



Business Consulting Services

# Service-Oriented Modeling and Architecture: from Business Intent to IT Realization

*OMG SOA/WS/MDA workshop  
Orlando, FL, March 21-24 2005*

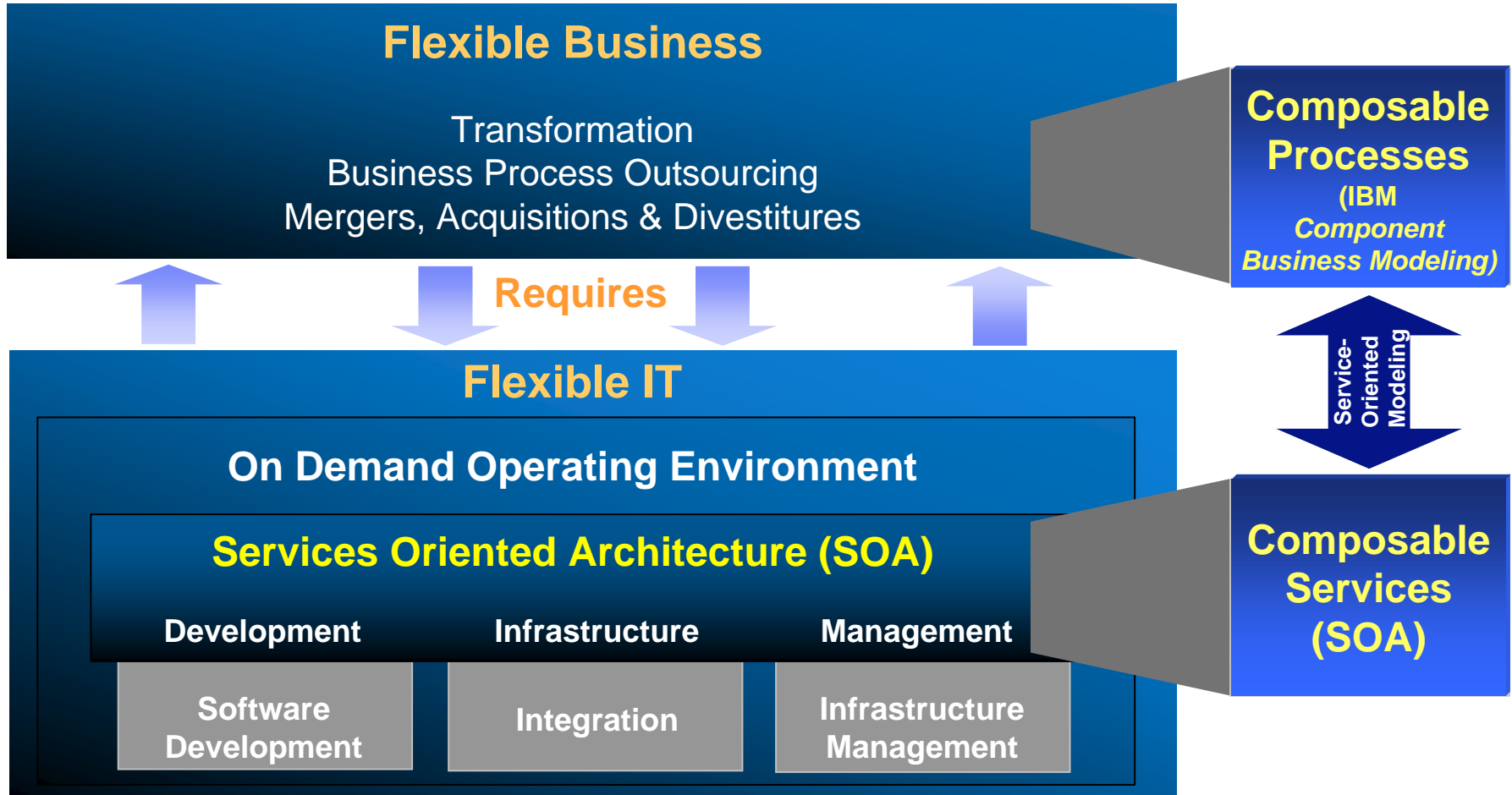
Luba Cherbakov, Distinguished Engineer  
IBM Global Services



## Agenda

- ***Bridging Business-IT Gap***
  - ***Component Business Modeling***
  - ***SOA***
  
- ***Service Oriented Modeling and Architecture Overview***
  - ***Overview***
  - ***Example***
  
- ***Q/A***

Greater flexibility is required from business models and the supporting IT.  
**Service-Oriented Modeling and Architecture (SOMA)** provides in-depth guidance on how to move from business models to the models required by an SOA



# Agenda

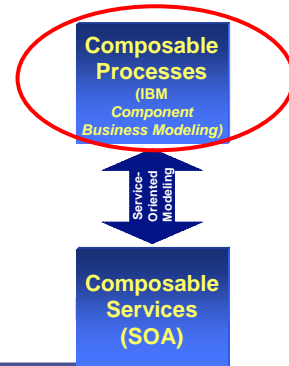
- **Bridging Business-IT Gap**

- **Component Business Modeling**
- **SOA**

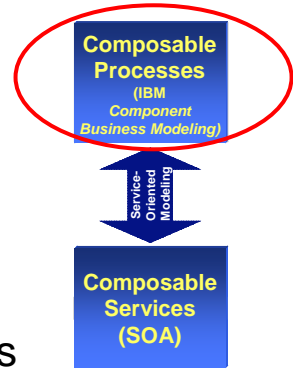
- **Service Oriented Modeling and Architecture Overview**

- **Overview**
- **Example**

- **Q/A**

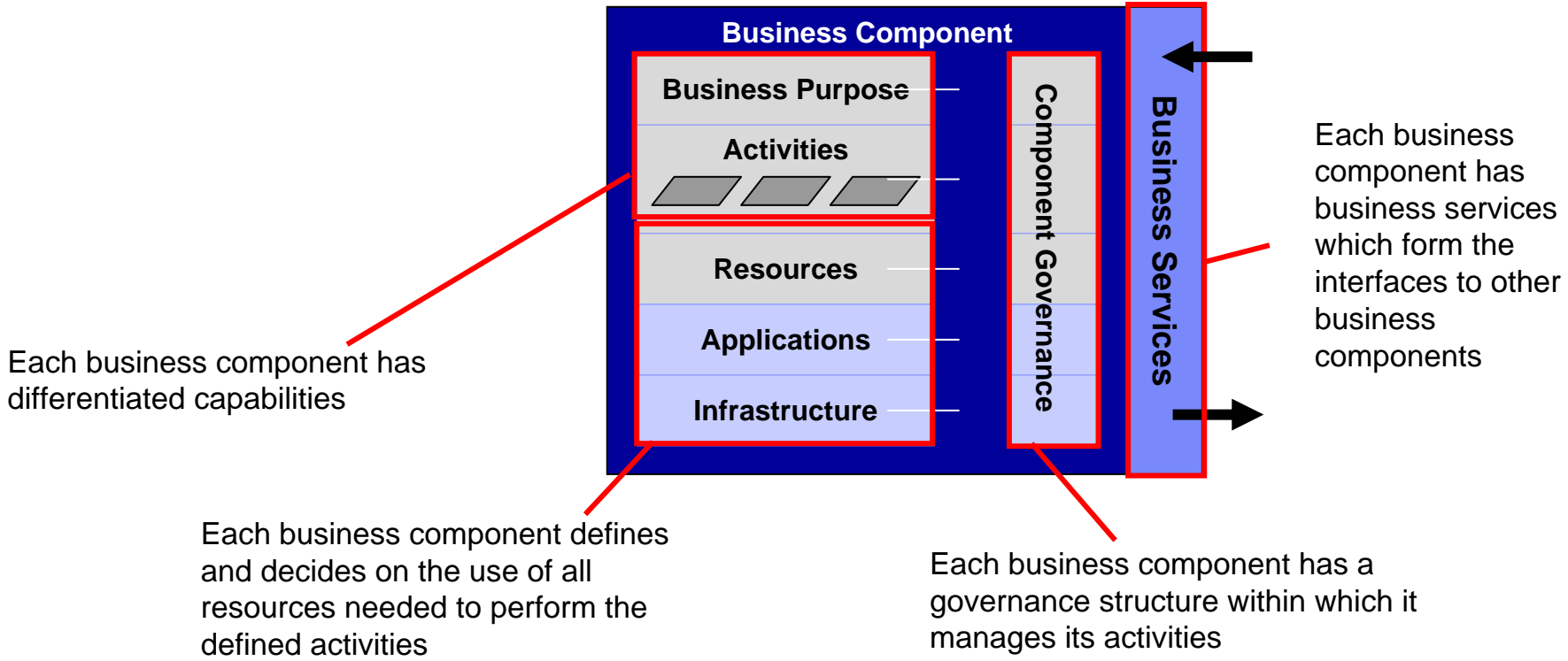


# The IBM Component Business Modeling (CBM) framework is an alternative to traditional views of a business - the building block of a component business model is a 'business component'



A component is a business in microcosm. It has activities, resources, applications, infrastructure. It has a governance model. It provides goods and services (business services)

## Business Component Elements



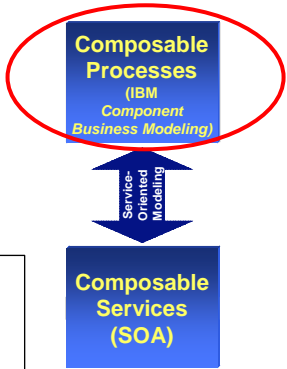
# We use a Business Component Map as a tabular view of the business components in scope

A **Business Component** is a part of an enterprise that has the potential to operate independently, in the extreme as a separate company, or as part of another company.

Columns are **Business Competencies**, defined as large business areas with characteristic skills and capabilities, for example, product development or supply chain.

An **Accountability Level** characterizes the scope and intent of activity and decision-making. The three levels used are Directing, Controlling and Executing.

- **Directing** is about strategy, overall direction and policy.
- **Controlling** is about monitoring, managing exceptions and tactical decision making
- **Executing** is about doing the work

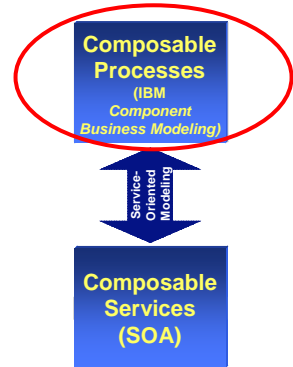


	Business Administration	Product Management	Customer Acquisition	Customer Portfolio Management	Customer Service and Sales	Product Operations	Customer Accounting	Financial Management
Direct	Business Planning	Sector Marketing Plans	Acquisition Planning	Customer Portfolio and Analysis	Customer Sales Planning	Product Operations Management	Customer Accounting Policies	Risk Management
	Business Architecture	Managing Products	Acquisition Oversight	Credit and Risk Management	Customer Servicing Planning			
Control	BU Administration	Product Development and Deployment	Customer Target Lists	Application Processing	Service/Sales Administration	Operations Administration	Reconciliations	Financial Control
	Manage Alliances			Customer Behavior Decisioning				Asset Securitization
	HR Management							
Execute	Legal	Marketing	Campaign Execution	Customer Profile	Sales	Product Processing	Billings	Treasury
	Audit	Market Research		Contact/Event History	Servicing	Rewards Program Management	Payments	Financial Consolidation
	Facilities			Correspondence	Credit Check	Product Inventory Management	Customer Acct	Collections and Recovery
	Dev & Op Systems	Product Directory			Cross Selling		Merchant Operations	
	Accounting & G/L							

Example component business model for the credit card industry

# CBM can be very helpful in framing client issues

## Example 2: sourcing



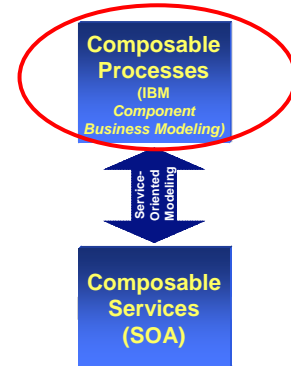
### Example component business model for the credit card industry

	Business Administration	Product Management	Customer Acquisition	Customer Portfolio Management	Customer Service and Sales	Product Operations	Customer Accounting	Financial Management
Direct	Business Planning	Sector Marketing Plans	Acquisition Planning	Customer Portfolio and Analysis	Customer Sales Planning	Product Operations Management	BTO	Risk Management
	Business Architecture	Managing Products	Acquisition Oversight	Credit and Risk Management	Customer Servicing Planning			
Control	BU Administration	Product Development and Deployment		Application Processing	Service/Sales Administration	Operations Administration	Reconciliations	Financial Control
	Manage Alliances			Customer Behavior Decisioning				Asset Securitization
Execute	Legal		Campaign Execution	Customer Profile	Sales	Product Processing	BTO	Treasury
	Audit			Contact/Event History	Utility	Rewards Program Management	Utility	Financial Consolidation
	Facilities			Correspondence	Utility	Product Inventory Management	Customer Acct	Collections and Recovery
	Dev & Op Systems				Cross Selling		Merchant Operations	
	Accounting & G/L	Product Directory						

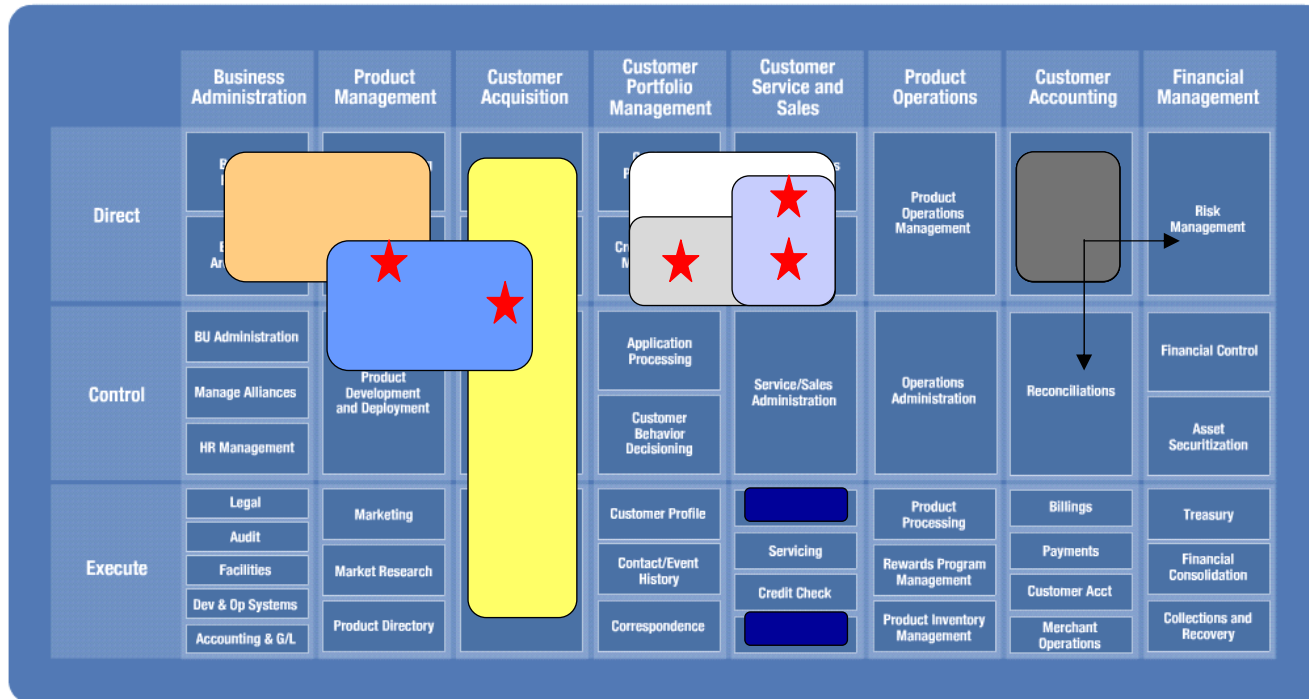
1. We can highlight non-differentiated capabilities that present potential opportunities for alternate sourcing strategies
2. We can identify candidates for Business Transformation Outsourcing
3. We can identify candidates where there are Utility offerings
4. We can identify partners with better capabilities

# CBM can be very helpful in framing client issues

## Example 3: technology



Example component business model for the credit card industry



1. We can map existing applications infrastructure onto the business map
2. We can identify where there are systems *duplications*
3. We can highlight where there are *gaps*
4. We can highlight where systems have been *overextended*

# Agenda

- **Bridging Business-IT Gap**
  - **Component Business Modeling**
  - **SOA**
- **Service Oriented Modeling and Architecture Overview**
  - **Overview**
  - **Example**
- **Q/A**

**Composable Processes**  
(IBM  
Component  
Business Modeling)

Service-  
Oriented  
Modelling

**Composable Services (SOA)**



# What is Service-Oriented Architecture?

*“SOA in context ...”*

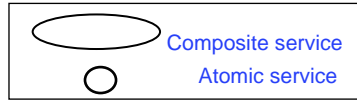
Business

Architecture

Implementation

SOMA focus

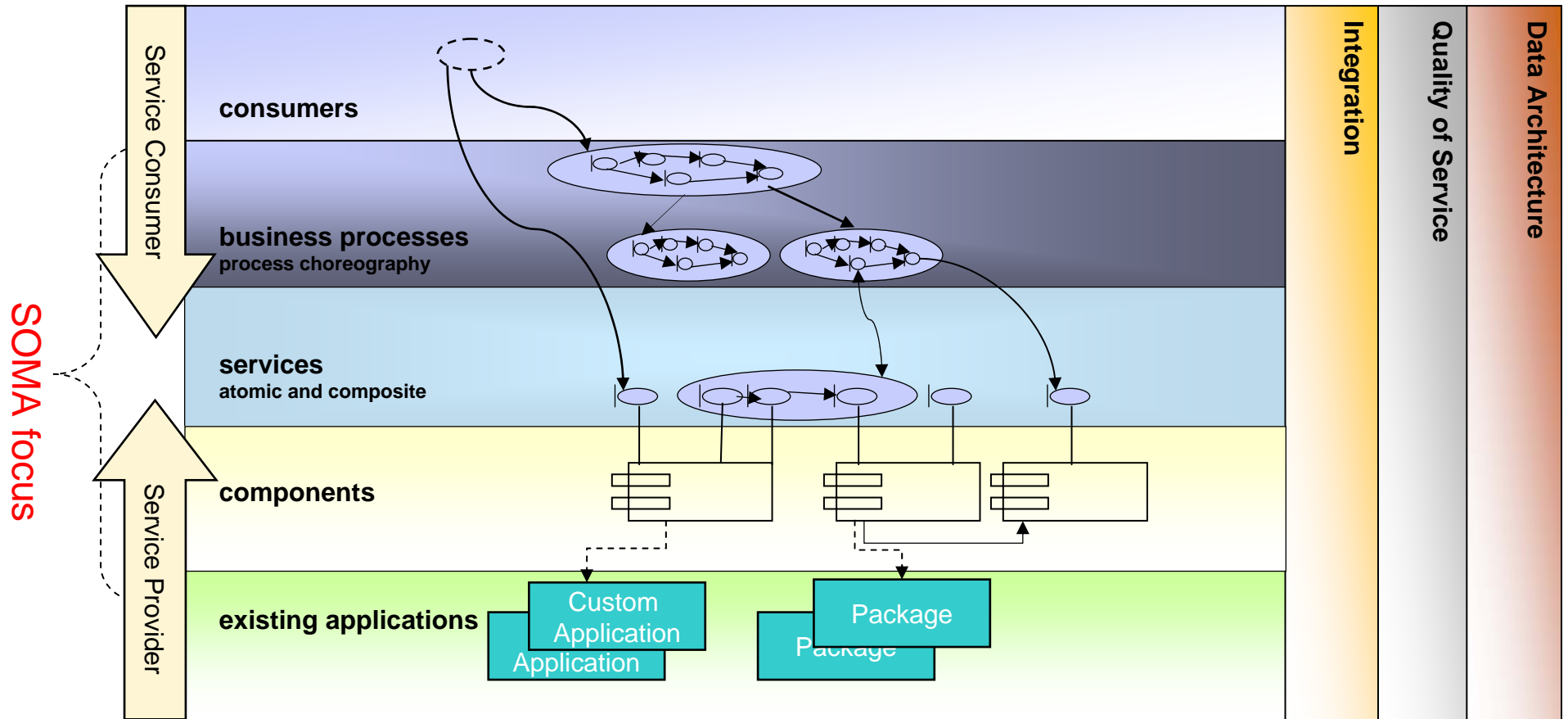
# An SOA is composed of multiple layers that decouple the provider and consumer views



**Composable Processes**  
(IBM Component Business Modeling)



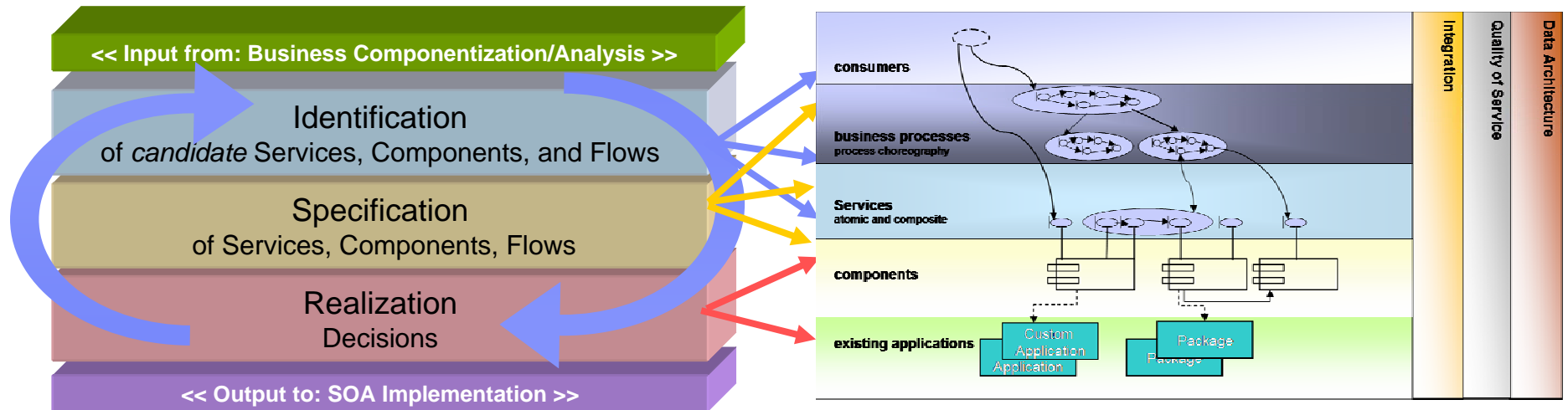
**Composable Services (SOA)**



## Agenda

- ***Bridging Business-IT Gap***
  - ***Component Business Modeling***
  - ***SOA***
- ***Service Oriented Modeling and Architecture***
  - ***Overview***
  - ***Example***
- ***Q/A***

At the heart of SOMA is the identification and specification of processes (flows), services, and components that will realize them



### ***SOMA activities are grouped into three major steps***

- ***SOMA Identification*** discovers candidate services, enterprise components and flows
- ***SOMA Specification*** makes service exposure decisions, and specifies the services and enterprise components to realize them
- ***SOMA Realization*** captures realization decisions

## Agenda

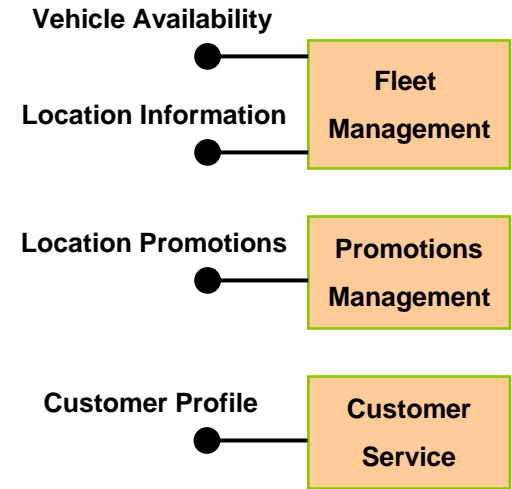
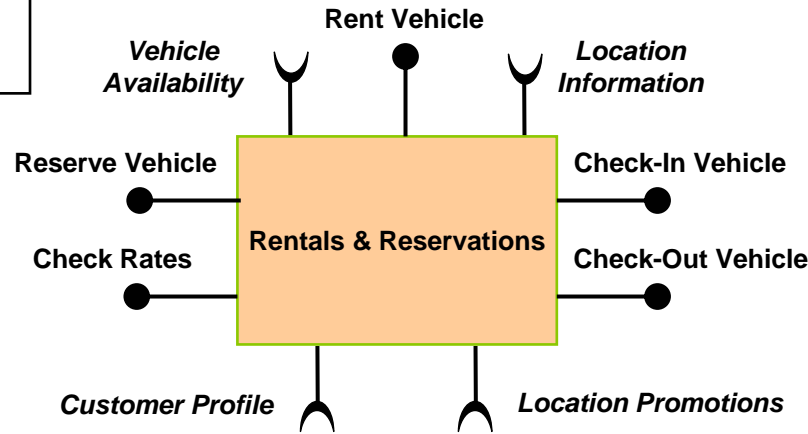
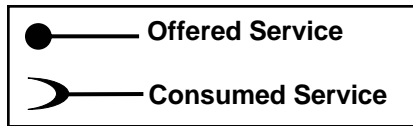
- ***Bridging Business-IT Gap***
  - *Component Business Modeling*
  - *SOA*
  
- ***Service Oriented Modeling and Architecture***
  - *Overview*
  - *Example*
  
- ***Q/A***

# Rent-a-car “hot” components

	Marketing & Customer Mgt.	Products	Rentals management	Rental Fleet Logistics	Business Administration
Direct	Customer Segmentation	Rental Product Strategy	Location & Channel Strategy	Fleet Strategy	Corporate / LOB Strategy
	Customer Relationship Strategy	Product Development / Design	Location Design & Layout	Fleet Planning	Financial Management & Planning
	Marketing Strategy & Planning		Channel Design & Layout	OEM Relationship Planning	Real Estate Planning
Control	Customer Behavior Modeling	Promotions Management	Channel & Location Profitability	OEM Performance Management	Alliance Management
	Market & Competitor Research		Location Operations Management	In-bound Logistics	Business Performance Reporting
	Segmentation Management	Pricing Management	Reservations Management		Legal & Regulatory Compliance
	Call Center	Workforce Management	Real Estate & Construction Management		Risk Management
	Campaign Management			Stock Ledger	
Execute	Customer Service	Purchasing / Sourcing	Rentals & Reservations	Location Operations	HR Administration / Payroll
	Preferred Member Mgmt	Demand Forecasting	Time & Attendance	Fleet Servicing	Corporate Audit
	Customer Communications	IT Systems & Operations		Fleet Management	Corporate Accounting (GL, AP, A/R, Treasury, etc.)
	Mass Marketing & Advertising		Indirect Procurement		
	Target Marketing		PR & Investor Relations		

EXAMPLE  
For illustration only

# Rent-a-car Rentals and Reservations “hot” component with collaborating components, component descriptions and business process



Rentals & Reservations	<i>Execute level Biz component</i> ; Provides business services related to vehicle rental reservations; Provides support for both the reservations and rentals business processes
Customer Service	<i>Execute level Biz component</i> ; Responsible for servicing the customer; Offers, among other things, services relating to maintenance of customer profile
Promotions Management	<i>Control level Biz component</i> ; Responsible for the management of promotions across the board
Fleet Management	<i>Execute level Biz component</i> ; Responsible for providing services around Fleet management, Fleet availability, etc

## Rent Vehicle Business Process



EXAMPLE  
For illustration only

## *Rent-a-car* Goals and Key Performance Indicators (KPIs)

Goal	KPI
Increase the speed and agility in delivering new business services	Time to deliver a new business service = 2 wks
Streamline processes to reduce operating costs	Operating cost reduction from July 2004 levels = Reduce by 20% after deployment of services platform
Increase Revenue by 20% by the end of FY2005	Revenue increase in FY2005 over FY2004 = 20%

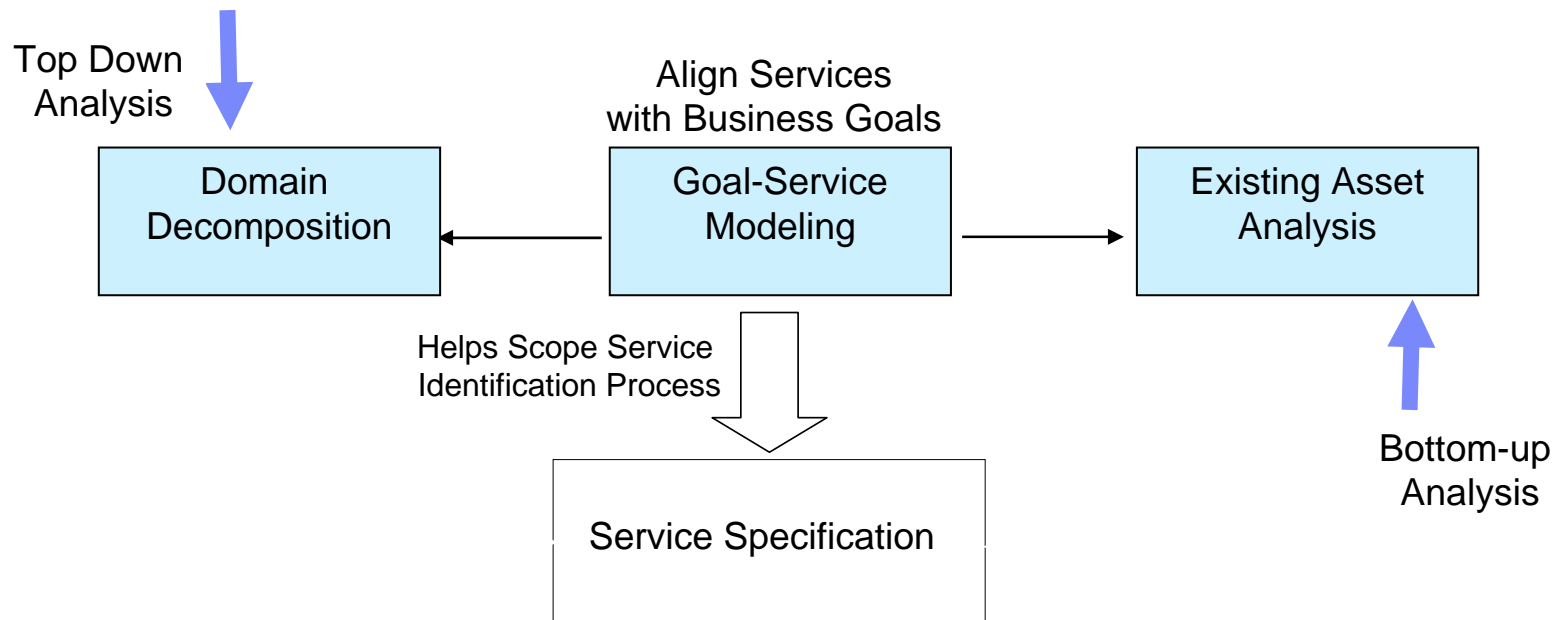
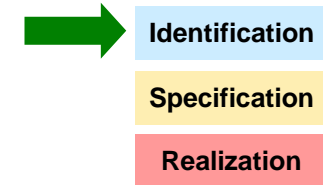
EXAMPLE  
For illustration only

**Goal:** Business aspiration, usually high-level

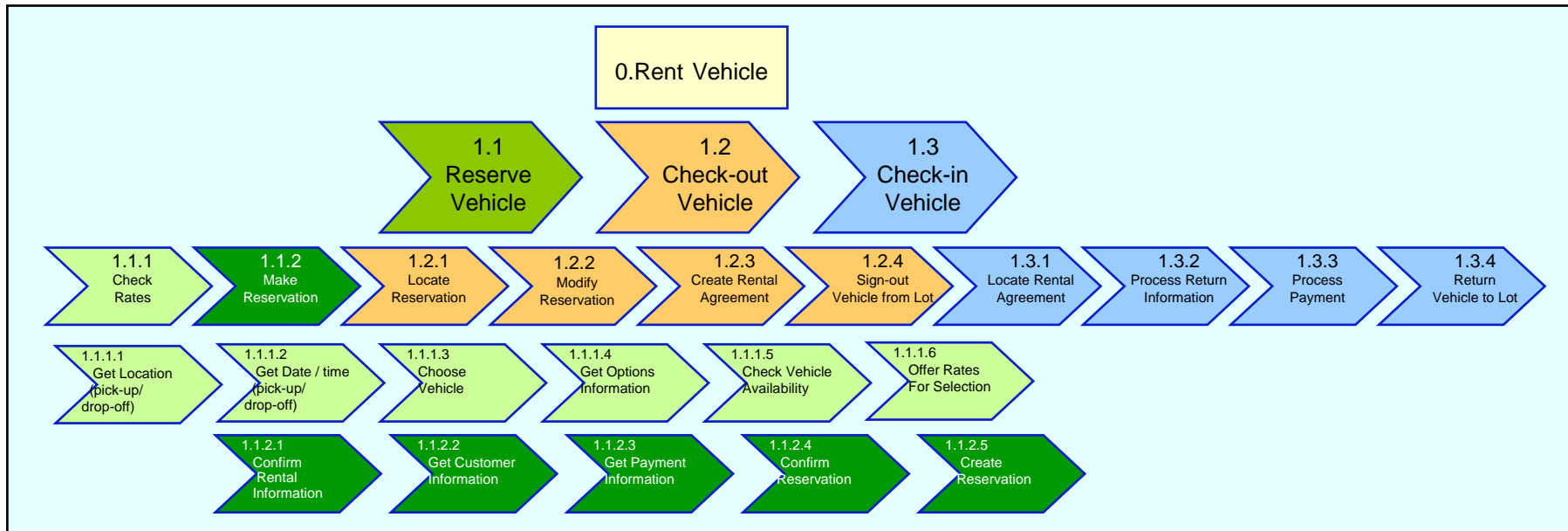
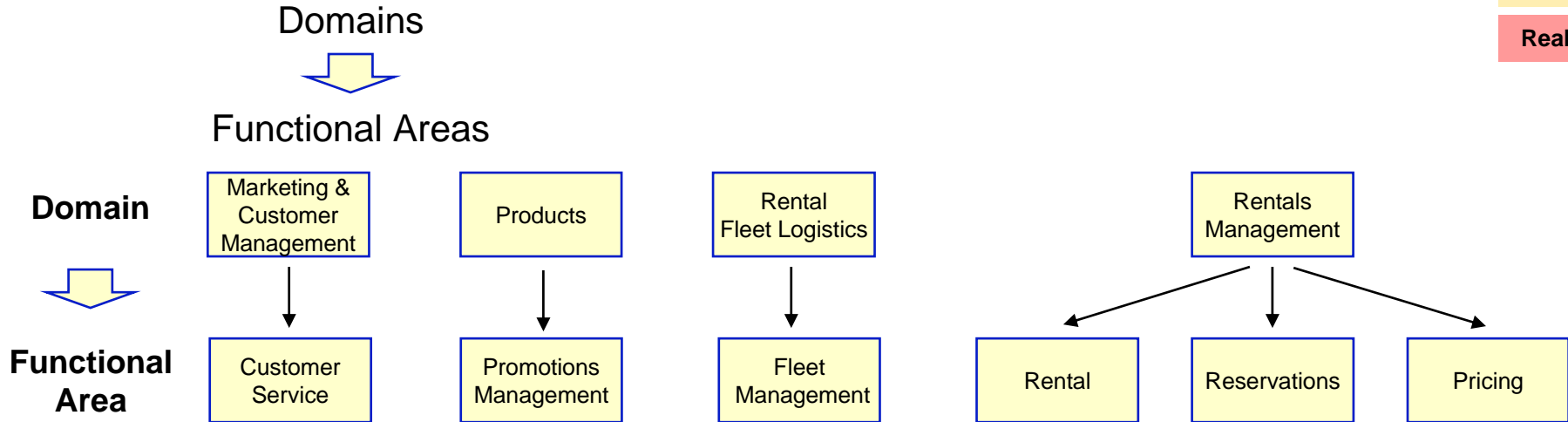
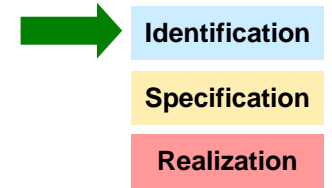
**KPI:** Measurable Objectives

## SOMA identifies services through three complementary techniques

- Domain Decomposition (Top Down Analysis)
- Existing Asset Analysis (Bottom-up Analysis)
- Goal-Service Modeling

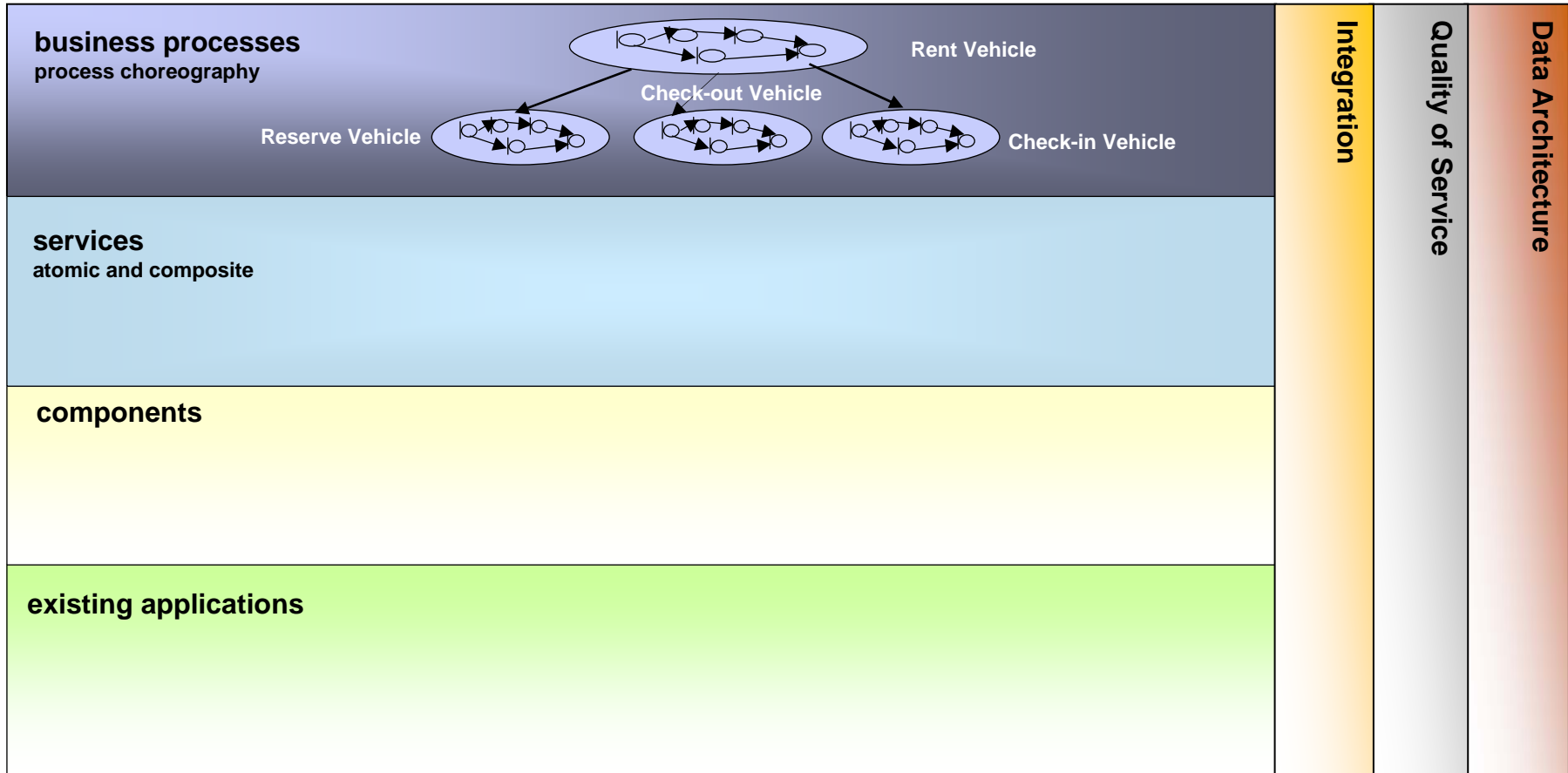
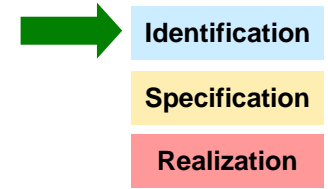


# Rent-a-car Domain Decomposition Analysis



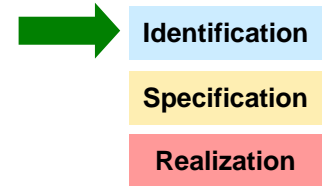
EXAMPLE  
For illustration only

# Rent-a-car Top-Down service identification



**EXAMPLE**  
 For illustration only

## *Rent-a-car* Goals, sub-goals as recorded in the Goal-Service Model, and services identified for sub-goals

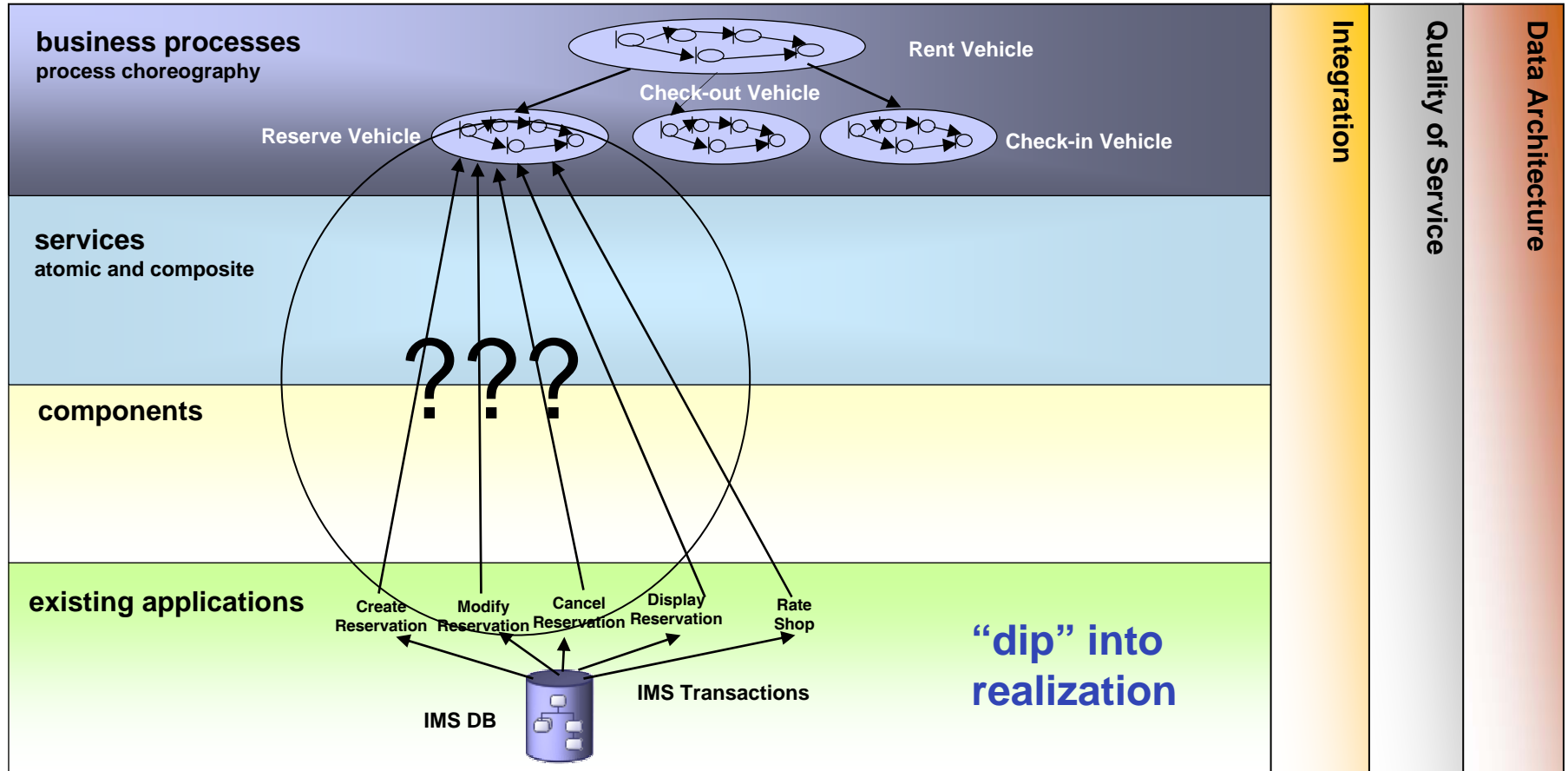
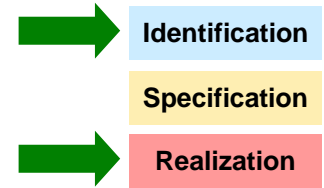


### Goal-Service Model

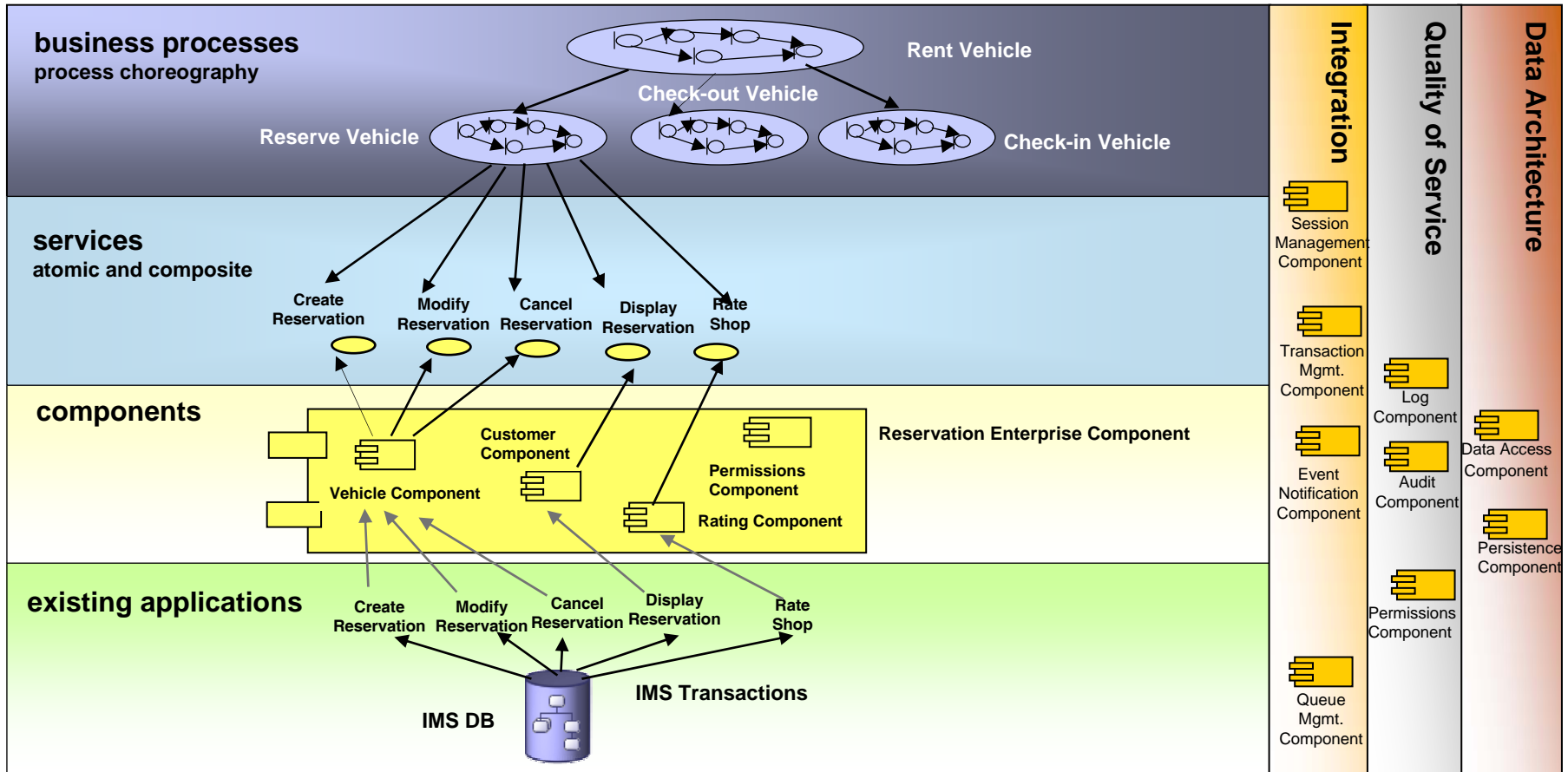
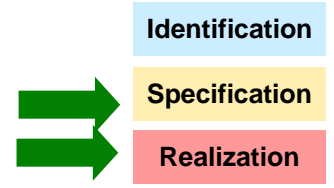
- Increase Revenue by 20% by the end of FY2005
  - Introduce New Products
  - Introduce New Channels
  - Increase Revenue per transaction
    - Up-sell higher class vehicle
      - *Understand Customer Profile*
      - *Determine types of Up-sell vehicles*
      - **Check vehicle availability**
    - Cross-sell additional options
      - *Purchase options individually*
      - *Purchase option packages*
    - Cross-sell Partner services
      - *Reserve Hotel rooms*
      - *Reserve Airline tickets*
      - *Book destination attractions*
      - *Sell Navigation equipment post-rental*

EXAMPLE  
For illustration only

**Rent-a-car** Existing Asset Analysis examines existing applications to discover functions that may become service realizations



# Rent-a-car Specification and Realization activities complete analysis and design



## Agenda

- ***Bridging Business-IT Gap***
    - ***Component Business Modeling***
    - ***SOA***
  
  - ***Service Oriented Modeling and Architecture***
    - ***Overview***
    - ***Example***
- **Q/A**