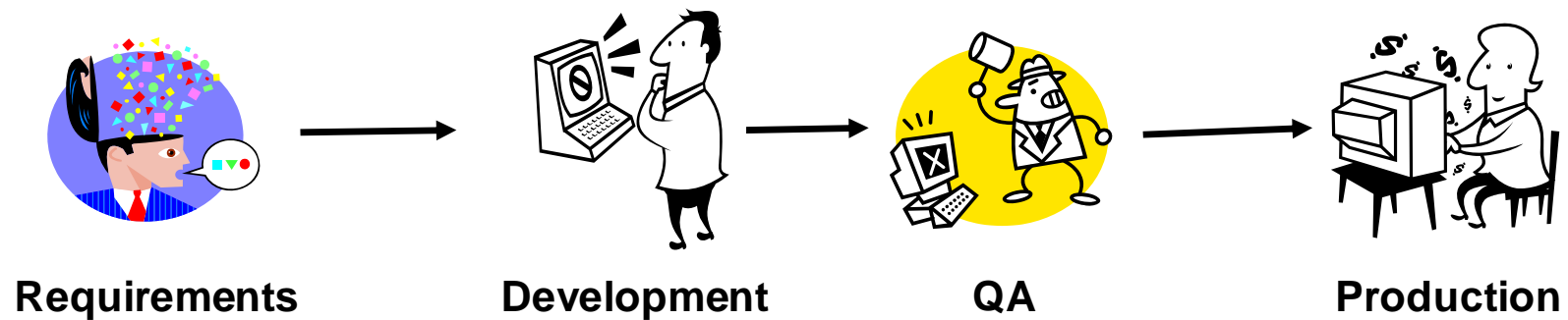
□ Who focuses on the proper structure? **Architects!**

Business Processes and Services Cross Organizational Boundaries



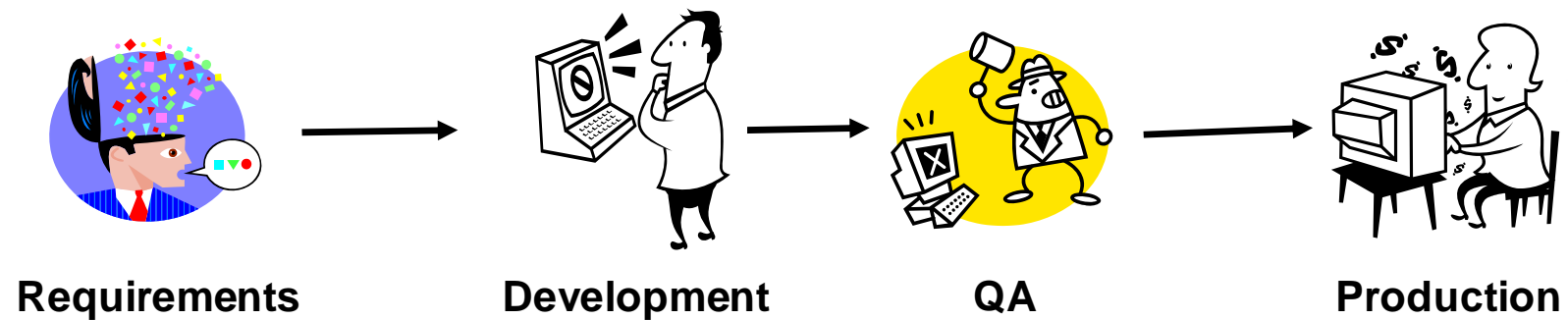
Many Development Processes Have Become Degenerate

They assume a single system is being worked on

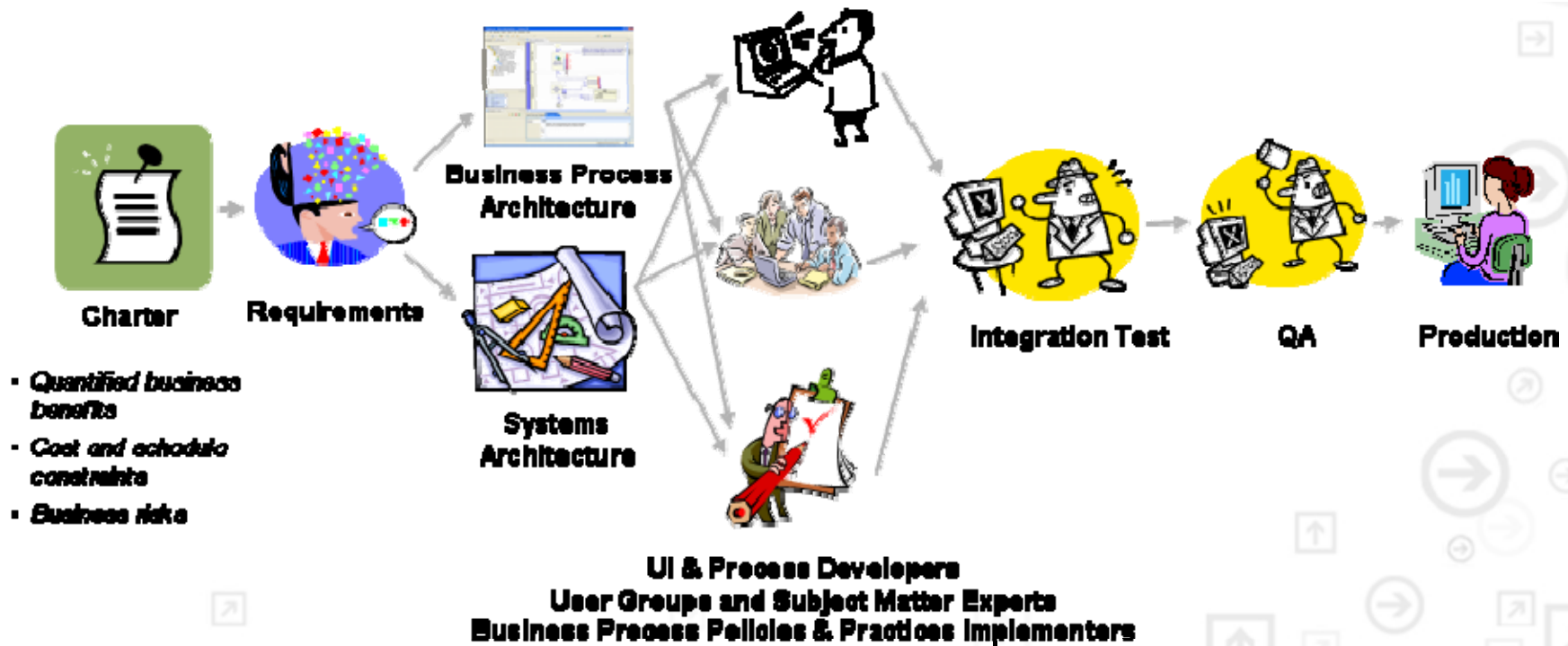


Degenerate Processes Will Not Work for SOA and BPM

Multiple organizations and systems are involved

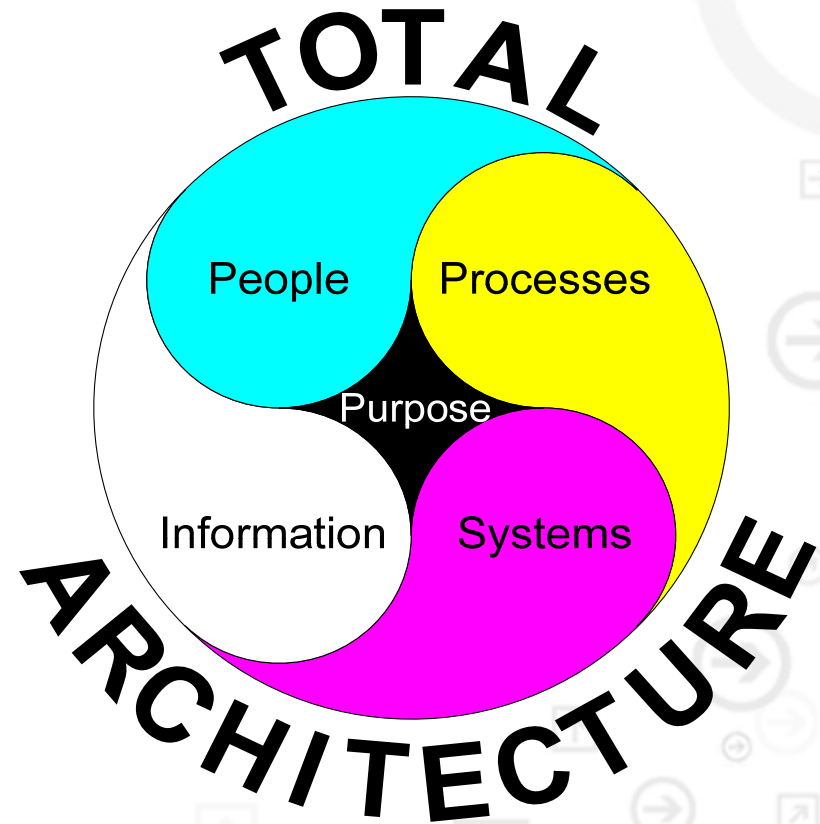


A Richer Development Processes Is Required



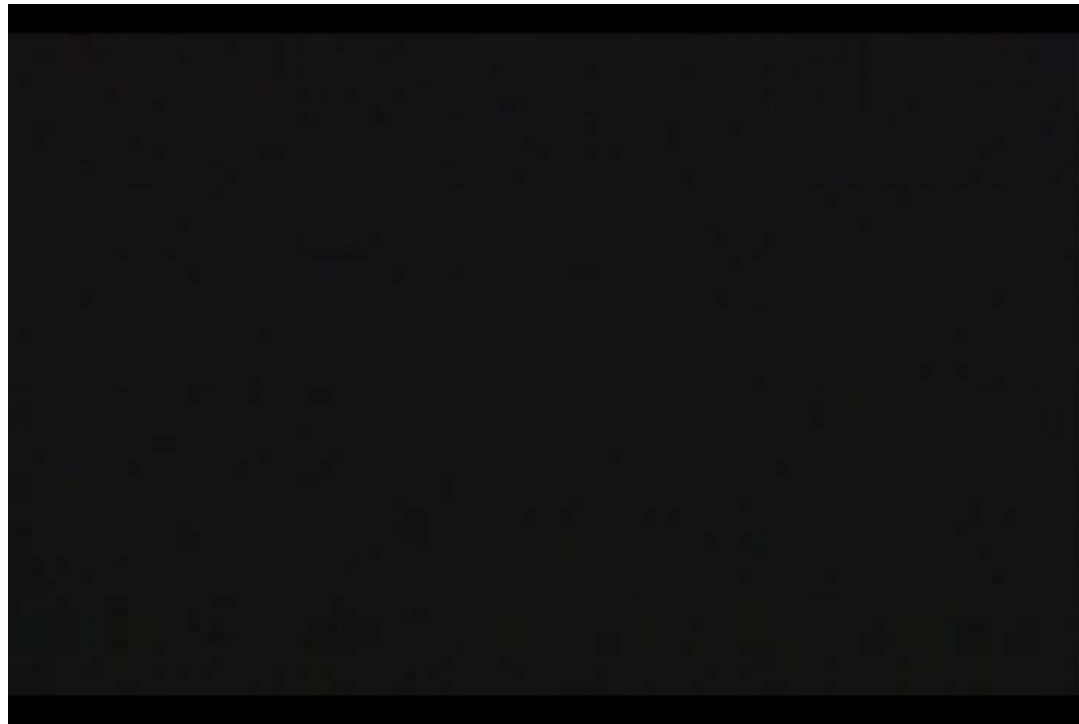
A Total Architecture Perspective is Required

- **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?



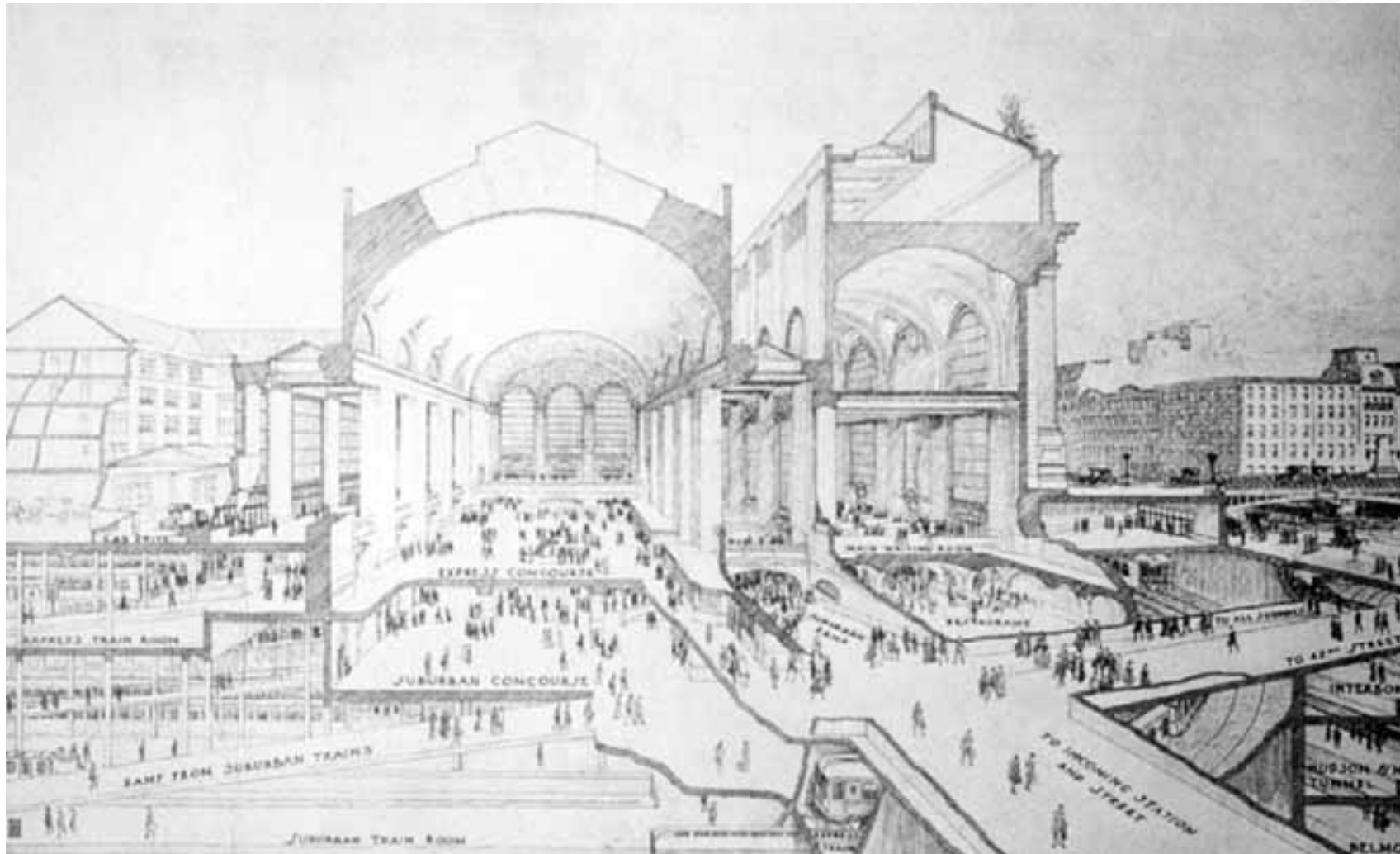
Is it External Structure?



Is it Internal Structure?



Is it Organization?



Is it Dynamics?

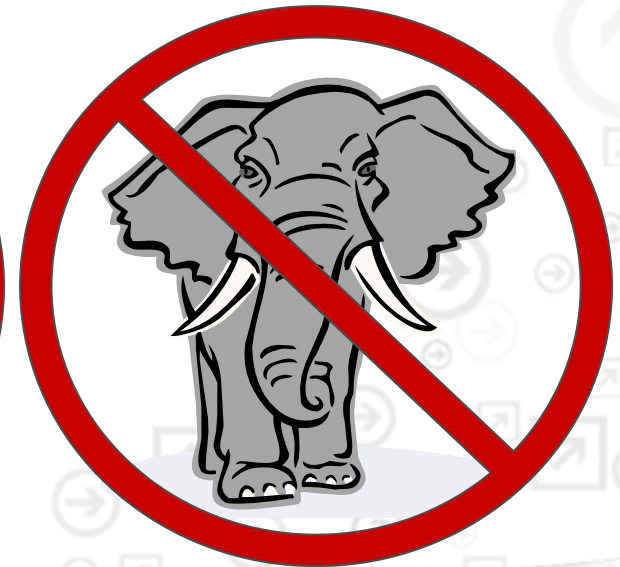


Considering Dynamics Helps You Understand...

□ ...what is possible...

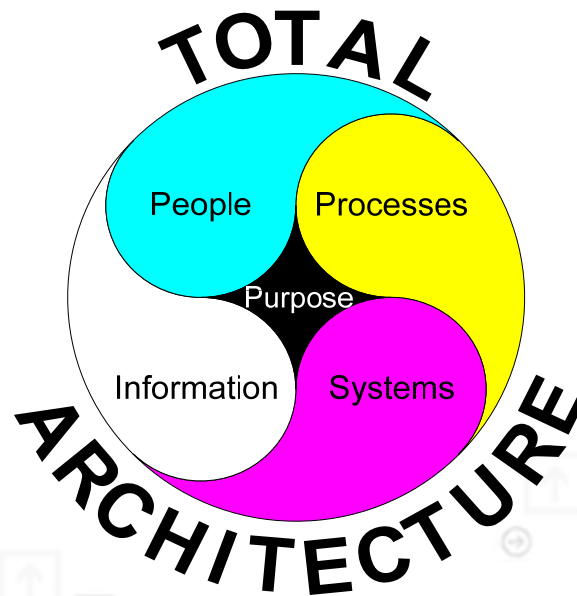


□ ...and what is not...



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



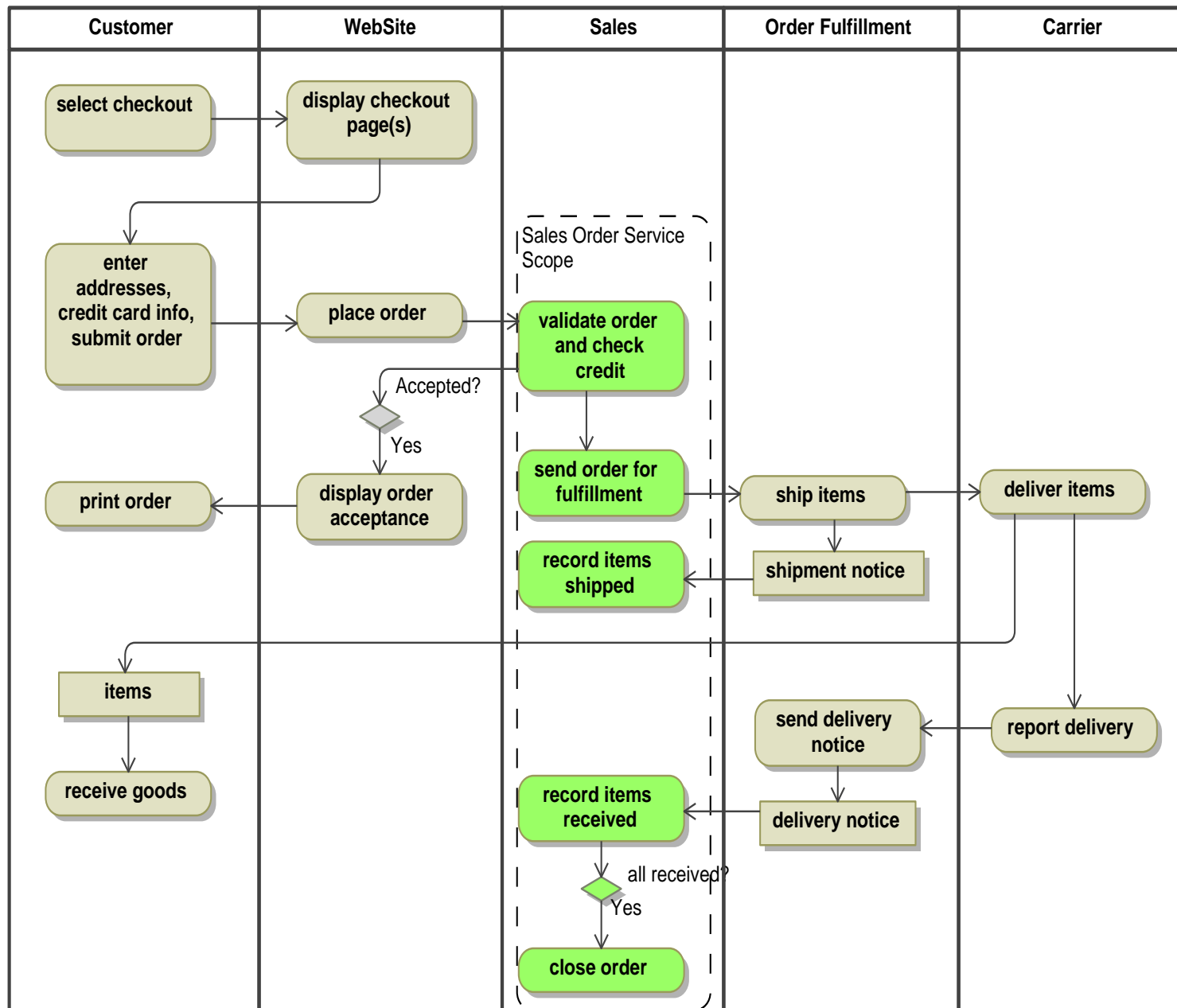
Project Architect Responsibilities

- **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

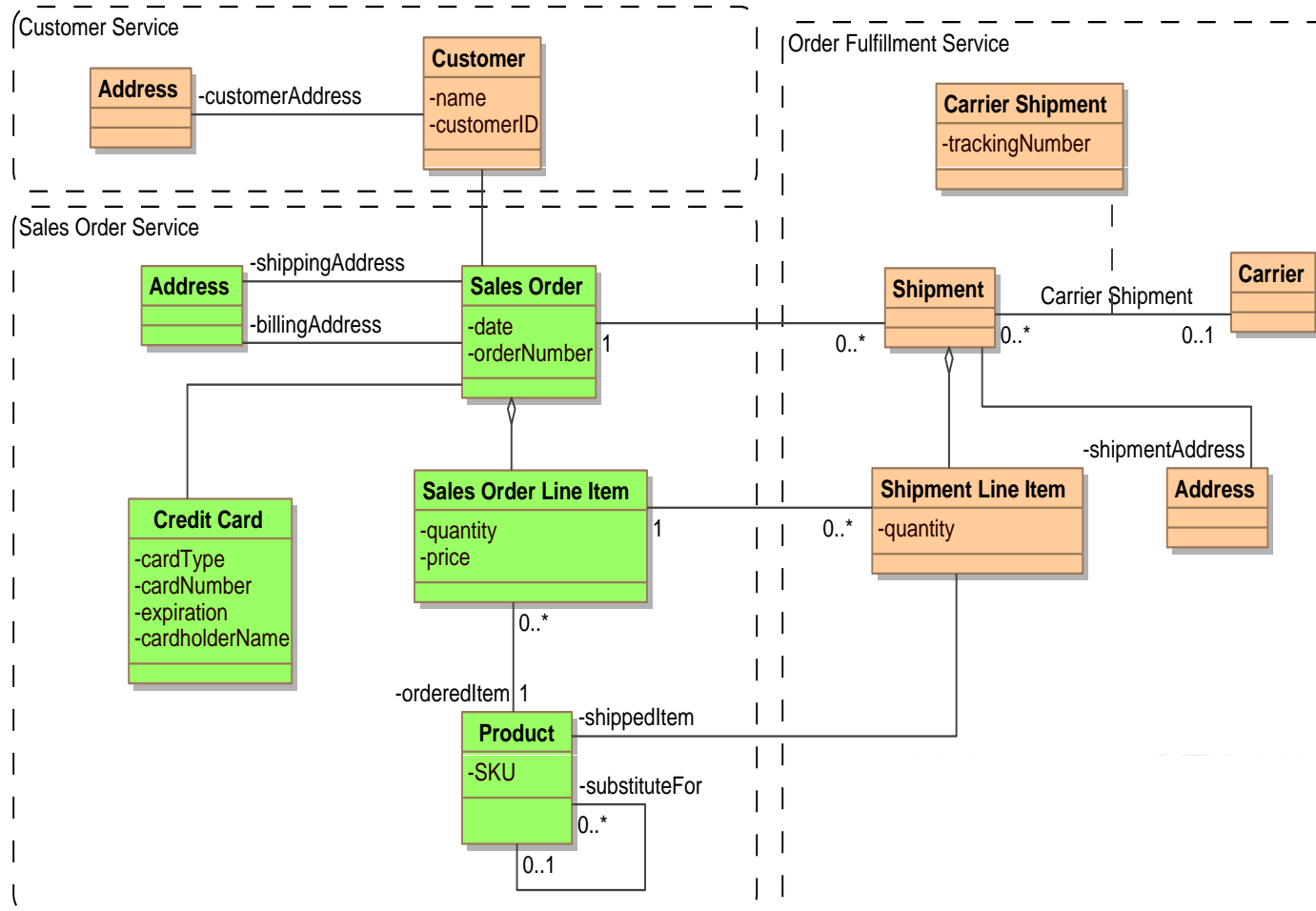
- **Select design patterns to be used**
 - Identify the needed patterns
 - Design candidate patterns (possibly)

Business Process Context



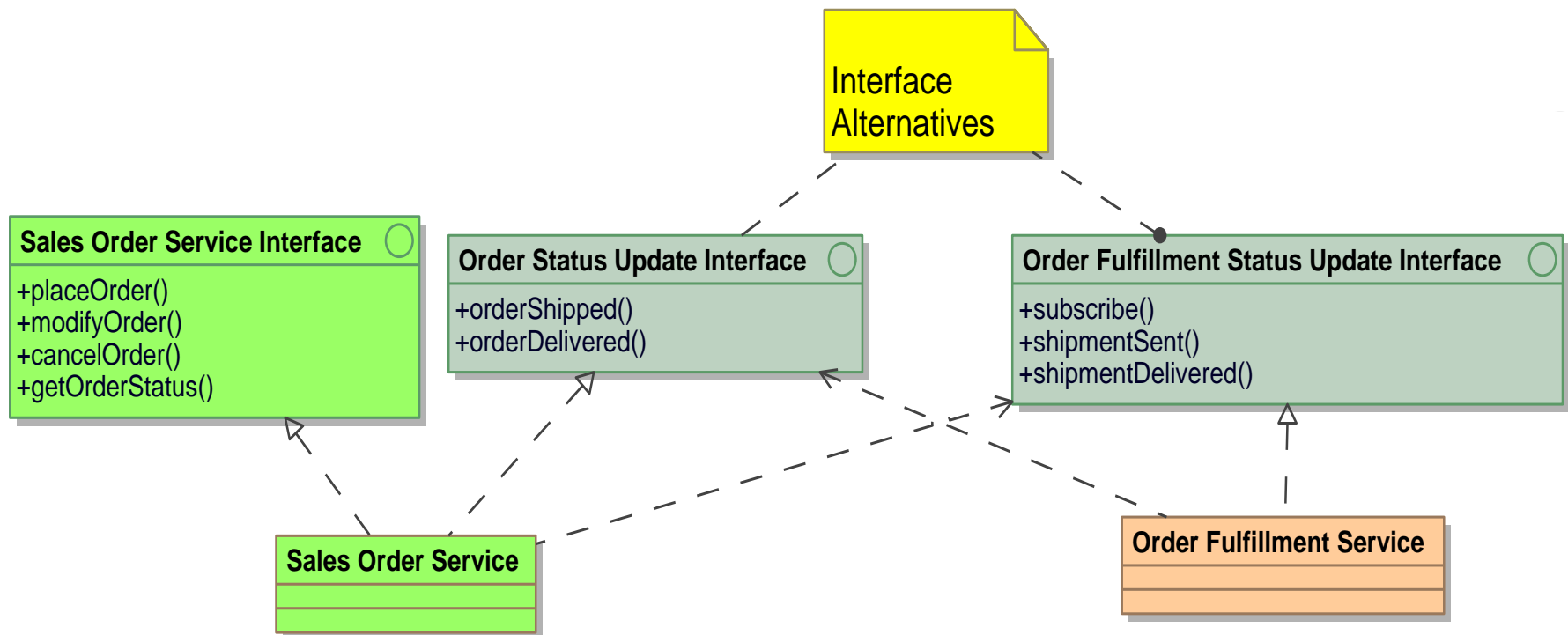
Information Requirements

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

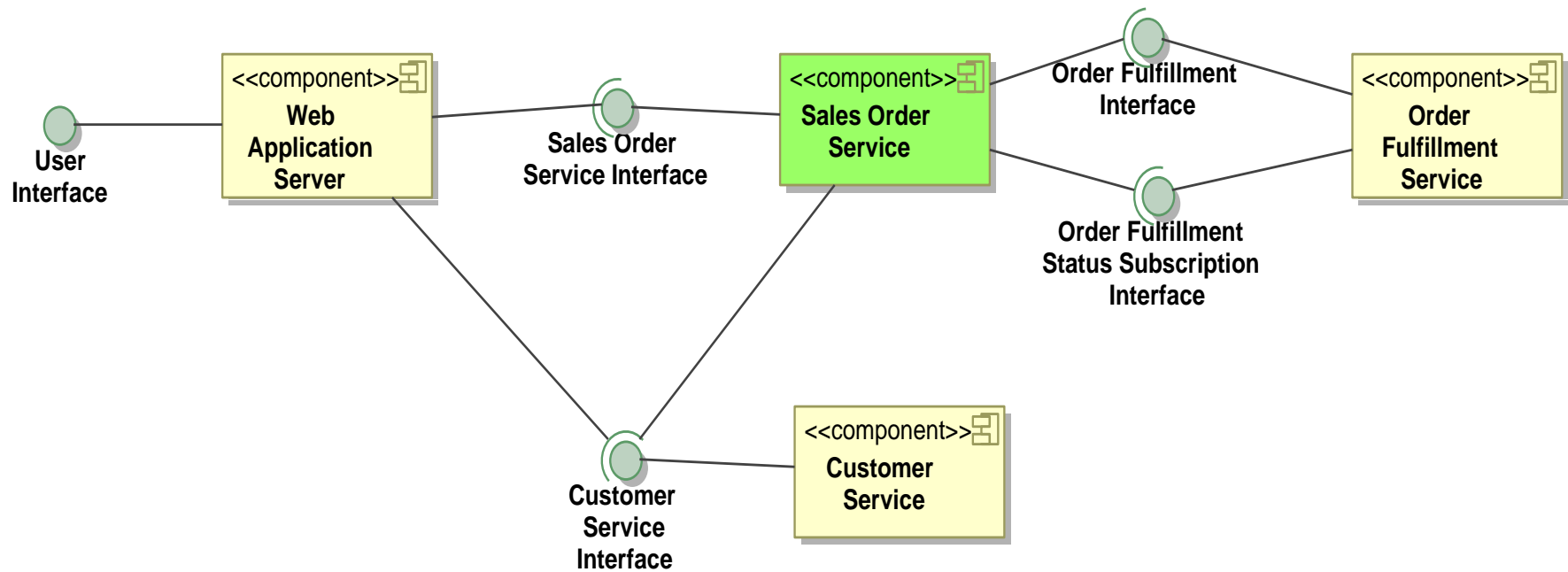


Capability Requirements

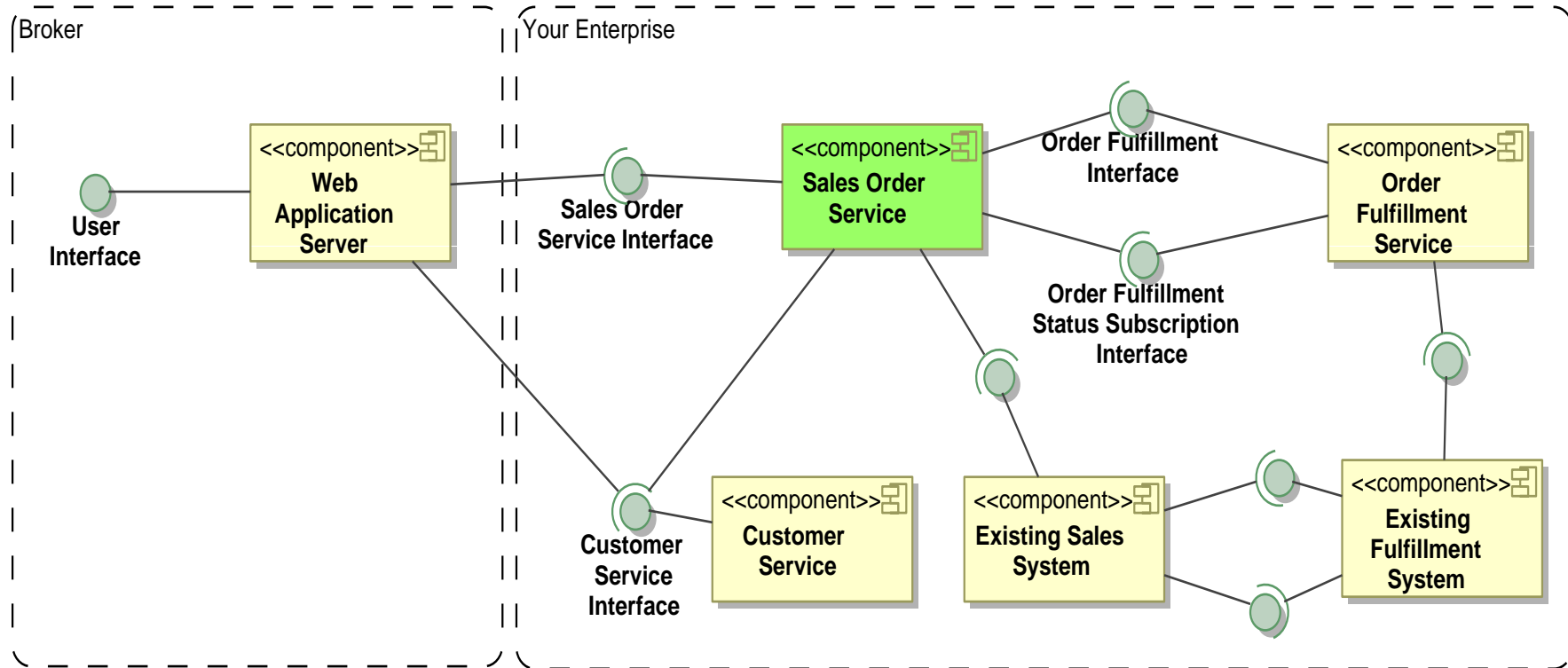
- Provided operations
- Don't forget about multi-step processes



Partial Solution Architecture

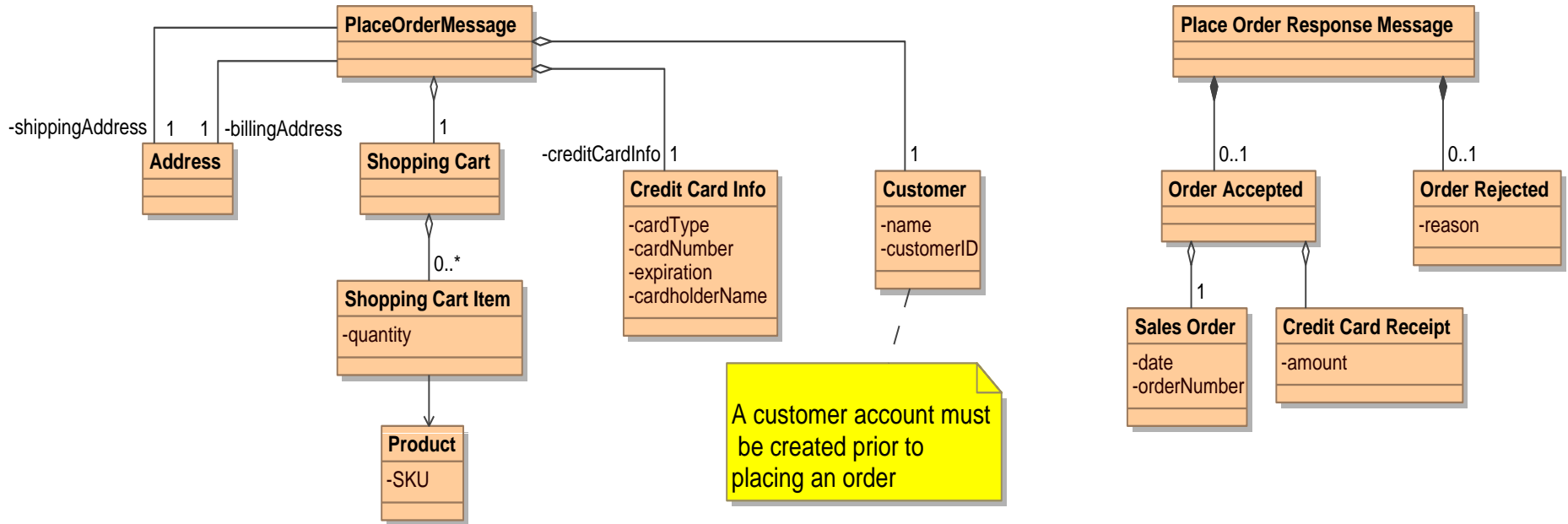


Complicating Realities



Message Data Structures

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



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?

