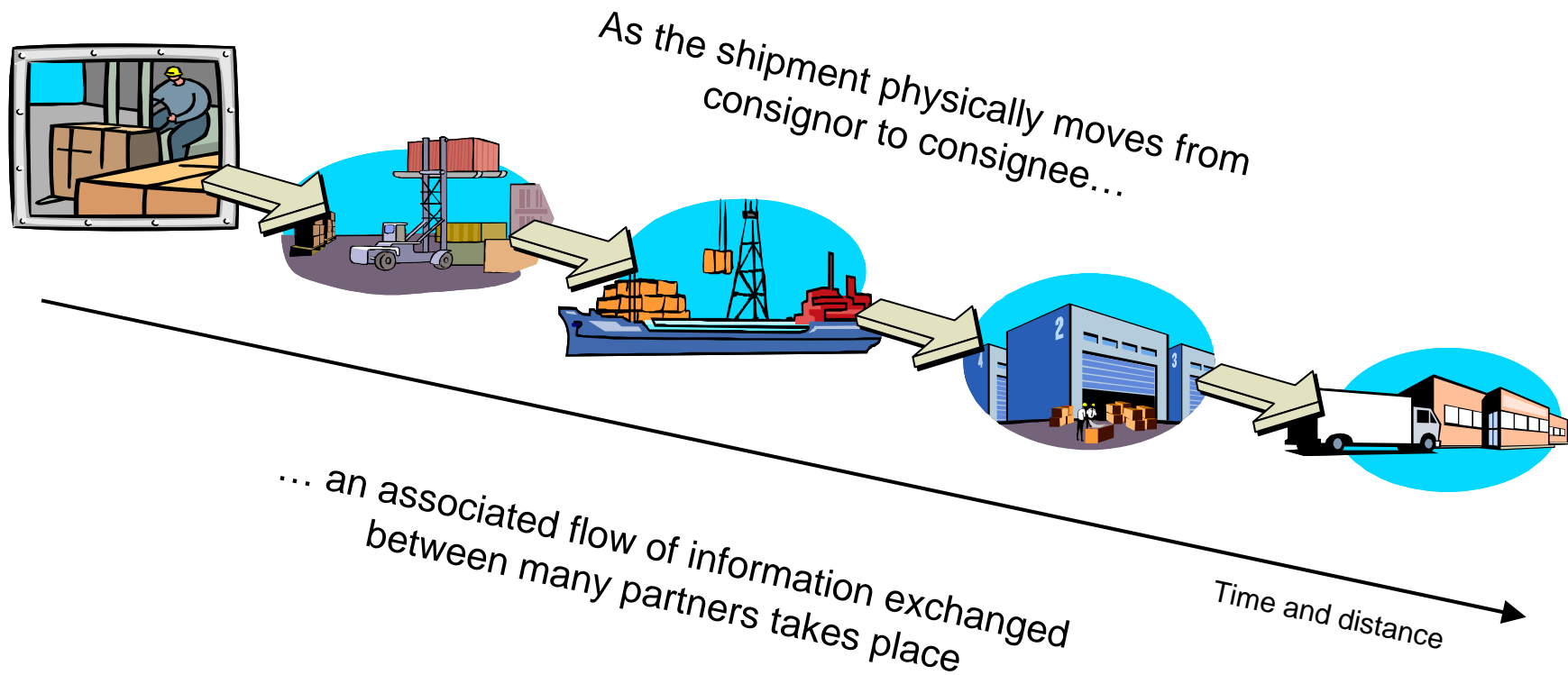


Presentation

Utilizing Service-Oriented Architecture (SOA) in Connecting Multi-Enterprise Freight Operations

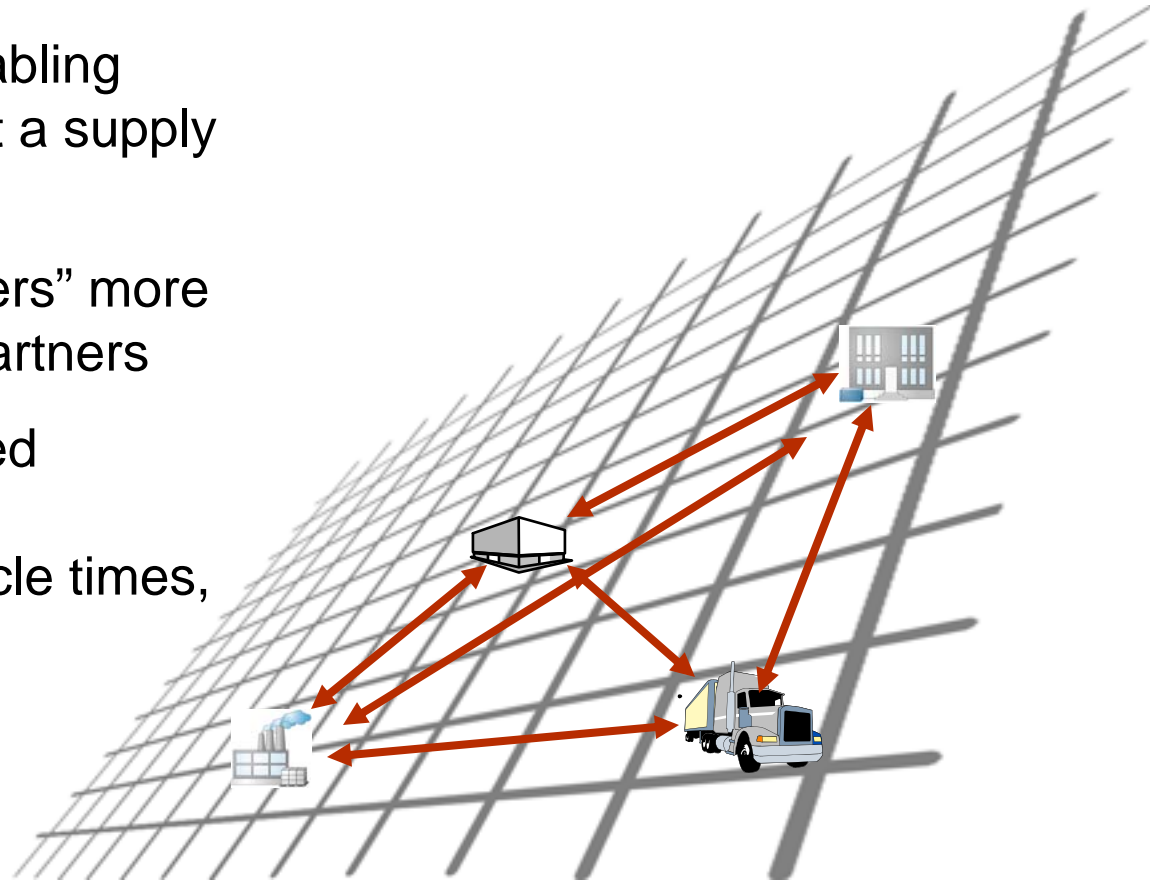
2nd National Urban Freight Conference
Long Beach, CA
December 6, 2007

Consider the physical transport and distribution functions in a freight supply chain, and the associated information flows



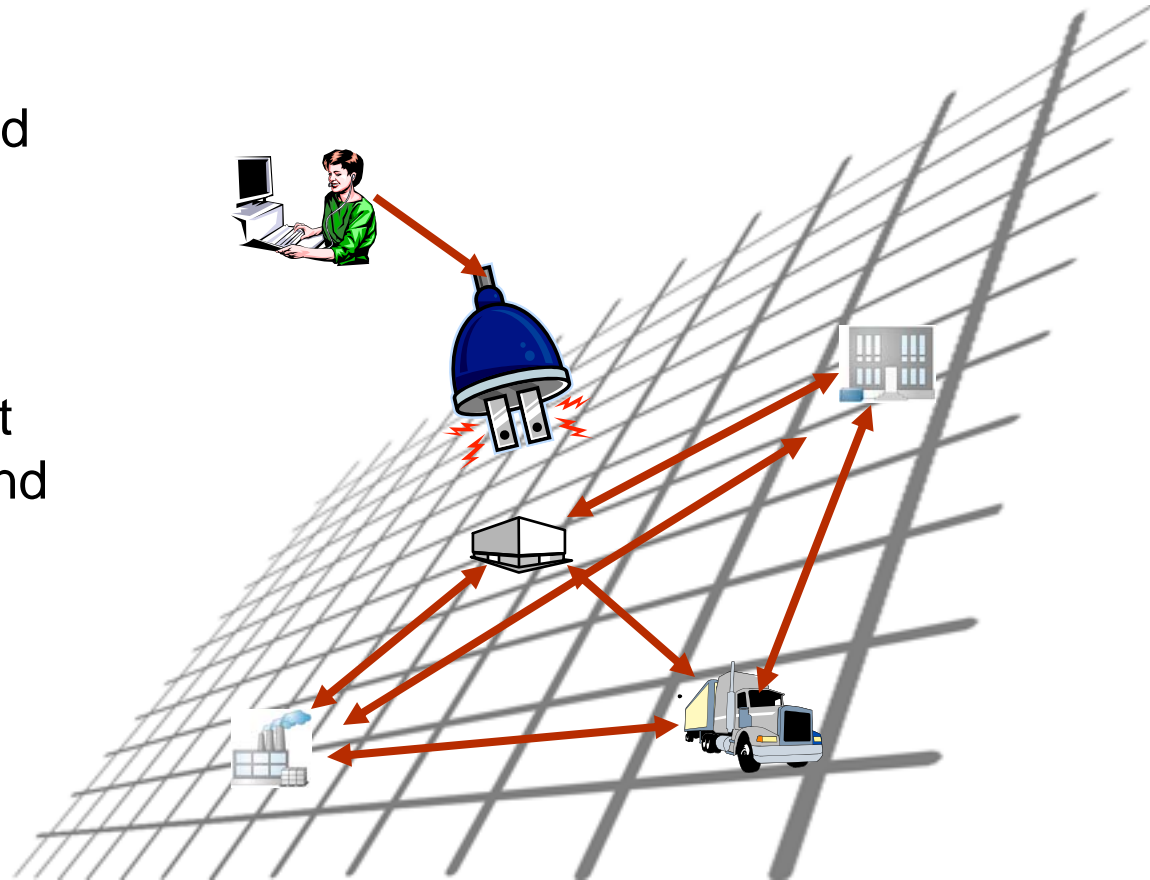
A freight related SOA implementation uses and extends emerging global standards and an open-source architecture

- Information grid enabling interaction throughout a supply chain network
- Supply chain “owners” more easily connect new partners
- Value from improved information exchange (visibility, security, cycle times, etc).



A freight related SOA implementation uses and extends emerging global standards and an open-source architecture

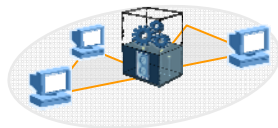
- Connectivity enabled for new partners
- *Especially small enterprises*, that may have no IT investment beyond a computer and internet access.



There are four main components to a freight related SOA implementation



➤ **Standards Support**



➤ **Technology Solution Development**

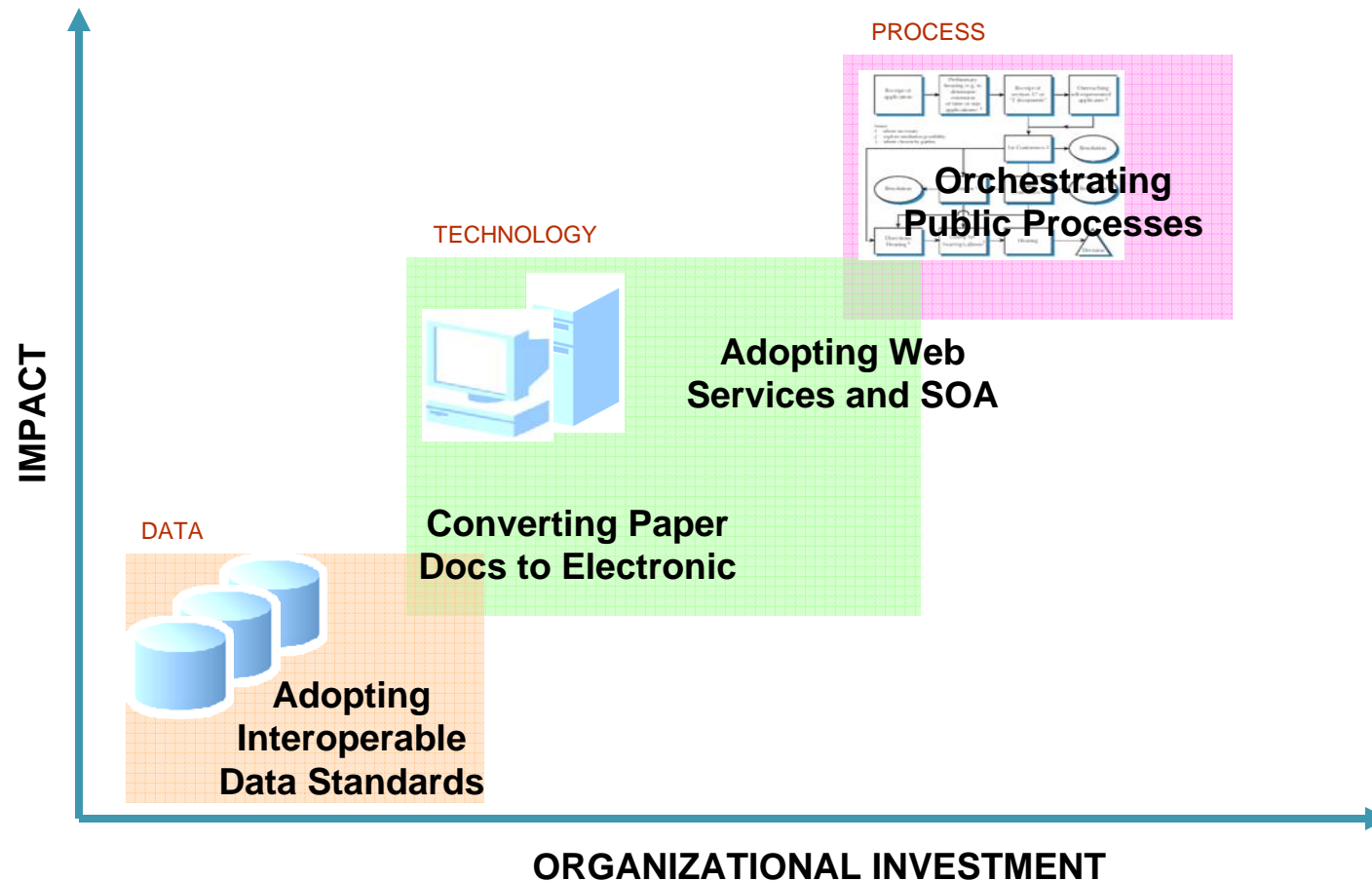


➤ **SME Support**



➤ **Outreach**

The concept follows an organizational maturity model in the long term, recognizing the phased adoption of key elements



Architecture designed in this way will lead to a shift in operating models for exchanging shipment information

Today's Environment

- ▶ Driven by Electronic Data Interchange (EDI)
- ▶ Expensive value-added networks needed to transact with partners
- ▶ Point-to-point data sharing agreements necessary with each partner



Future Environment

- ▶ Standards-based XML messaging
- ▶ Any authorized partner in the supply chain can easily access and use data
- ▶ Lowered barriers to entry by small and medium enterprises
- ▶ Legacy investments protected

A core and reusable technology platform provides key services common to all implementations

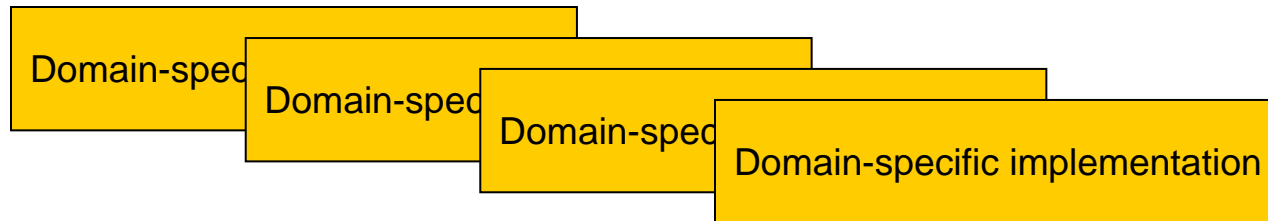
1

Service-Oriented Architecture for Freight Operations

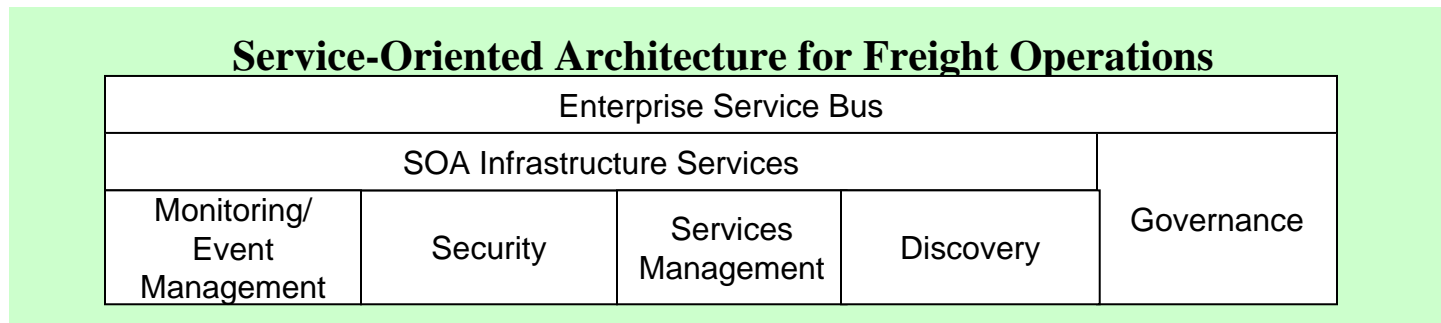
Enterprise Service Bus				
SOA Infrastructure Services				Governance
Monitoring/ Event Management	Security	Services Management	Discovery	

Domain-specific implementations add items such as data models to the core architecture

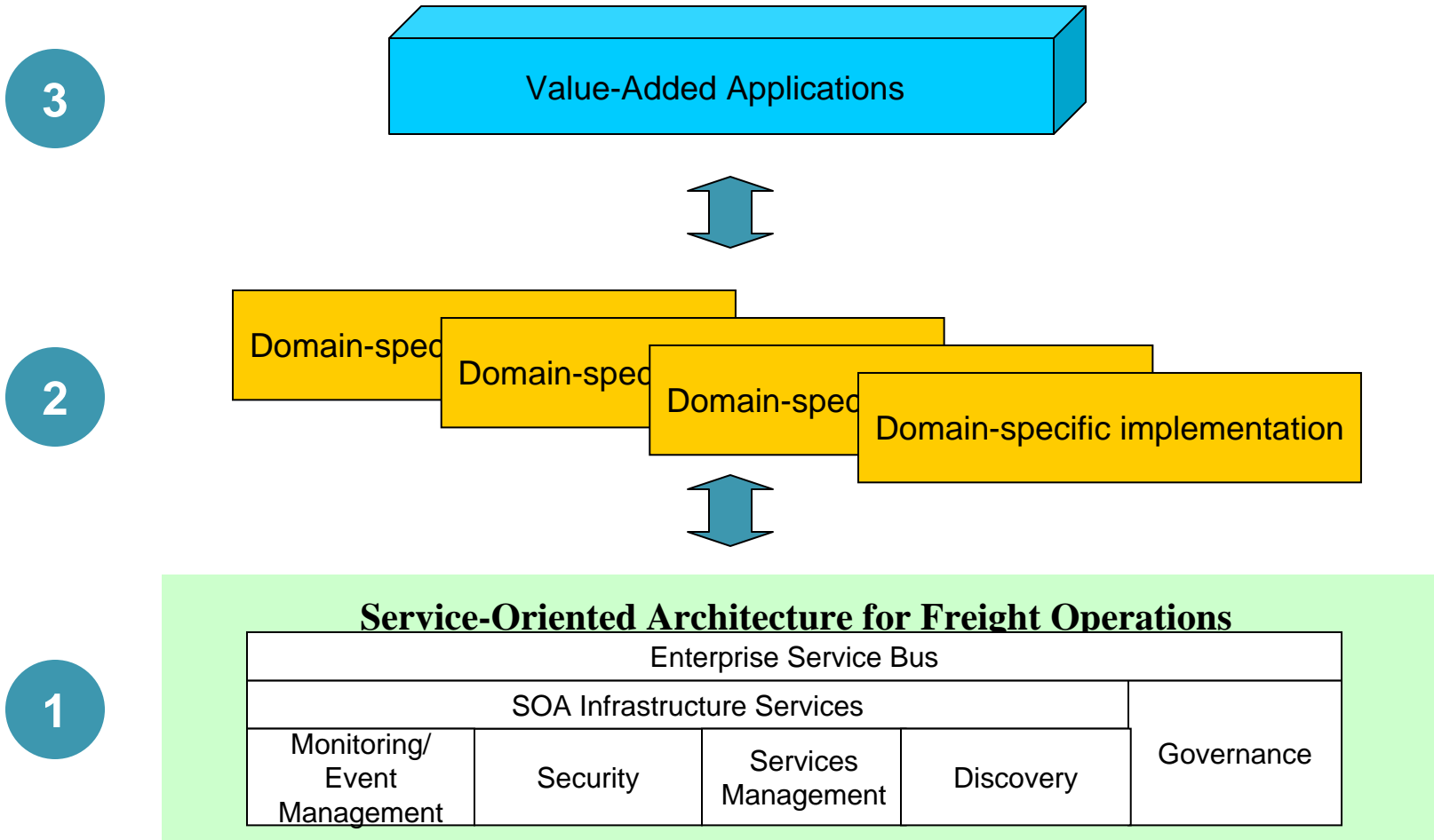
2



1



Third-party application vendors should be encouraged to create value-added applications atop the architecture



Current conditions are appropriate for a freight related SOA approach

- ▶ Many organizations have matured infrastructure but still experience issues collaborating across boundaries
- ▶ SOA is becoming fully entrenched
 - Platform for collaboration
 - Leading ERP vendors
- ▶ Necessary standards are becoming available
 - Web services and XML
 - Data standards