SOA

Service Oriented Architecture

MOMENTUM SI

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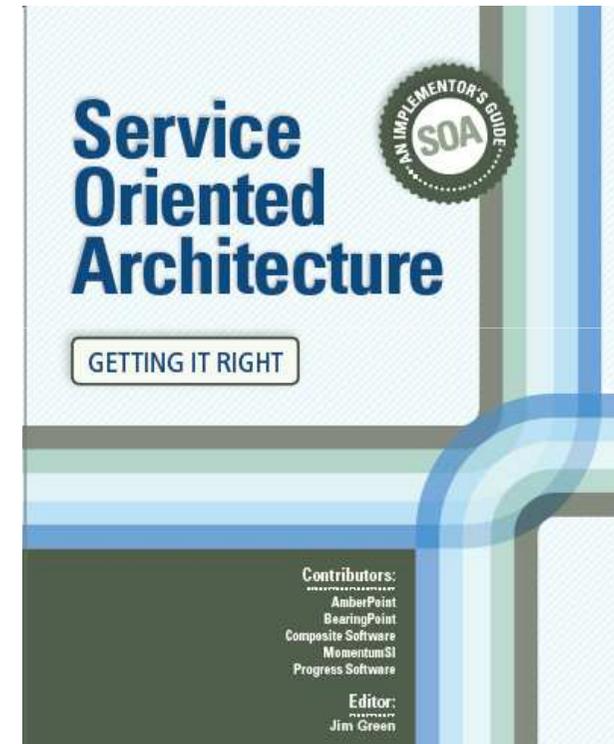We are a boutique **consulting** company focusing on business software solutions.

Areas of expertise:

- Enterprise Architecture & SOA
- Software Development and Integration

Founded. 1997, privately held.
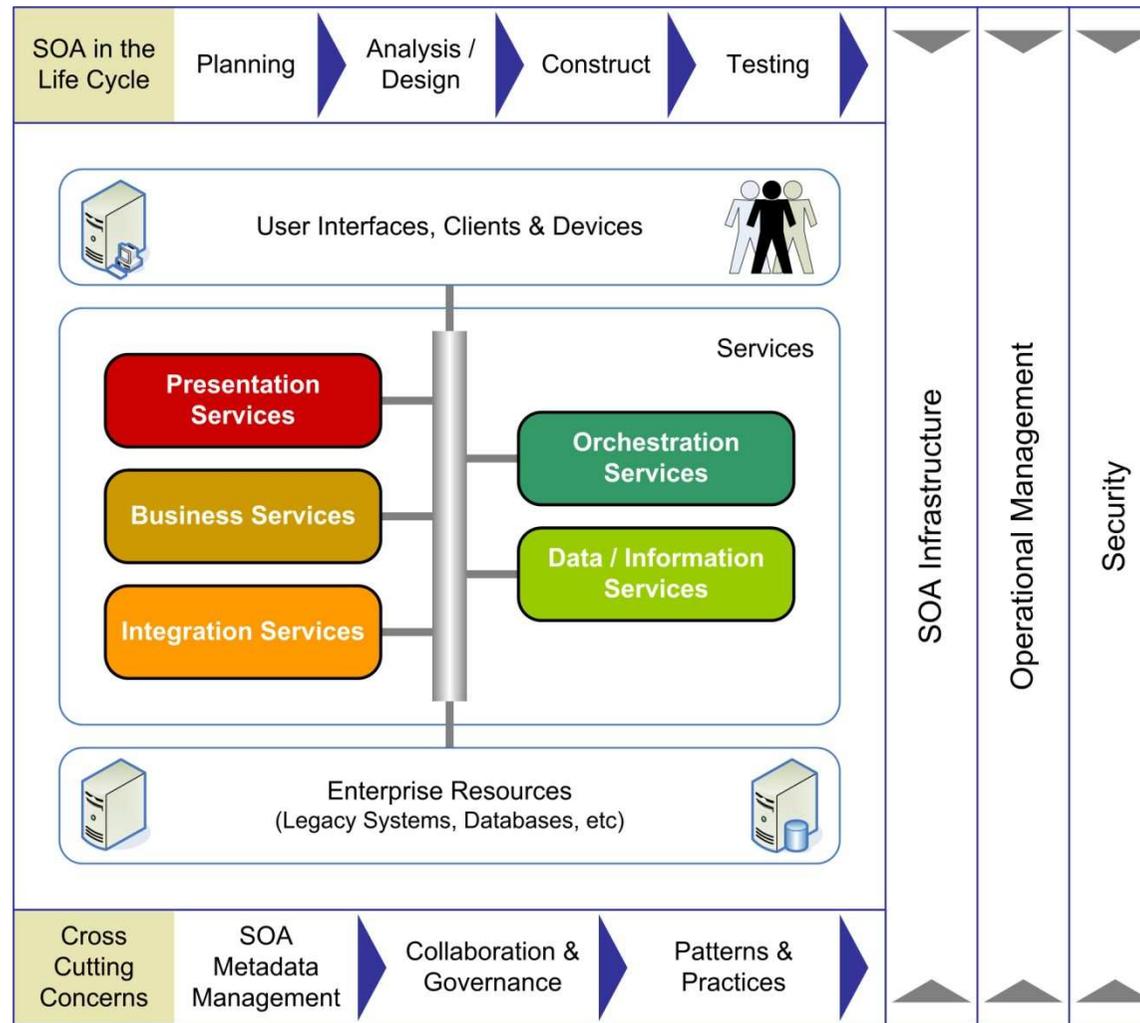
Headquarters. Austin, TX.

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Service Oriented Architecture

AN IMPLEMENTOR'S GUIDE — SOA

GETTING IT RIGHT

Contributors:
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Can you tell me where you're at with your SOA efforts?

Reference Architecture Defined...

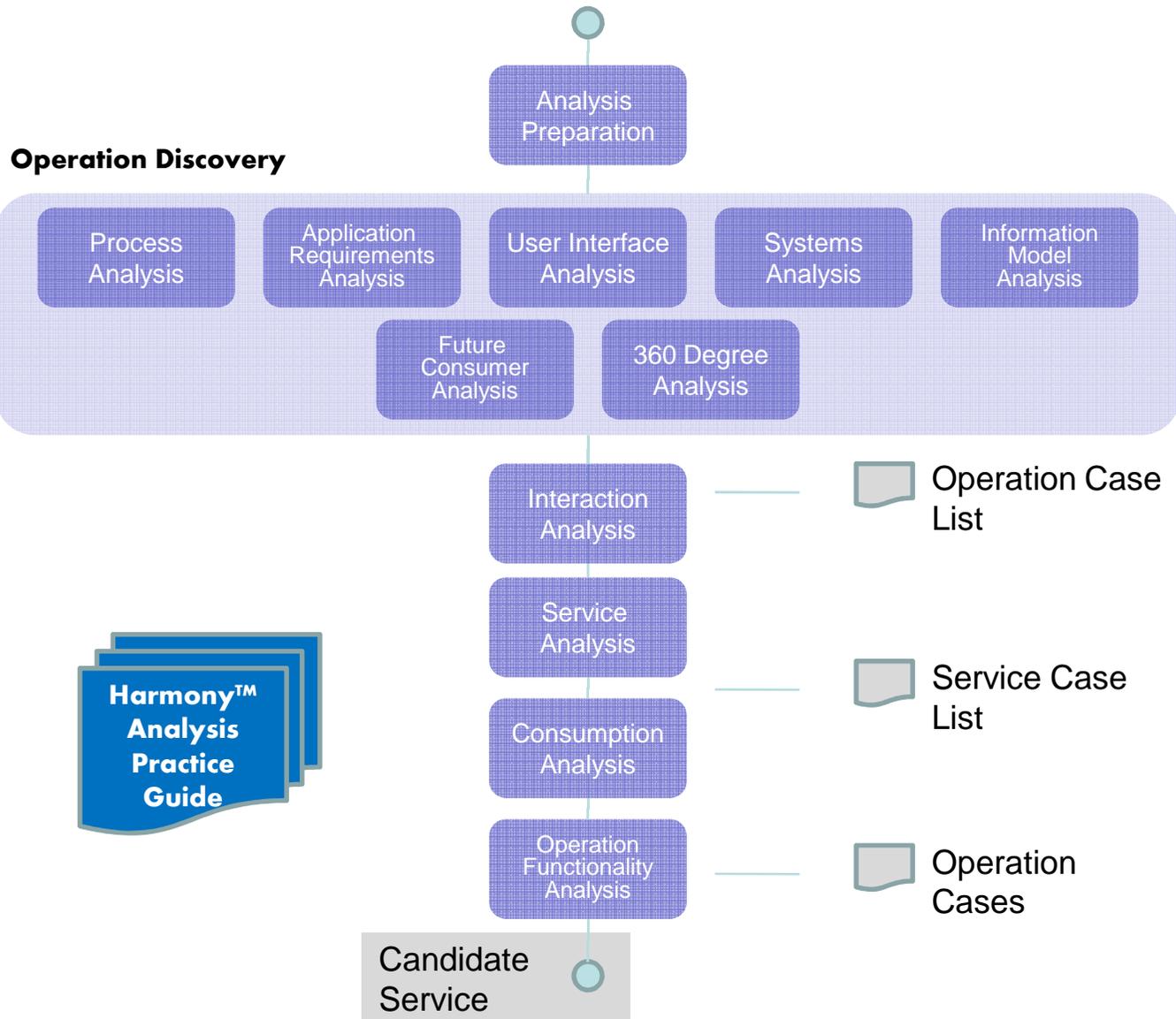# Infrastructure Support...

Service Lifecycle Defined…

You're not using an "object oriented" lifecycle in a service oriented world!

New Processes Defined...

Analysis Preparation

Operation Discovery

Process Analysis

Application Requirements Analysis

User Interface Analysis

Systems Analysis

Information Model Analysis

Future Consumer Analysis

360 Degree Analysis

Interaction Analysis — Operation Case List

Service Analysis — Service Case List

Consumption Analysis

Operation Functionality Analysis — Operation Cases

Harmony™ Analysis Practice Guide

Candidate Service

Best Practices in Place...

Practices have been identified AND people are trained!

Service Portfolio Management Guide

Service Analysis Guide

Service Architecture Guide

Service Design Guide

Service Construction Guide

Service Testing Guide

Service Deployment Guide

Service Provisioning Guide

Service Operations Guide
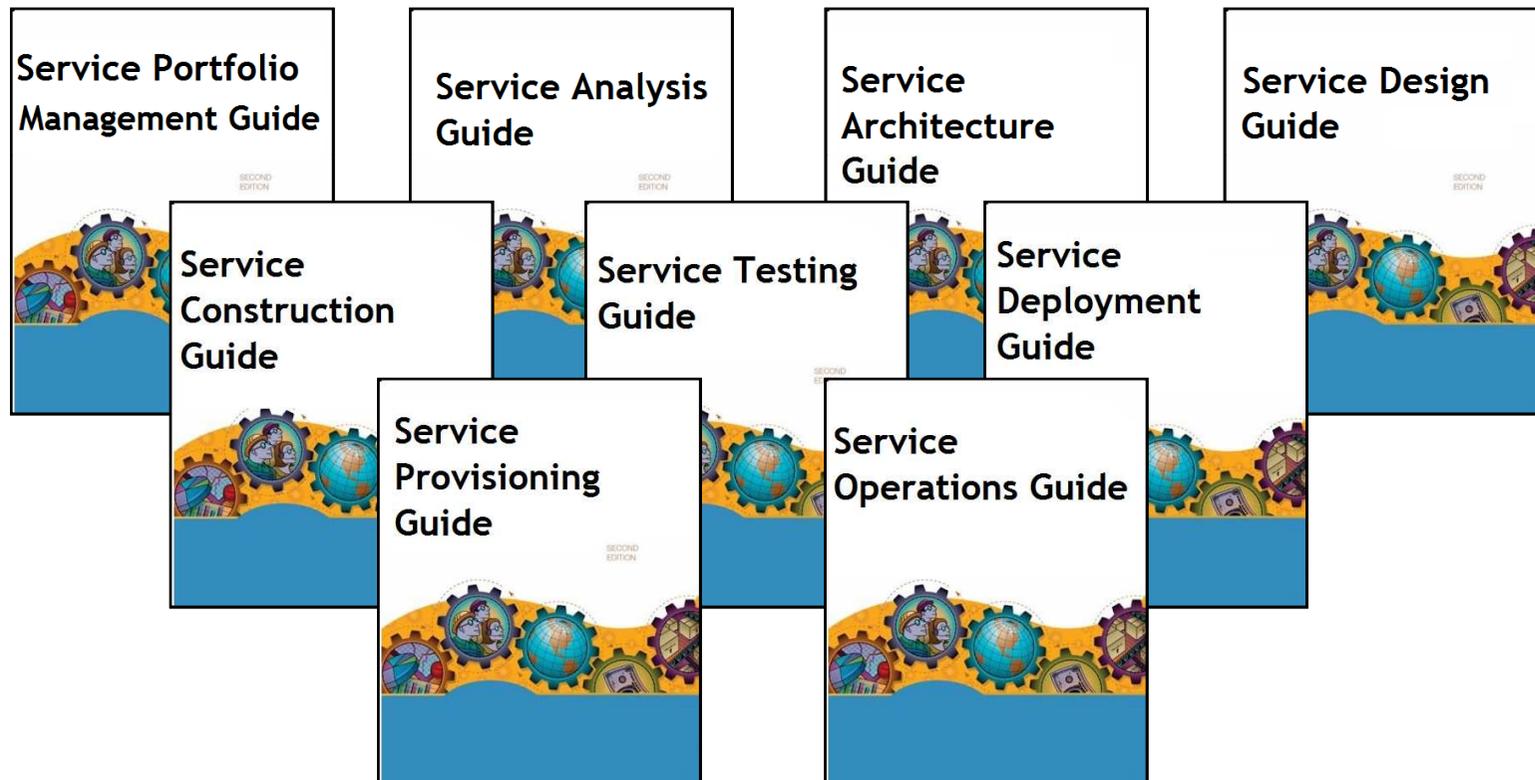
The project pipeline is reviewed for service candidates.

Projects

Governance Institution

Common Functionality?

Common Non-Functional Requirements?

2nd Sponsor?

Cost of making reusable vs. latent cost of not making reusable

Core And Common
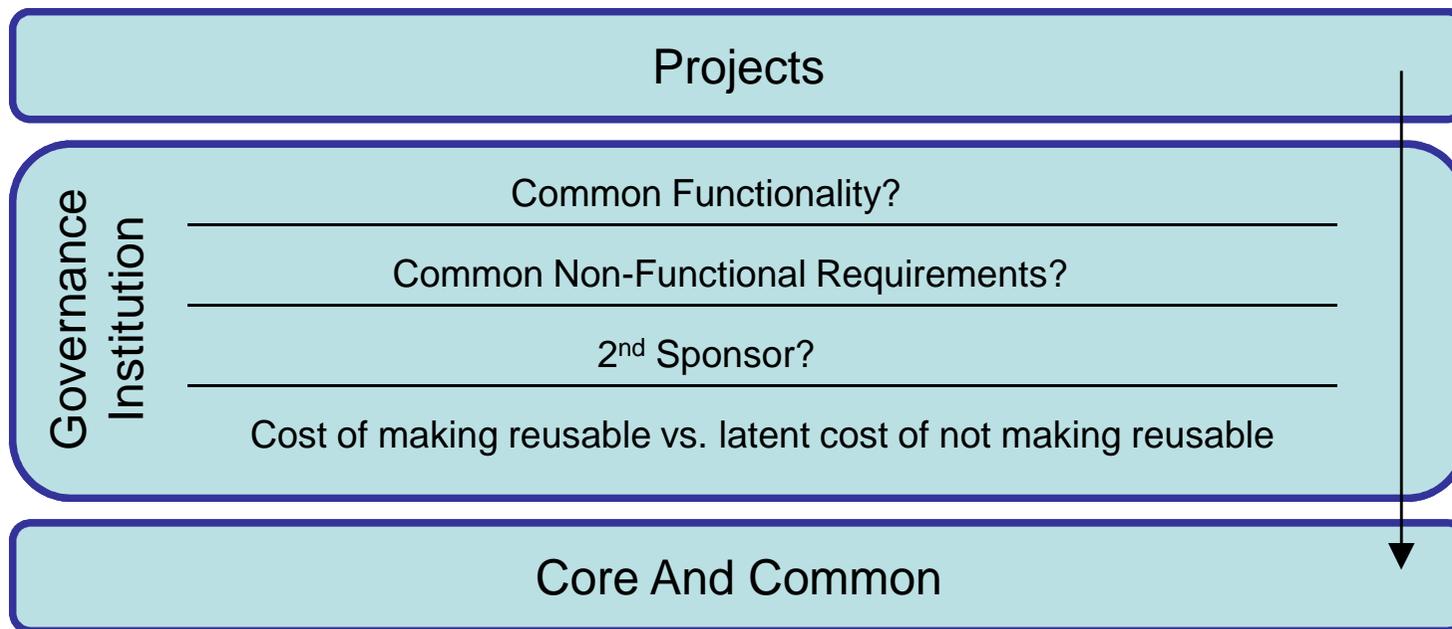
Governance provides a framework to overcome conflicting desires.

Projects

Governance Institution

Core And Common

- Support / Ownership Model Defined
- Functionality & Non-Functionally Abstracted
- Asset brought up to Code (standards, etc.)
- Subsidized operating model
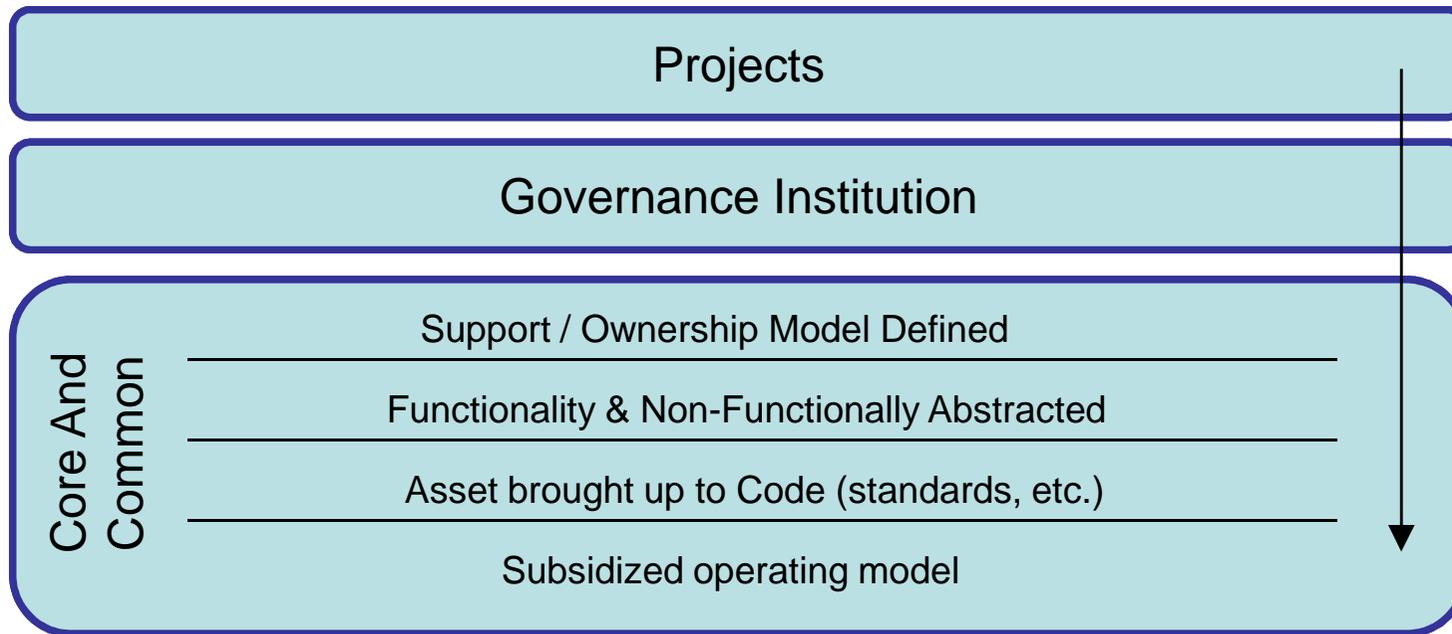
How many services do you currently have?

"Uh… about 50."

How many clients or consumers do you have?

"Uh... about 125"

My Fourth Question

What are the Services you are going to do?

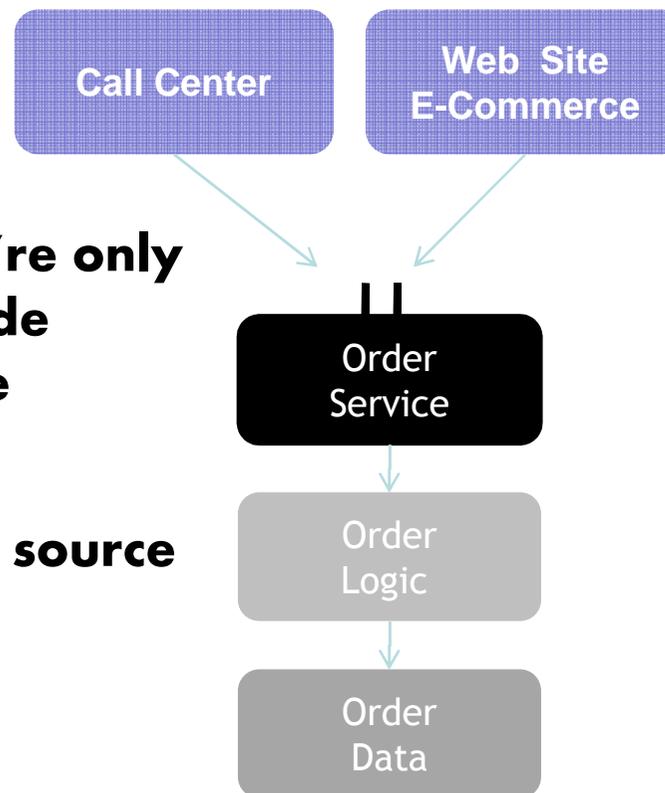*"I'm not sure what you mean…"*

Why?

"Reuse."

- **Manageable**
  - **The Service is bigger than an object and smaller than an application**

  - **The Service is the new unit of work (unit of analysis, unit of design, testing, deployment, etc.)**

  - **Don't fall victim to run-away monster applications. Right size the unit.**

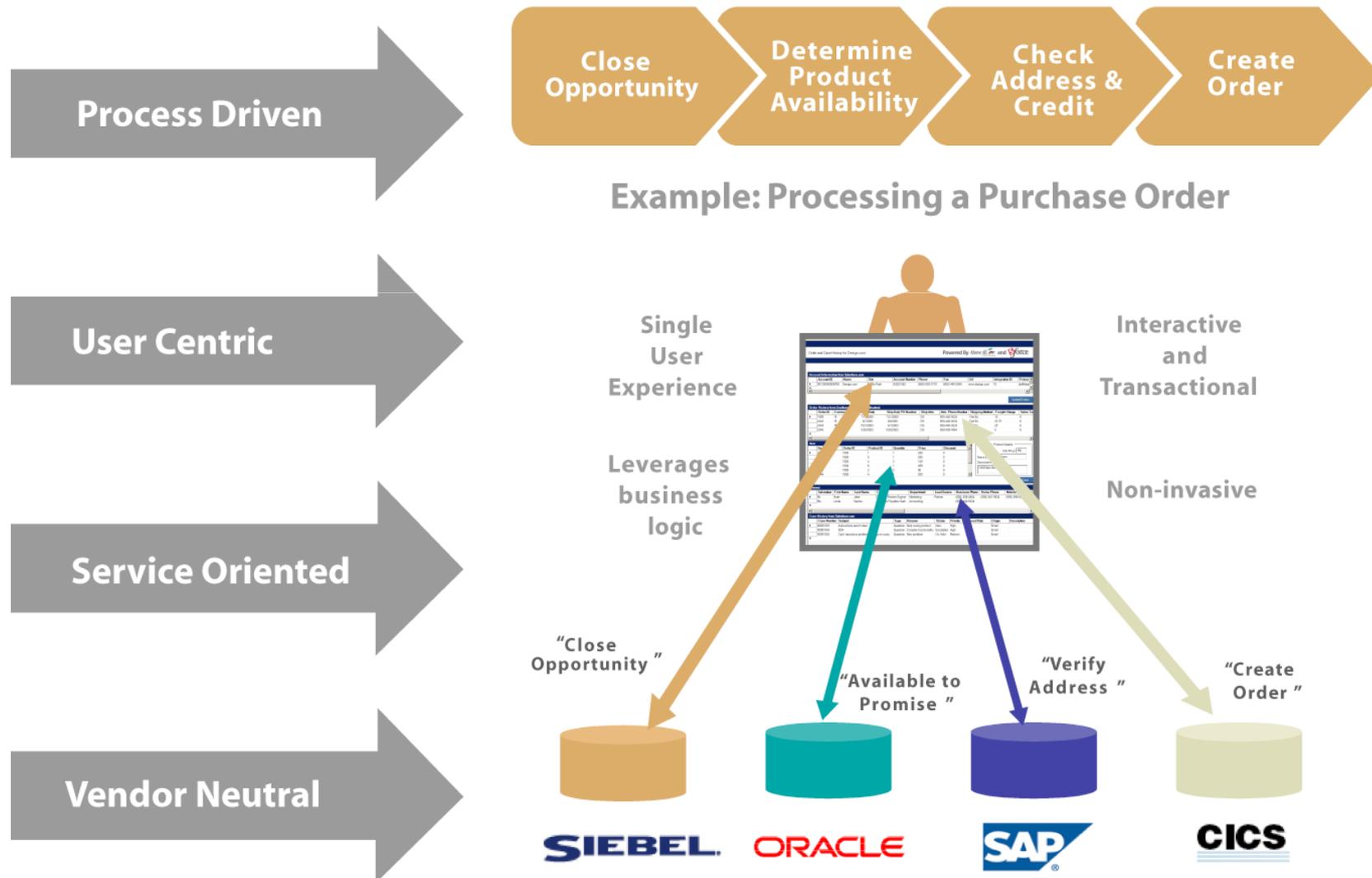**Master Services are the single, enterprise wide version of the truth.**

In this scenario, we're only maintaining one code base, not 3 separate applications.
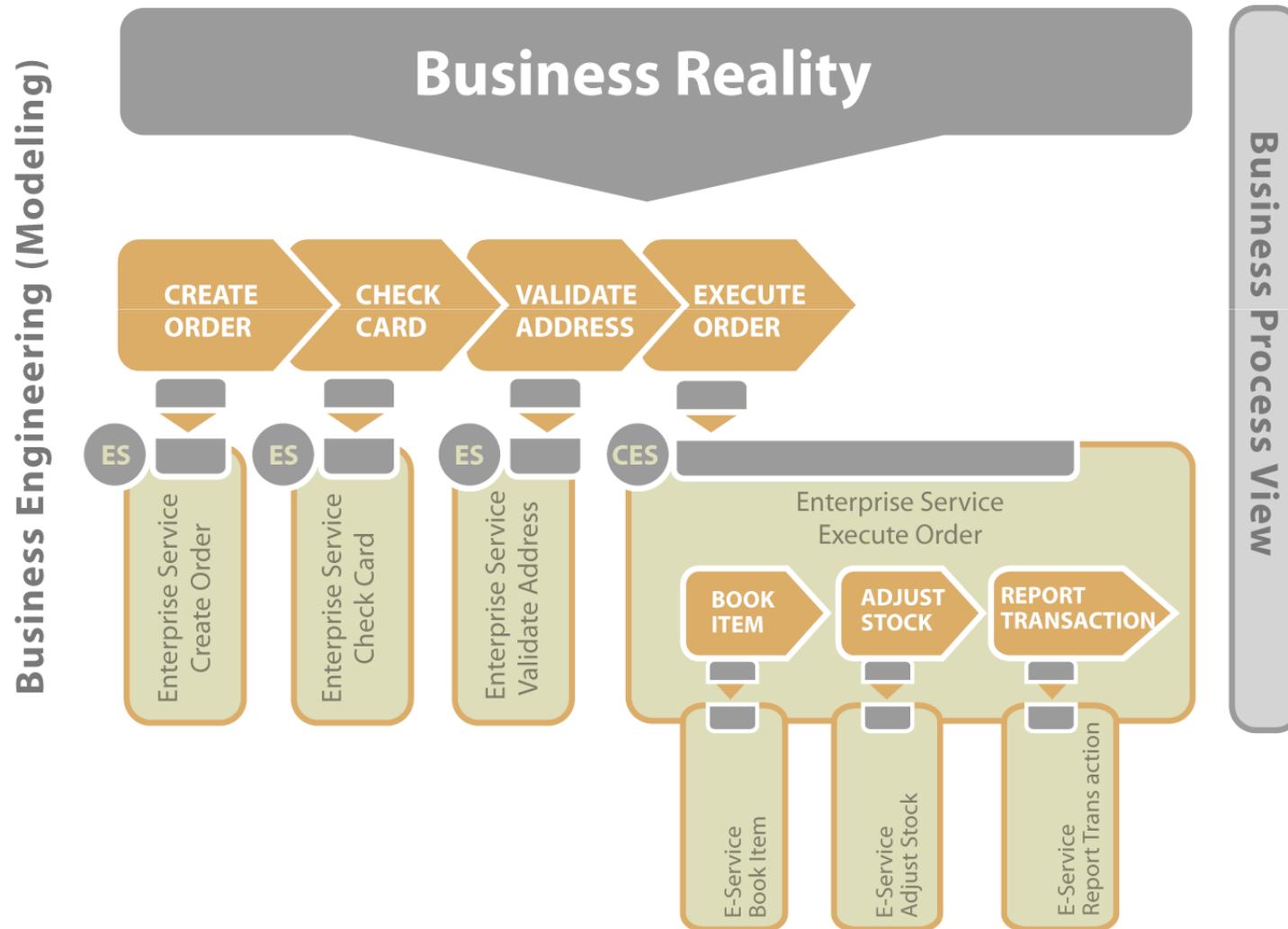
We now have "one source for logic and data".

Call Center

Web Site
E-Commerce

Order
Service

Order
Logic

Order
Data

SOA Opportunity #3

- ## User Centric Systems
  - ### – No more 'silo applications'

Process Driven

Close Opportunity → Determine Product Availability → Check Address & Credit → Create Order

Example: Processing a Purchase Order

User Centric

Single User Experience

Leverages business logic

Interactive and Transactional

Non-invasive

Service Oriented

"Close Opportunity"   "Available to Promise"   "Verify Address"   "Create Order"
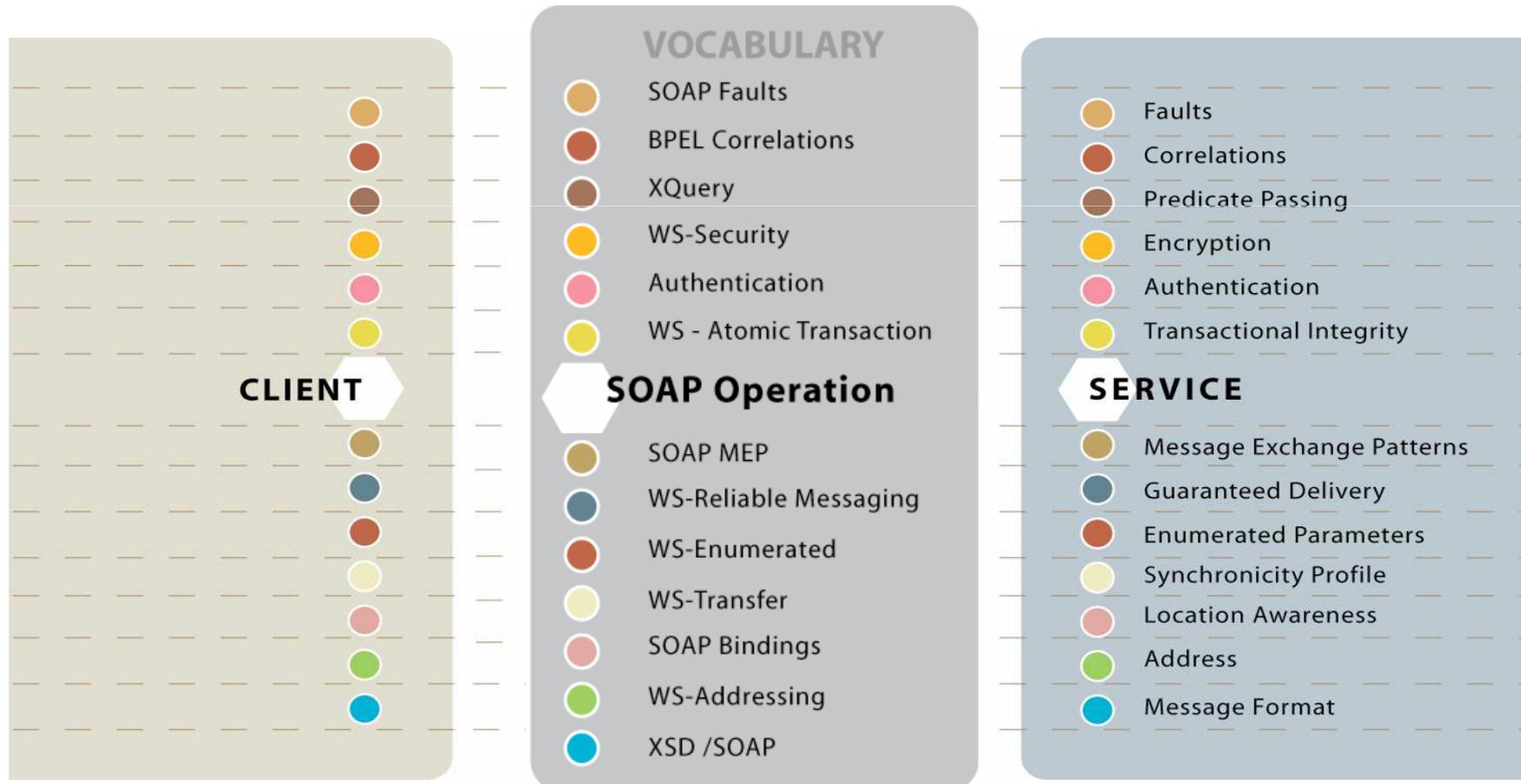
Vendor Neutral

SIEBEL   ORACLE   SAP   CICS

- ## Process Driven
  - ### Process management is key to business improvement

SOA Opportunity #5

- **Interoperability & Integration**
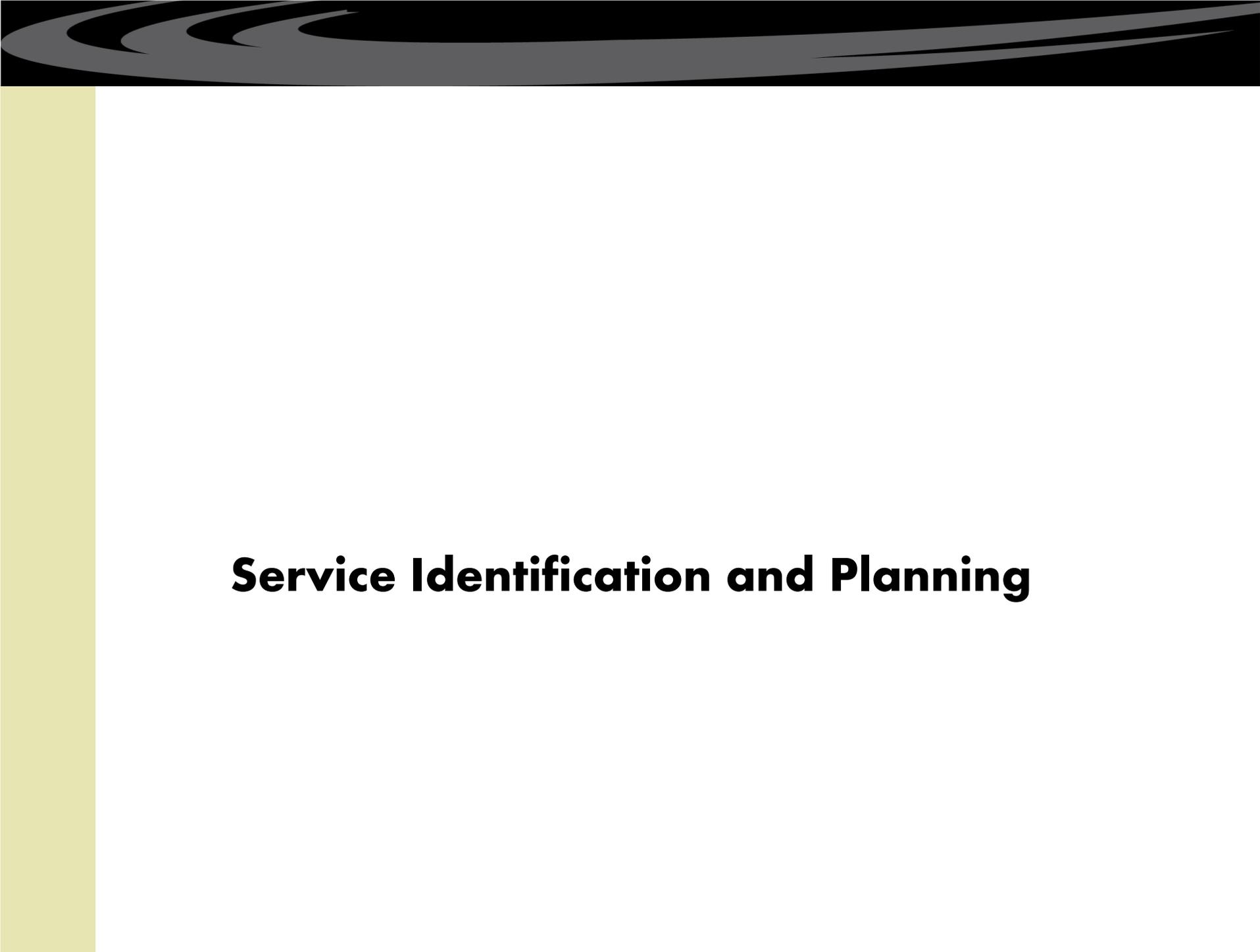 - **Many systems were designed to accommodate the needs of the 'funders' but no one else**

- **Contracts & Service Levels**
  - **Traditional applications often failed to consider 'design to contract' and 'operate to SLA' as first order concerns**

  - **The WSDL is the outsourced contract**
    - **Loosely couple my vendors**

  - **The contract is in the contract**

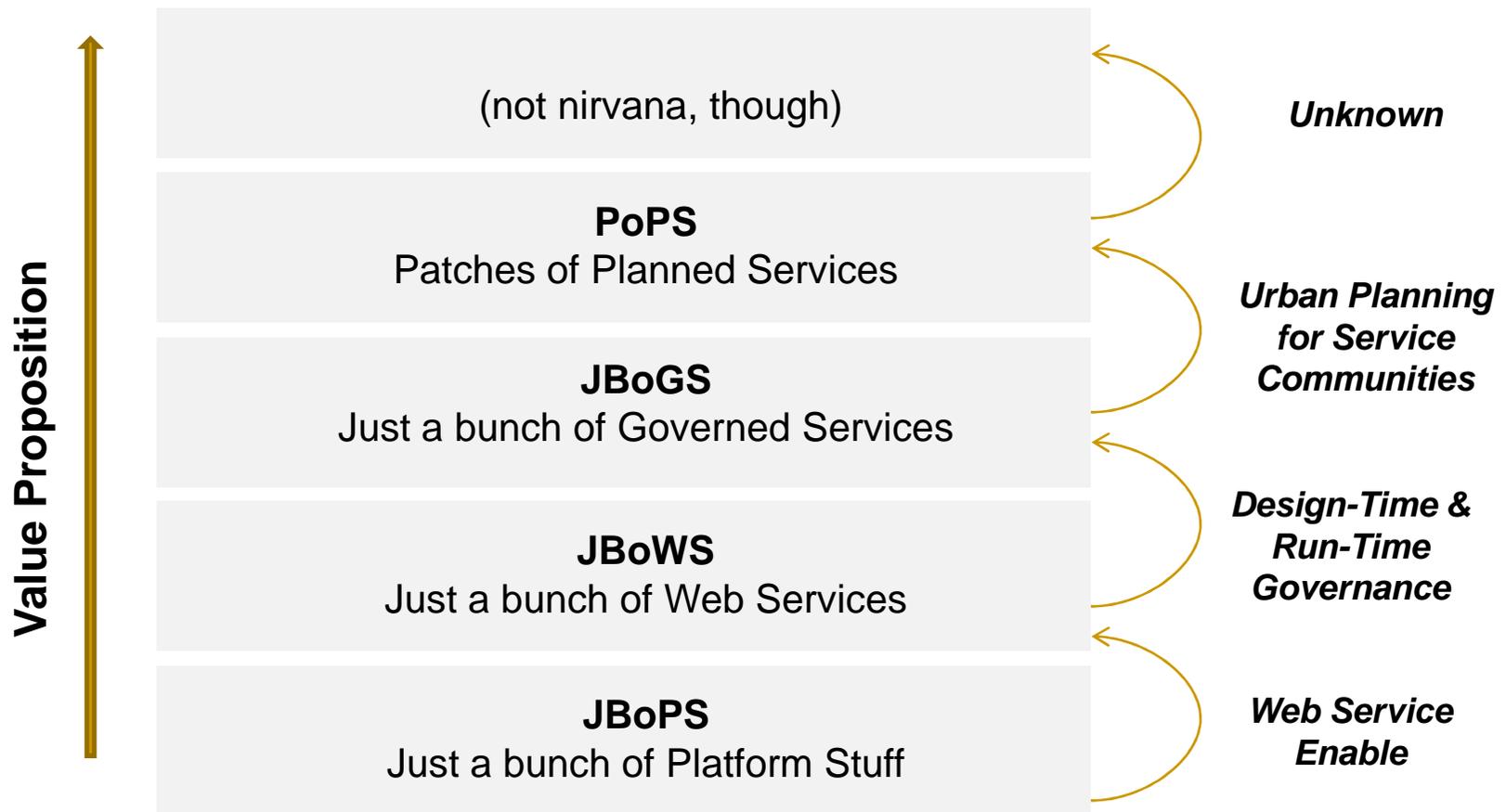 - **Trust is based on past performance (SLA's)**

- **The SaaS & the Extended Enterprise**
  - **A value chain is a series of activities that produce some valuable output and often extend across several businesses and government agencies.**

  - **Applications can now be designed to work directly with those of other organizations. The boundaries of software have extended beyond a single company.**

  - **Organizations must know their role in a value chain and produce and consumer services accordingly.**

Service Identification and Planning

SOA Reality...

Value Proposition →

(not nirvana, though)	*Unknown*
PoPS Patches of Planned Services	
JBoGS Just a bunch of Governed Services	*Urban Planning for Service Communities*
JBoWS Just a bunch of Web Services	*Design-Time & Run-Time Governance*
JBoPS Just a bunch of Platform Stuff	*Web Service Enable*

Planning versus Reacting

- **Planned Services are ones that have been identified prior to the initiating of a specific project that will require them.**

- **Before initiating a project, the domain should be analyzed and certain functions identified as 'conceptual services'.**

- **Further study (called Service Analysis) will determine if a service exists, needs to be modified – or if a new service needs to be created.**

- **Wide-scale planning allows an enterprise to create a road map for their portfolio of services. This enables long term planning for reuse an sharing.**

Identifying the Services

After we divide the enterprise into manageable domains, we have to identify the services in each domain. There are a variety of techniques to identify services including:

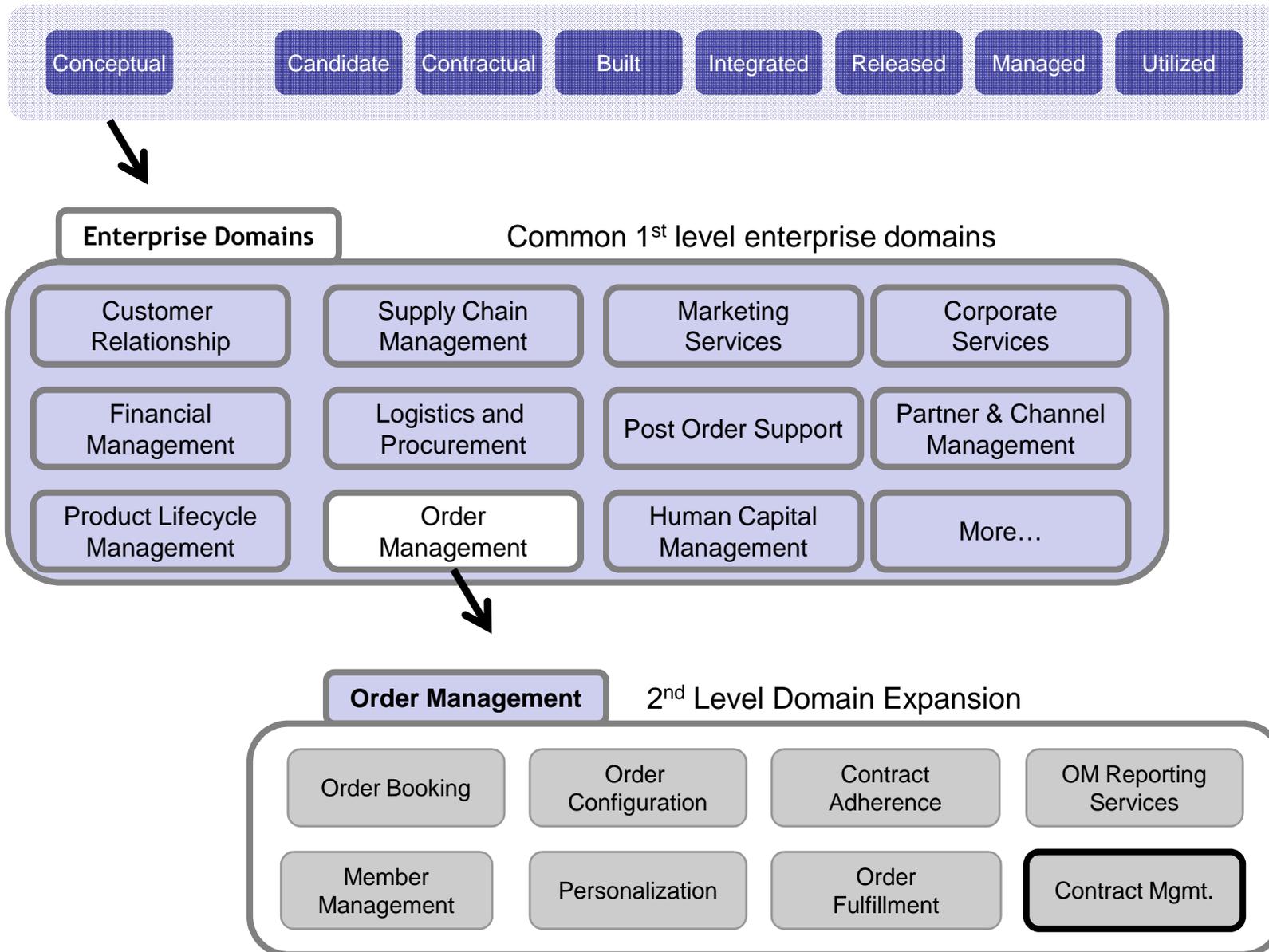| External Needs	Job Functions	Process Analysis	Systems Analysis	Information Model Analysis
How do our customers, distributors, suppliers and service partners do business with us?	Review the organization and the functions that are performed.	What are the core processes that we do?	What systems do we use today?	What kind of data do we currently capture?

Patches of Planned Services

Conceptual		Candidate	Contractual	Built	Integrated	Released	Managed	Utilized

Enterprise Domains   Common 1st level enterprise domains

Customer Relationship	Supply Chain Management	Marketing Services	Corporate Services
Financial Management	Logistics and Procurement	Post Order Support	Partner & Channel Management
Product Lifecycle Management	Order Management	Human Capital Management	More…

Order Management   2nd Level Domain Expansion

Order Booking	Order Configuration	Contract Adherence	OM Reporting Services
Member Management	Personalization	Order Fulfillment	Contract Mgmt.

The Business Case

When new conceptual services are identified, we must review each service to verify that a business case exists.

Maintain Integrity & Avoid Redundancy

What % of development costs decreased?
Avoidance of "patch work" & "spaghetti architecture"?

Faster / Cheaper Integration & Development

How much cheaper to reuse vs. recreate?
To what extent did we decrease integration time/effort?
How much better quality to we expect out of services?

Create a Scalable Governance Model

What is the value of not having an enterprise blueprint?
What is the value of controlling how software is implemented?

Business / Process Alignment

How much time is saved by having I.T. speak business terms?
What is the value in having business process aligned systems?

Sample Business Case

The Service Business Case identifies the current state, future state and the value of making the journey.

Current State

Two redundant applications

No common service / interface

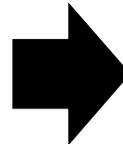Service Support not well defined

Using some enterprise standards

Future State

One master service; 40% less developers

Common interface, 50% less time to use

Service Support according to SLA;

Use global SOA policies

Note that many of the benefits are "soft" and difficult to put a dollar value on. Therefore, many organizations focus on the "hard" numbers (reduced headcount, reduced EAI software, reduced integration time, etc.)

Investing in Services

- Investment View: Various services have different priorities according to the changing business climate

- Service Portfolio Management helps an organization to prioritize the services according to various weighting formulas (ROA, ROI, TCO, etc.)
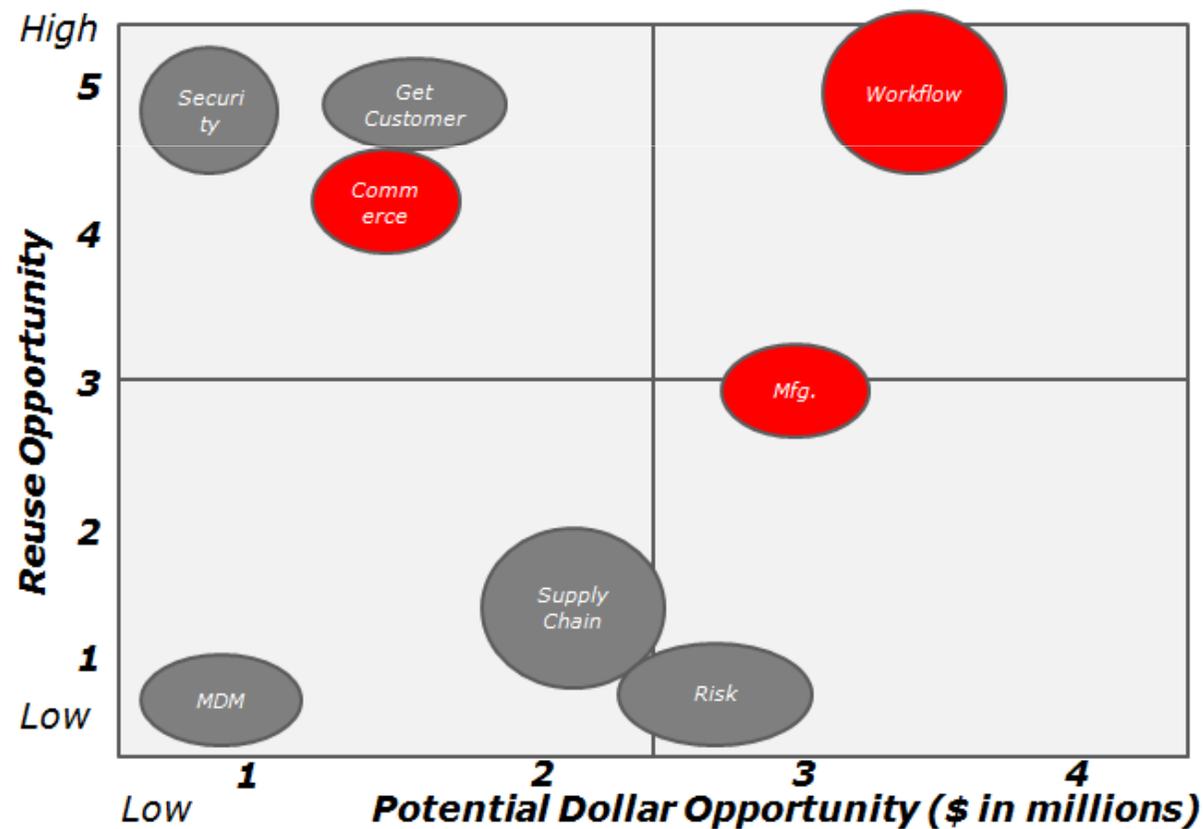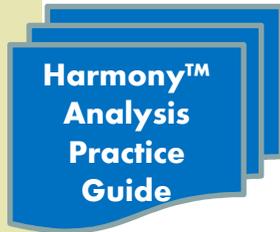
Dependencies

- Dependency View
  - Business Priorities dictate the 'build priority' order, <u>except</u> when they depend on other services to be created first

- The Dependency View enables a SOA Planner to consider dependency chains in services and to plan accordingly

- By understanding dependencies we can invest in "infrastructure services" that are shared across the enterprise.

What's Next?

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Candidate Service

If a service is identified to have a good business case, the initial findings in the Investigation are passed on to a service analyst.

The analyst will perform a more thorough review and document the actual service requirements.
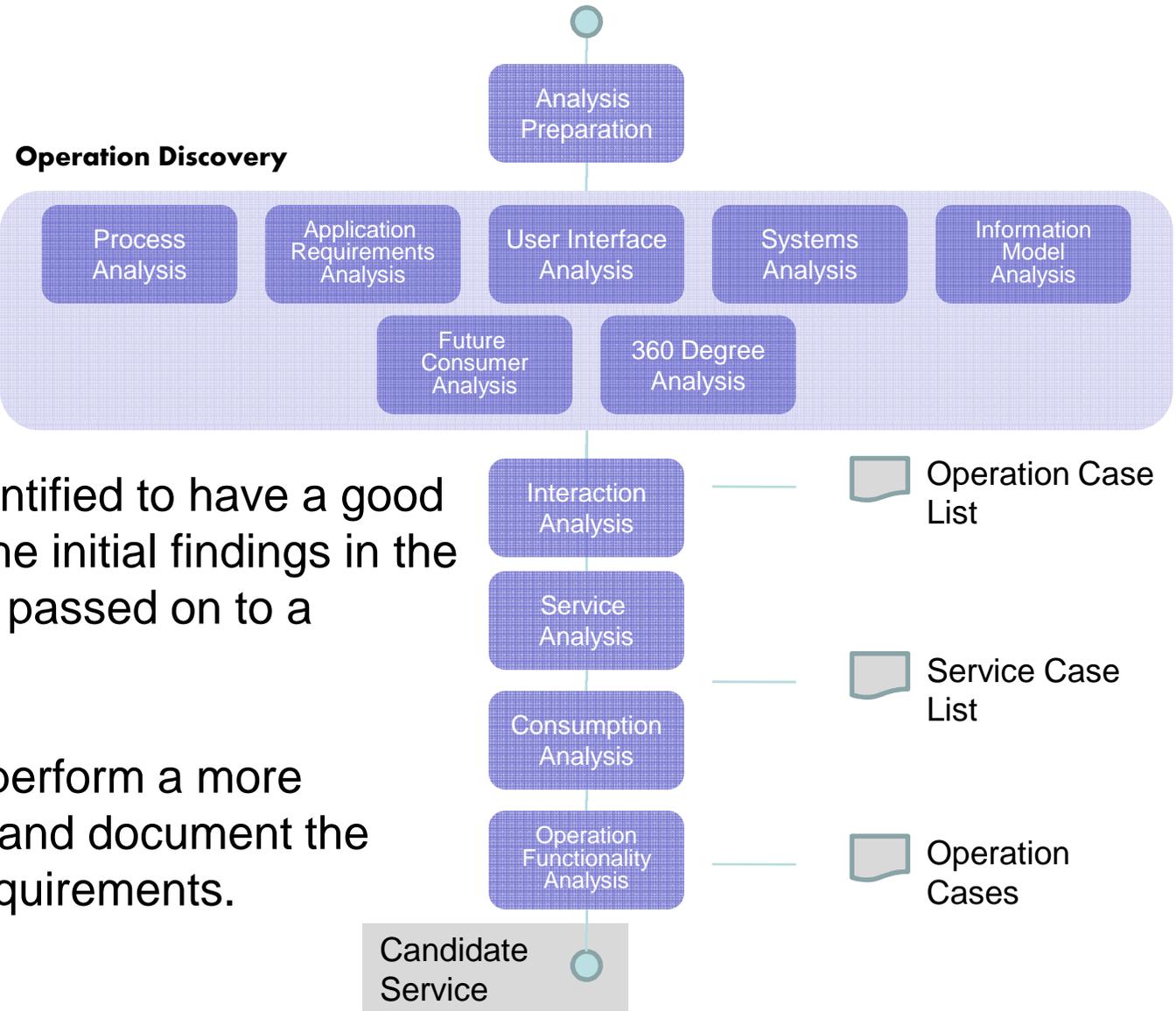
Q & A

What questions do you have?