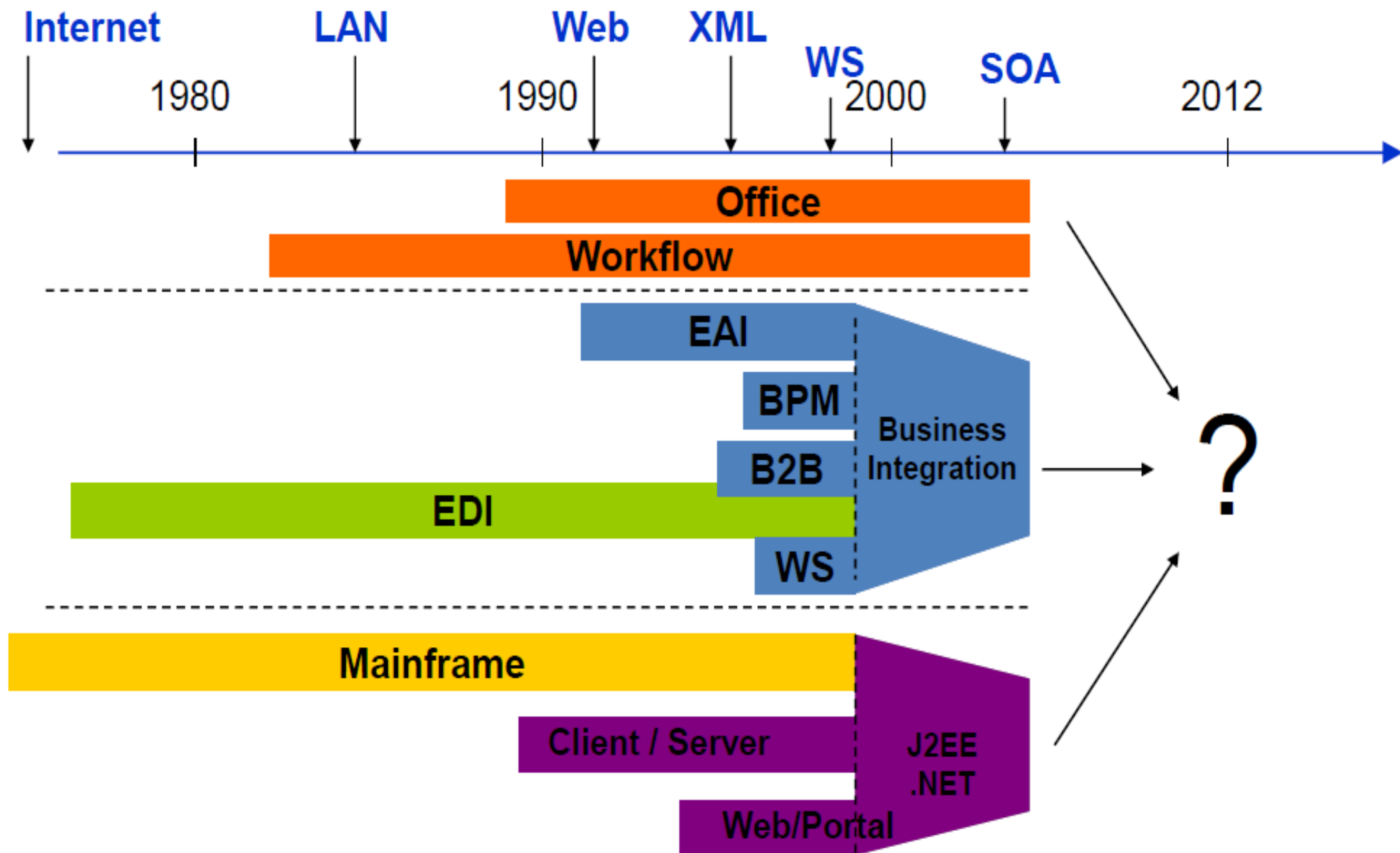


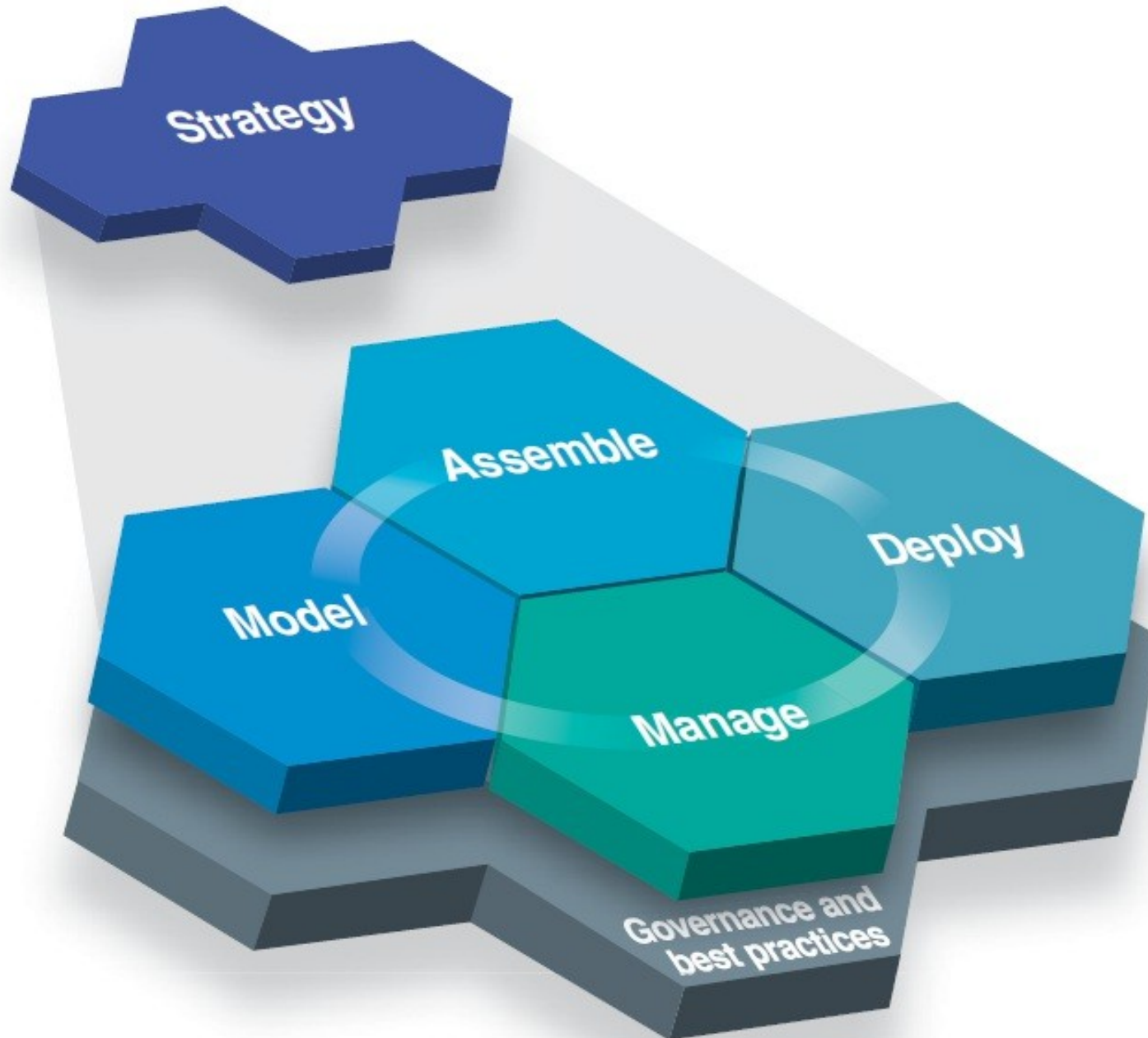
IT ARCHITECTURE

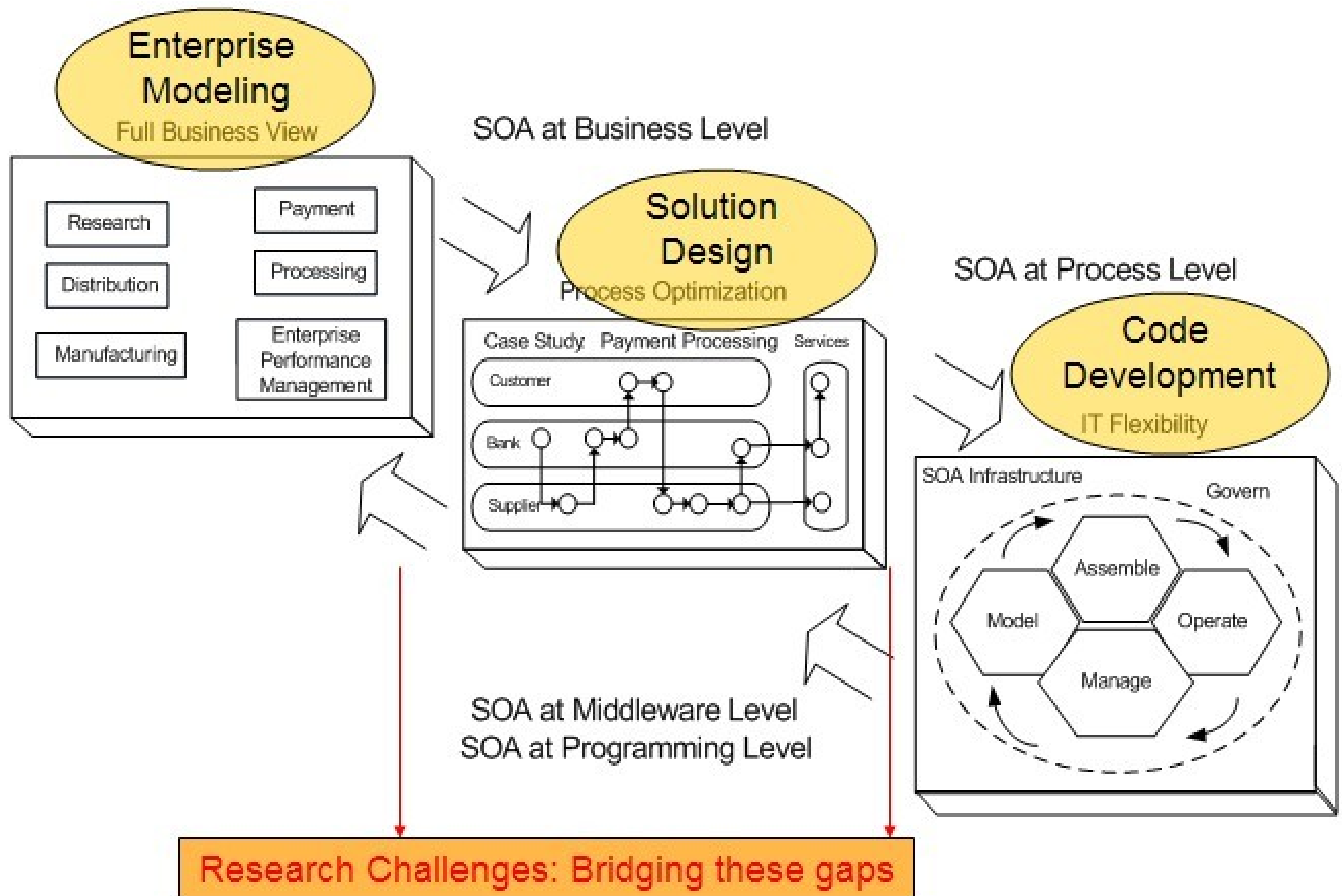
SERVICE ORIENTED
ARCHITECTURE

Willy Sudiarto Raharjo

Teknik Informatika
Universitas Kristen Duta Wacana



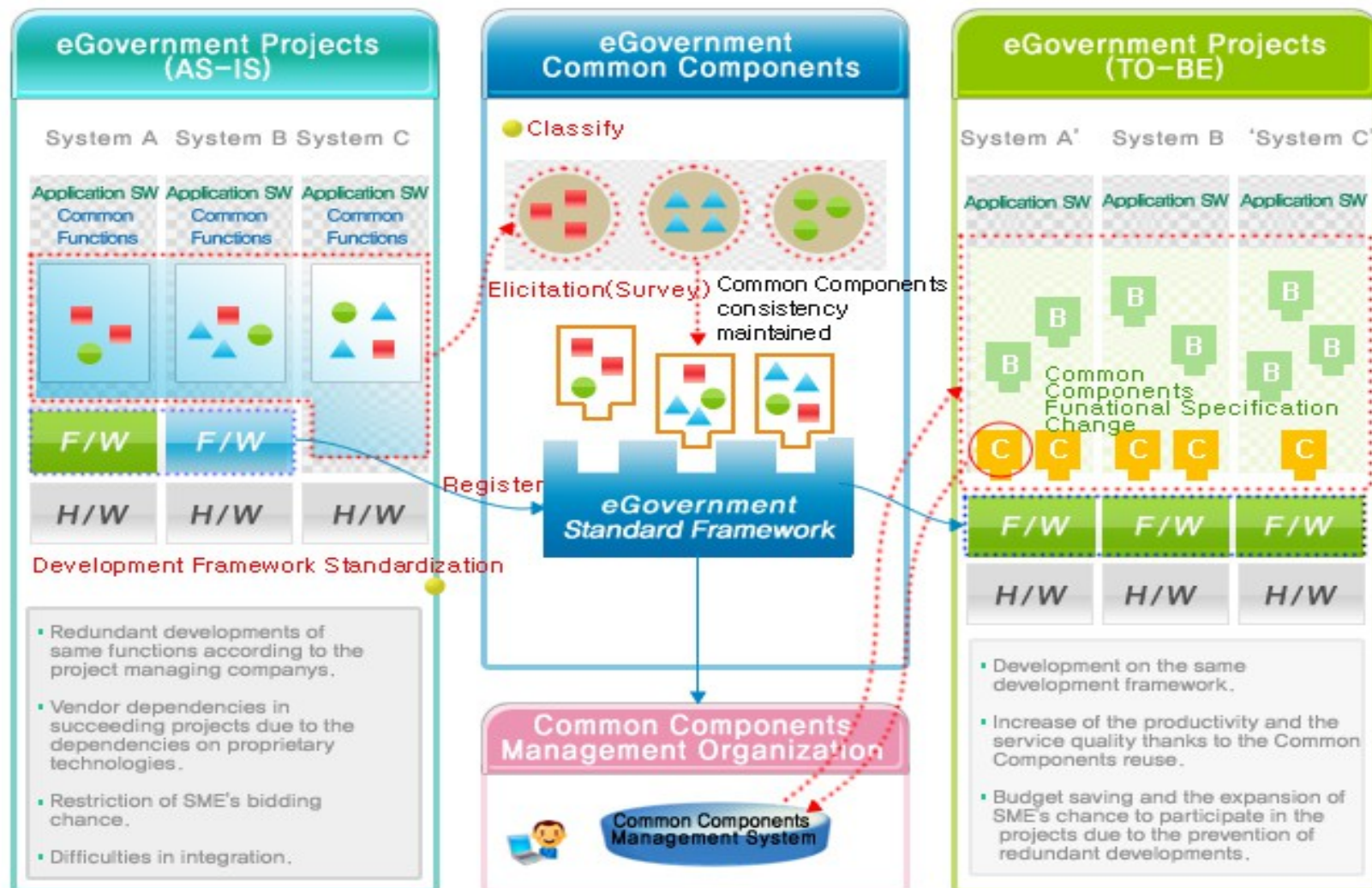




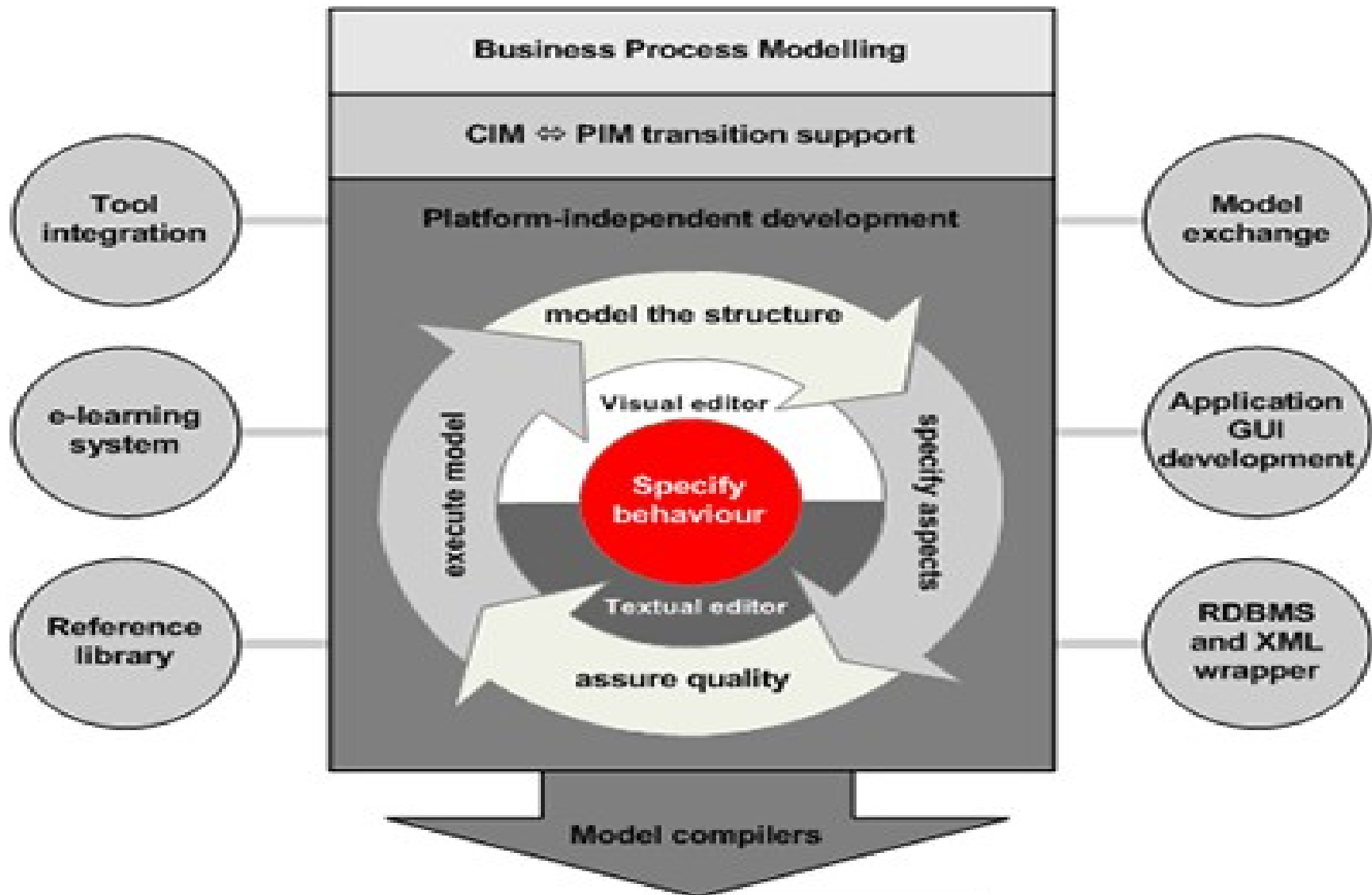


The core components which make up an SOA implementation

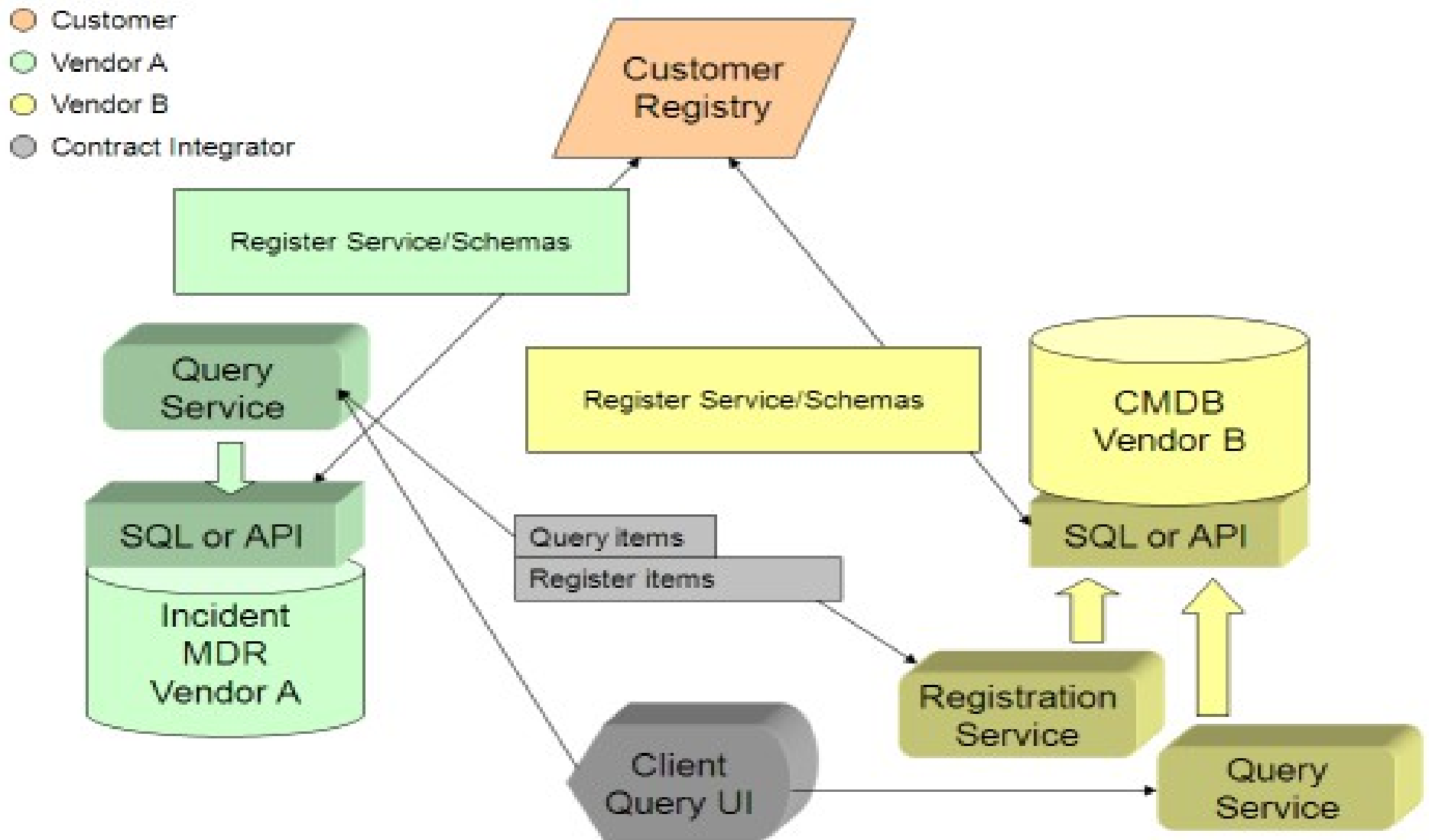
Componentization / Reusability



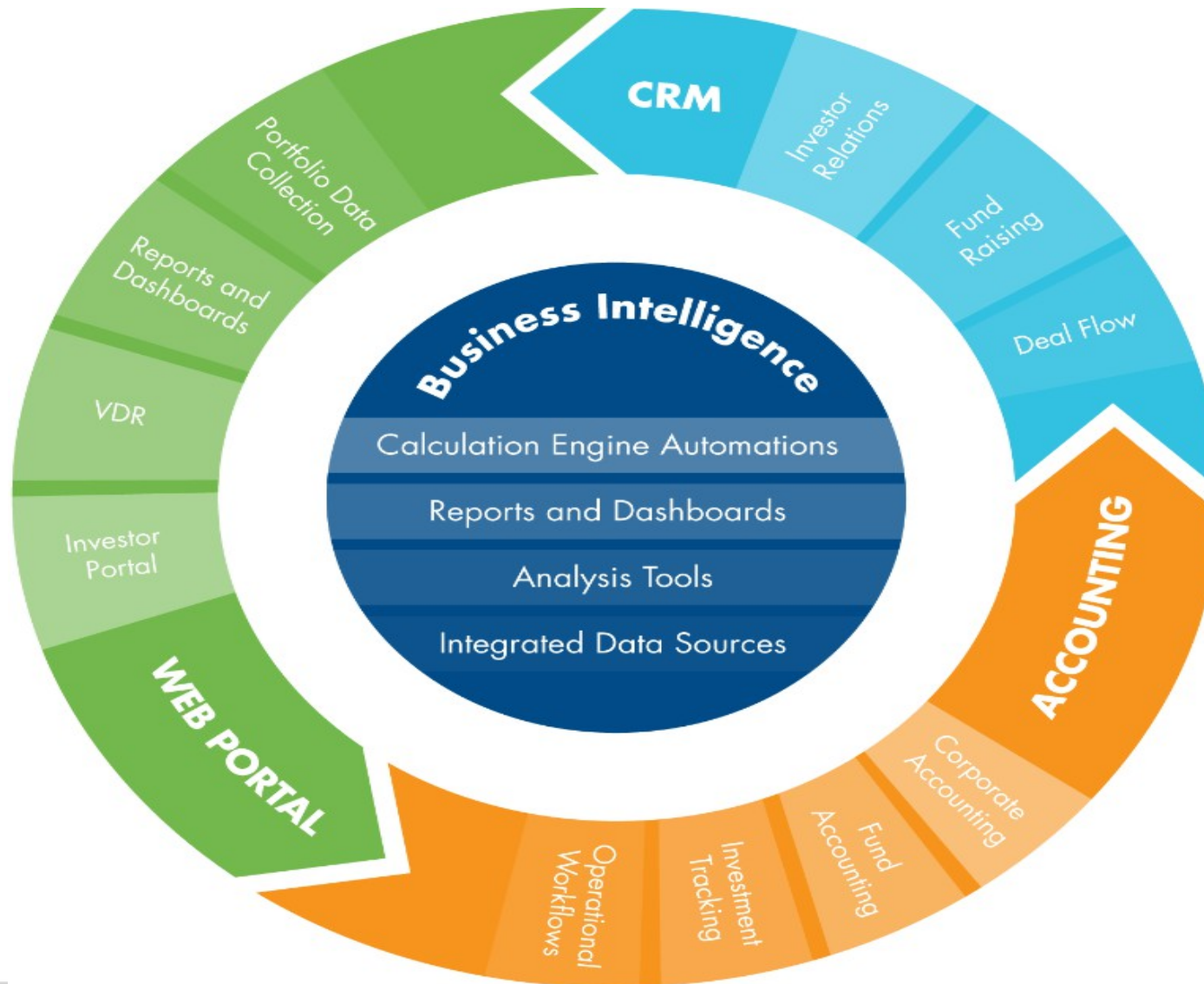
Flexibility and Simplification



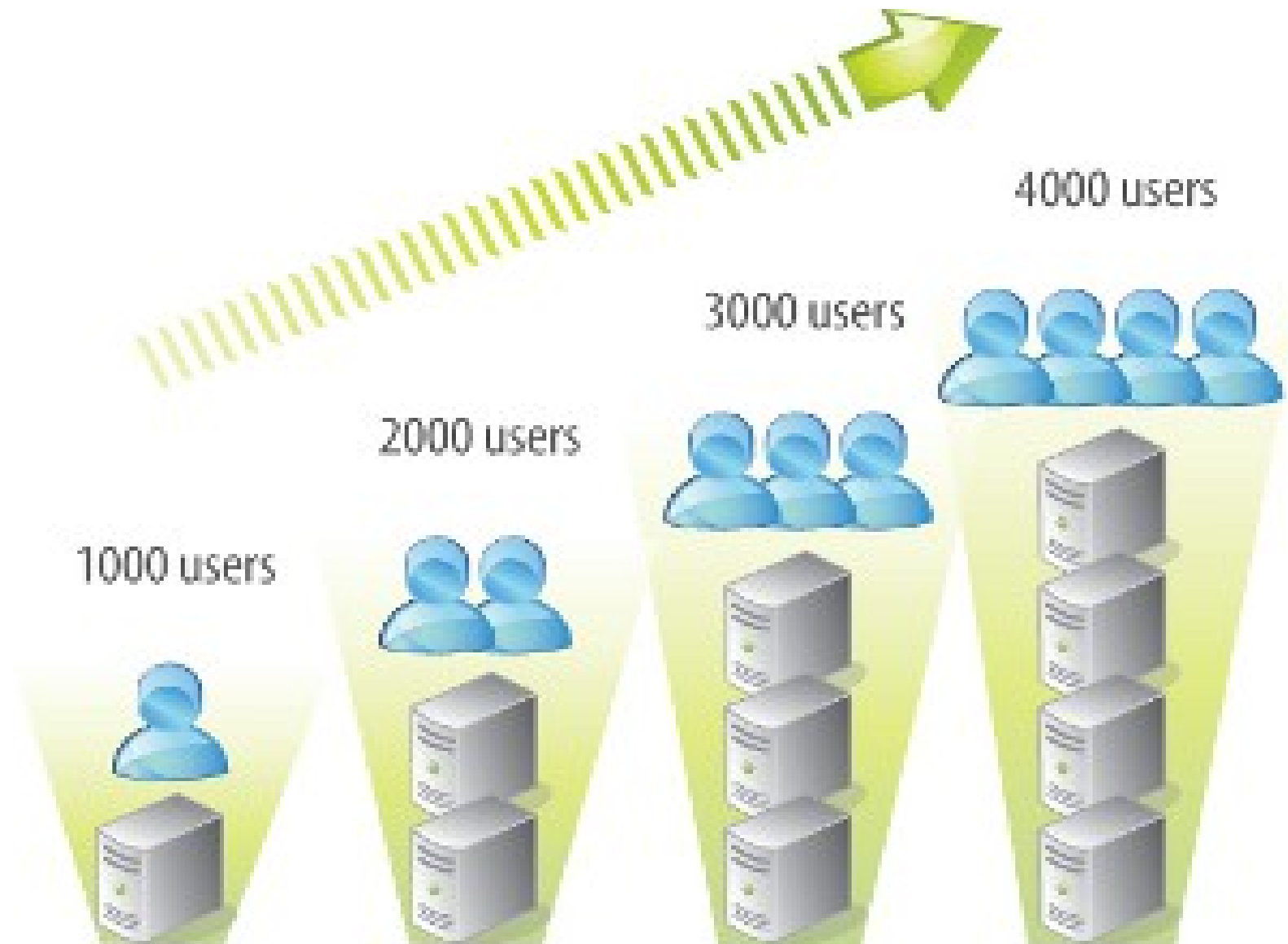
Loose Coupling



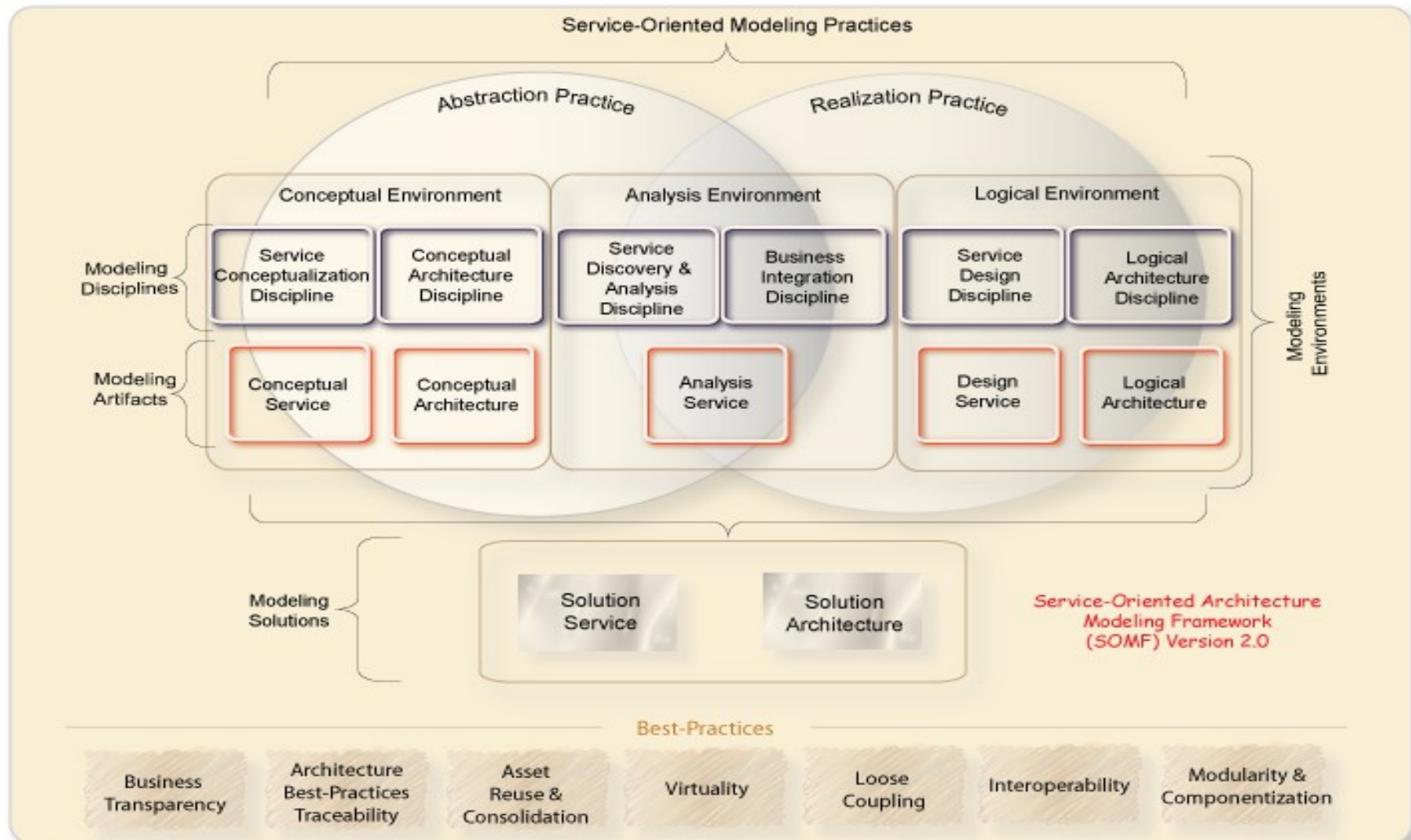
End to End Solution



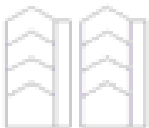
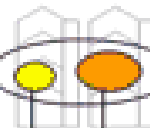
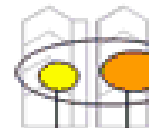
Scalable

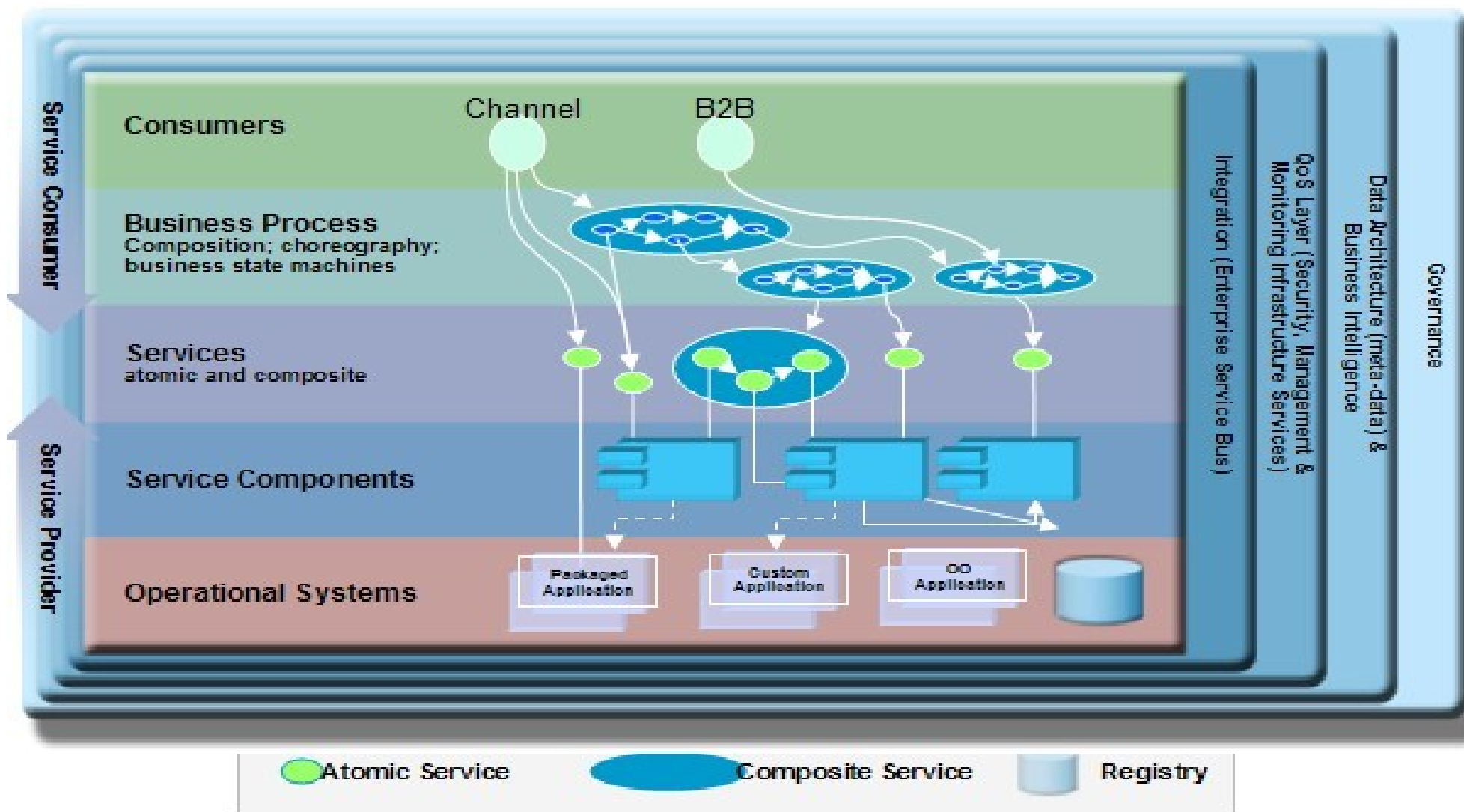


SOA Modeling Framework



Service Foundation Levels

	 Silo	 Integrated	 Componentized	 Services	 Composite Services	 Virtualized Services	 Dynamically Re-Configurable Services
Business View	Function Oriented	Function Oriented	Function Oriented	Service Oriented	Service Oriented	Service Oriented	Service Oriented
Governance & Organization	Application Specific Skills	IT Transformation	IT Governance	Technology Adoption	Organizational Transformation	Cultural & behavioral Transformation	Human Service Bus
Methods	Structured Analysis & Design	Object Oriented Modeling	Component Based Development	Service Oriented Modeling	Service Oriented Modeling	Service Oriented Modeling	Grammar Oriented Modeling
Applications	Modules	Objects	Components	Services	Process Integration via Services	Process Integration via Services	Dynamic Application Assembly
Architecture	Monolithic Architecture	Layered Architecture	Component Architecture	Emerging SOA	SOA	Grid Enabled SOA	Dynamically Re-Configurable Architecture
Information	Application specific data solution	Data Subject Areas established	Business Data can be shared outside the Silo.	LOB wide standardized Data vocabularies	Enterprise wide standardized Data vocabularies	Flexible Data vocabularies for expansion	Data vocabularies are Standards based
Infrastructure	Platform Specific	Platform Specific	Platform Specific	Platform Specific	Platform Independent	Technology Neutral	Dynamic Sense & Respond
Management	Application Specific	Platform Specific	Platform Specific	Service Specific	Service Independent	Virtualized	Dynamic Sense & Respond
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7



SUPPLY CHAIN DOMAIN

Business Logic Components

Business
Object Model

Business
Process Model

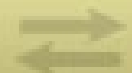
- life cycle definition
- workflow definition

Business
Rules

- validation
- transformation
- ETL definitions

Message Definition
and Routing Rules

↑ Service Layer ↓



Messaging



Data Integration

Component Layer

Workflow

Transaction

Session

Reporting

Business
Rule Engine

Security

Monitoring /
Administration

Data

Data

Common
Data

Data
Integration

Billing

Reverse Logistics

Planning and Forecasting

Order Pool Management

Inventory Management

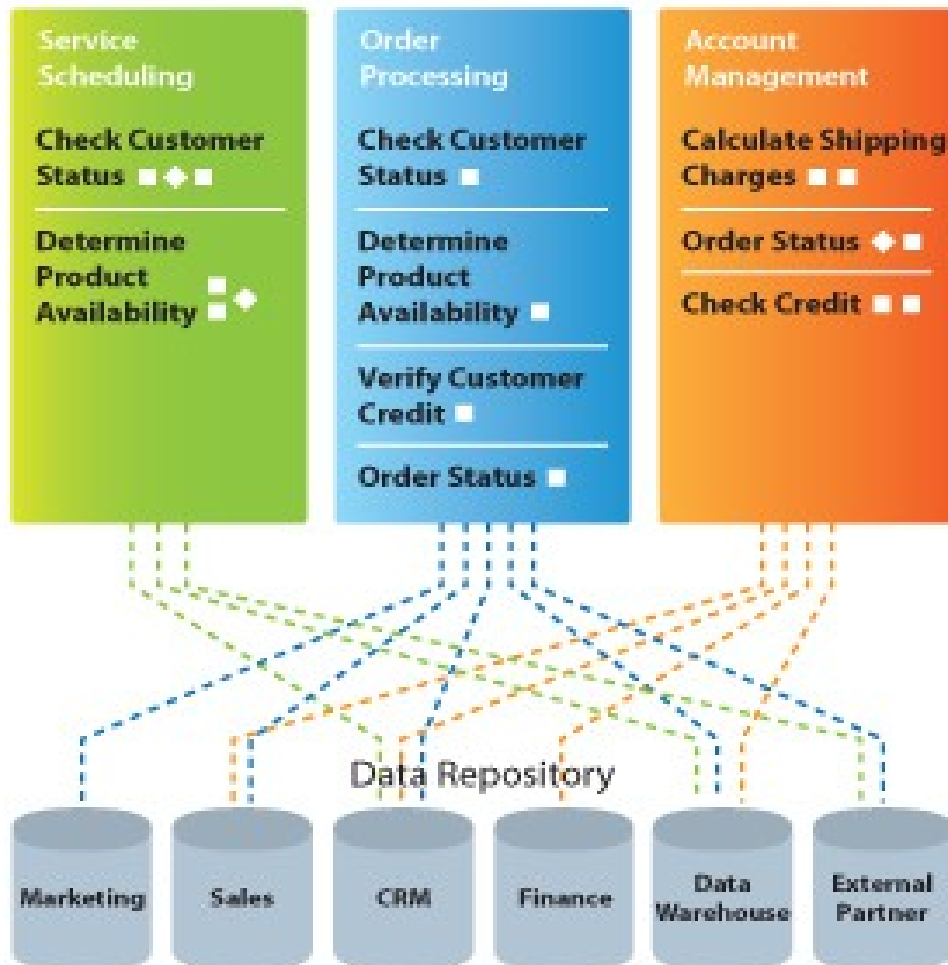
Reporting
Data
Access

External
Integration

Before SOA

Closed - Monolithic - Brittle

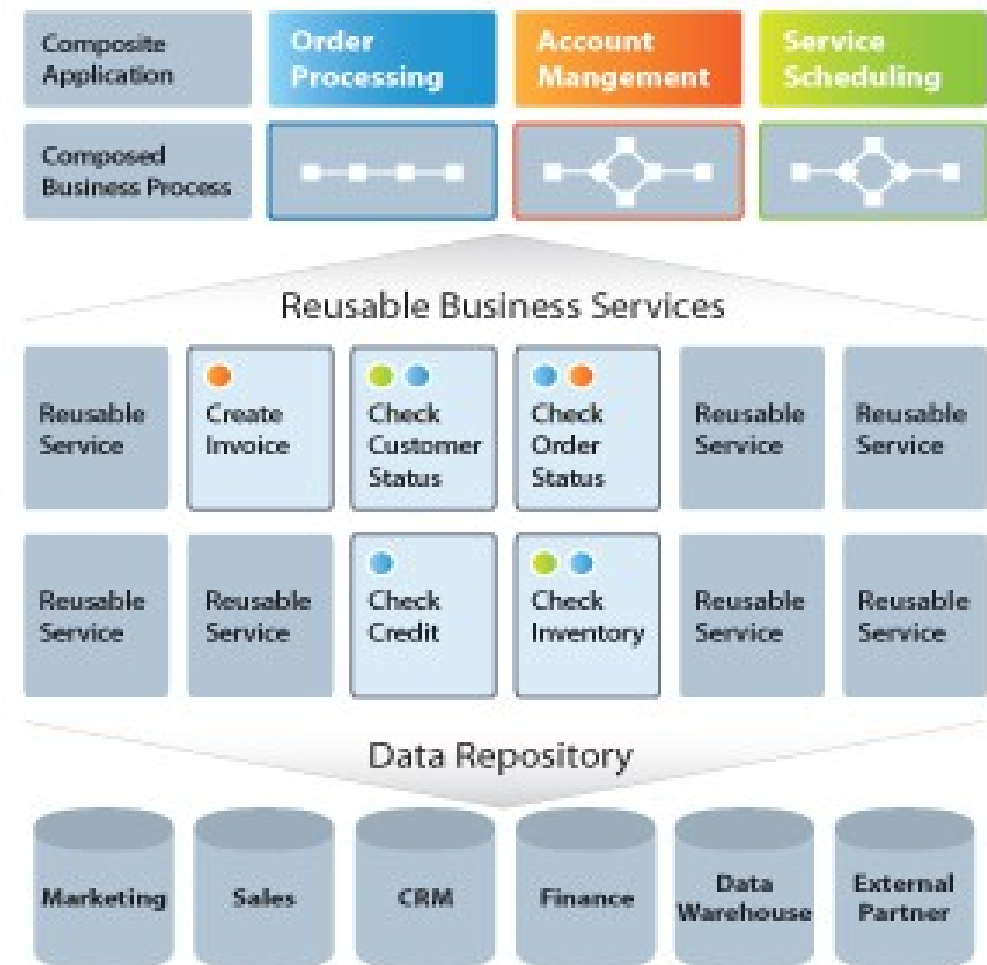
Application Dependent Business Functions



After SOA

Shared services - Collaborative - Interoperable - Integrated

Composite Applications

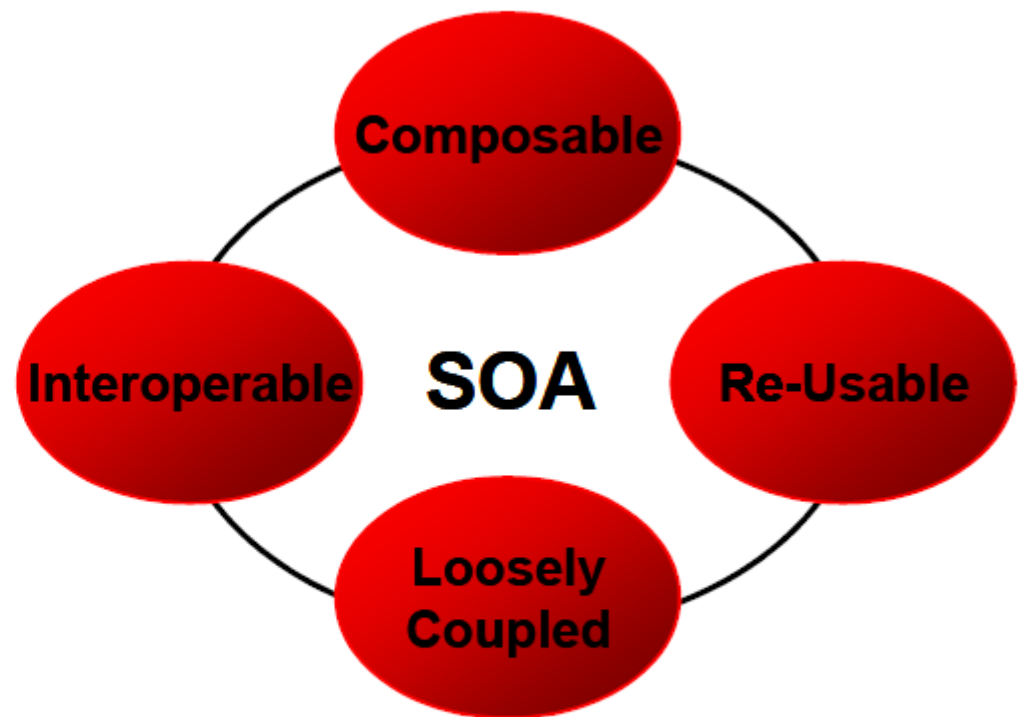


SOA Principles

- Standardized service contract : mutual agreement
- Service loose coupling : minimize dependencies
- Service abstractions : hide logic from public
- Service reusability
- Service autonomy : control over logic
- Service statelessness : minimize resources
- Service discoverability : communicative metadata
- Service composability : composition participants

SOA Implementation

- Services have **platform independent**, self describing interfaces (XML)
- Messages are **formally defined** (WSDL)
- Services **can be discovered** (UDDI)
- Services have **quality of service characteristics** defined in policies (SOAP)
- Services can be **provided on any platform** (HTTP)
- Services can be **secured** (WS-Security)



SOA Implementation

