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SOA and Enterprise Architecture: Integration that Works

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Brief History of Time: Development and Integration

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Architectural Styles

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- Complexity ↑
- Importance of Architecture ↑

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Service-Based Interoperability (before Y2k)

Interoperability based on a common technical bus or hub-&-spoke architecture, where some form of enterprise middleware is deployed to facilitate communication between *black-box* applications

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Maturity in Adopting Web Services

Web Services as technology mapping (high-ROI today!):

- ◆ XML-based information exchange
- ◆ Web Services-enabling specific legacy systems (“inside-out”)

From Web Services to “Service Oriented Architectures” (SOA):

- ◆ “Architecture-Driven” Web Services (“outside-in”)
- ◆ Orchestrated services (e.g., nested Web Services)
- ◆ Architecting a business process/use case for implementation with Web Services
- ◆ Architecting a portfolio of applications using Web Services, SOAs, and other technologies and architectural approaches

Typical evolution of adoption maturity

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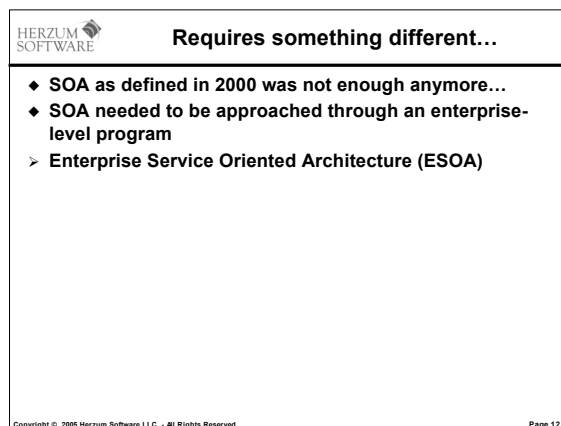
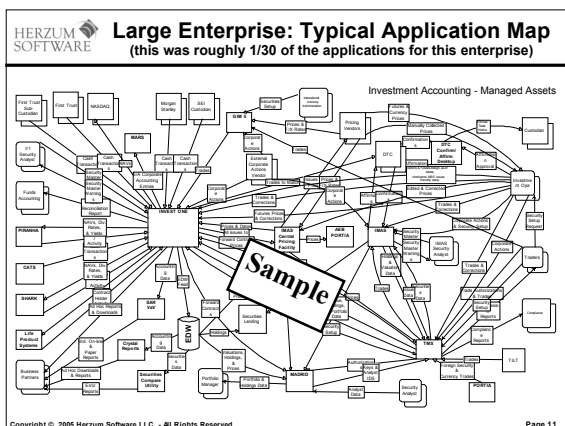
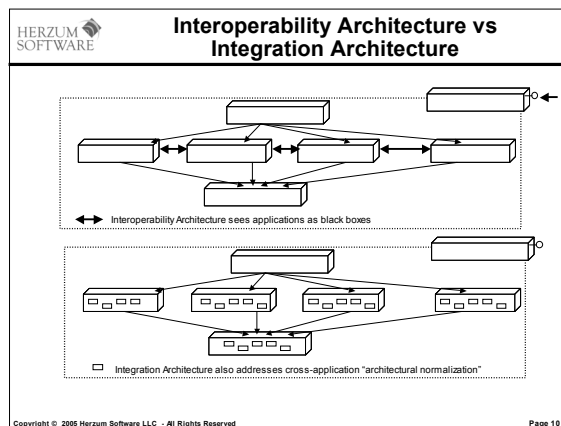
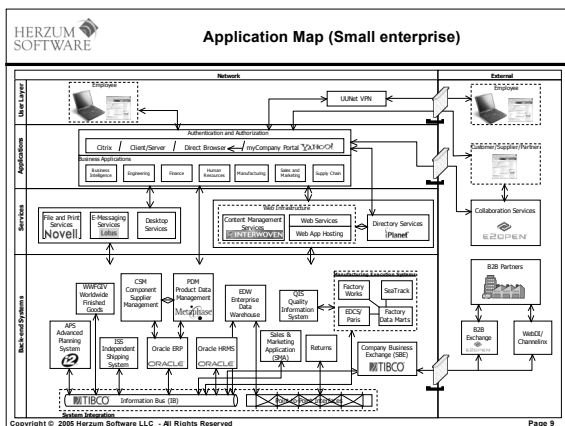
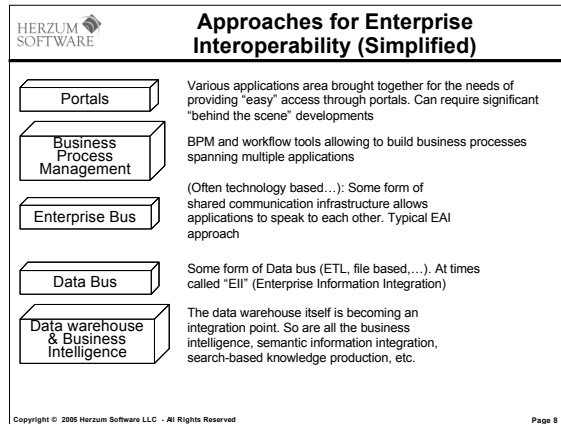
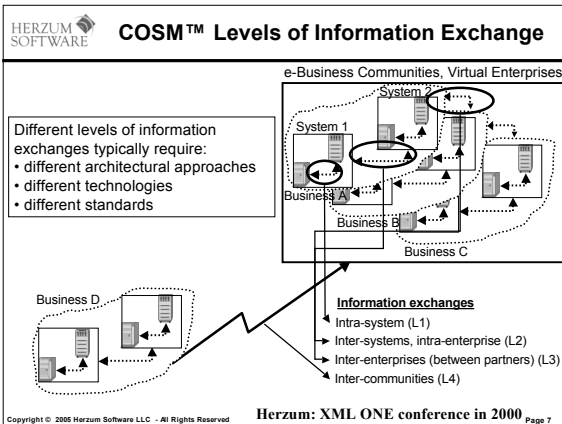
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Example Characteristics of SOAs

- ◆ Standard-based (XML related standards – strongly tagged)
- ◆ (Continued) Emphasis on data and information exchanges
- ◆ Emphasis on registries and mediation architectures
- ◆ Shifting from interfaces to contracts
- ◆ Technical and (...future) business negotiation
- ◆ Ontologies and other semantic aspects
- ◆ From “interface” to “interoperability architecture problem”
- ◆ New security challenges
- ◆ Allow (and require) new application management solutions
- ◆ Mindset switch from “install and use” to “find and invoke”
- ◆ Very loose coupling

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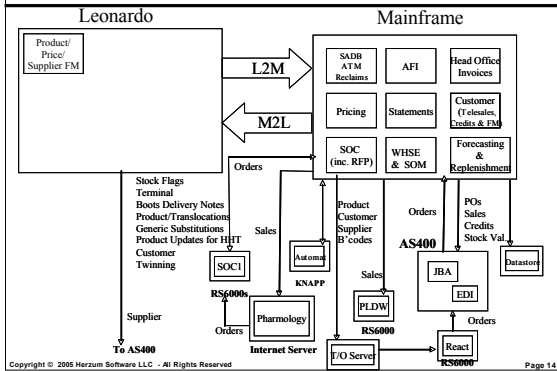


Why bother with ESOA...?

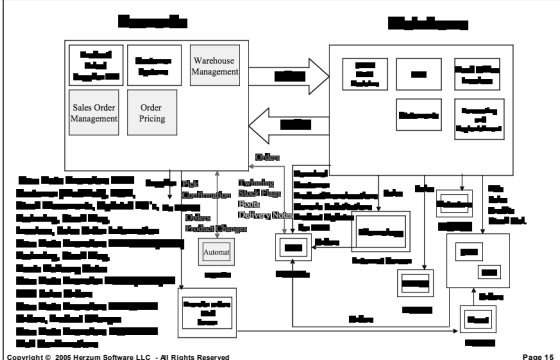
Example objectives:

- ◆ Reduce interoperability technologies and solutions, simplify their adoption
- ◆ Real-time dataflows
- ◆ Support evolutionary migration away from legacy
- ◆ To support simplification of application portfolio (“from 900 to 500 applications”)
- ◆ To support specific programs (“360 degree view of customer”)
- ◆ ...

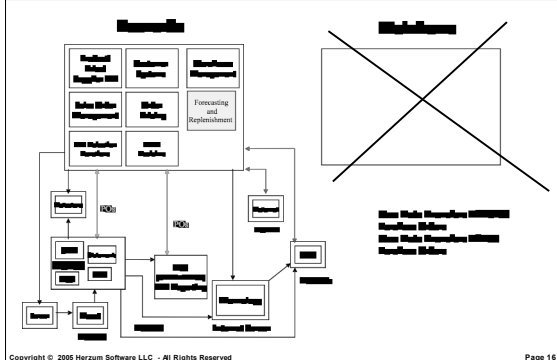
Example Migration: Phase 1



Phase 3



Phase 5

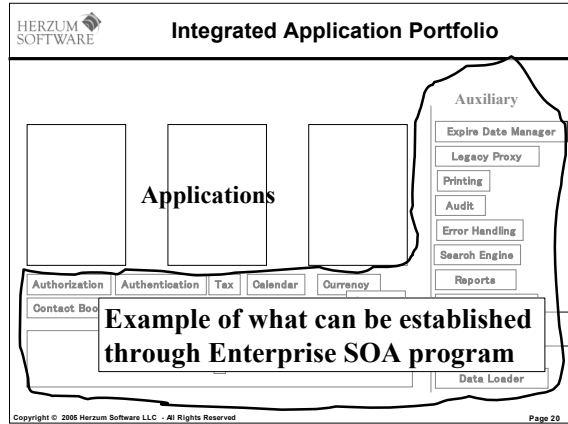
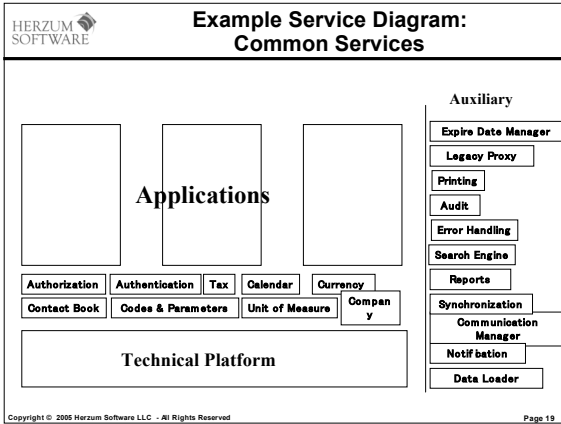


ESOA Defined

- ◆ Wide-impact enterprise-level program created to support specific objectives in a business or IT strategy (different for each enterprise), and typically leading to a multi-dimensional set of actions, impacting for example:
 - Technical architecture: adoption of standardized protocols, technologies, system management approaches, security standards
 - Structural architecture: adoption of specific enterprise patterns, architectural approaches, adapter architectures, security solutions, ...
 - Functional Architecture: Adoption of enterprise-level services, both *basic* (security, logging, “product ID”, “customer ID”) and non-basic (create customer, getAllAccounts, ...)

ESOA as an Enterprise Program

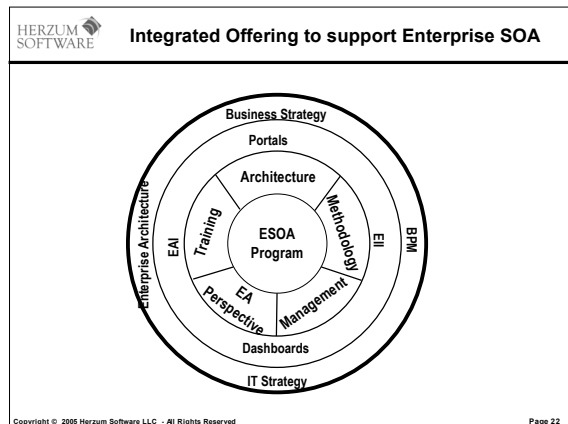
- ◆ Each enterprise typically has multiple business and IT programs active at any specific point in time (typically between 3 and 15)
- ◆ A “program” is typically a multi-year activity, including a set of projects spanning multiple organizational units



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ESOA and Enterprise Architecture

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COSM™

- ◆ Widely-used approach for Agile Software Manufacturing and Enterprise Architecture
- ◆ Enterprises around the world leverage COSM™ to kick-start their projects and cost-effectively address IT challenges
- ◆ To our knowledge, COSM™ is the ONLY approach scaling from the smallest project to the management of a whole IT portfolio
 - With common conceptual framework and continuous flow to align business strategy down to individual projects
- ◆ Today available in two offerings:
 - COSM™ Project : Project-level approach
 - COSM™ Enterprise : Enterprise-level approach

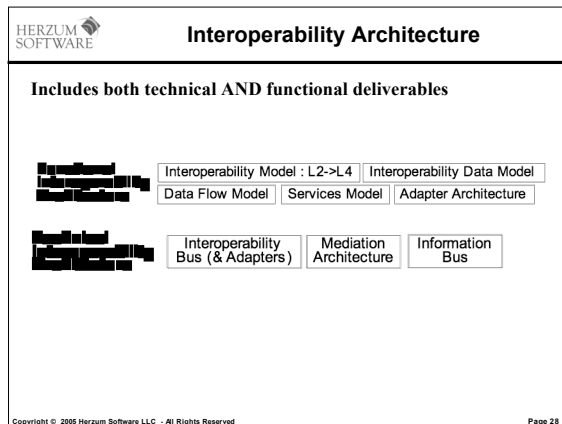
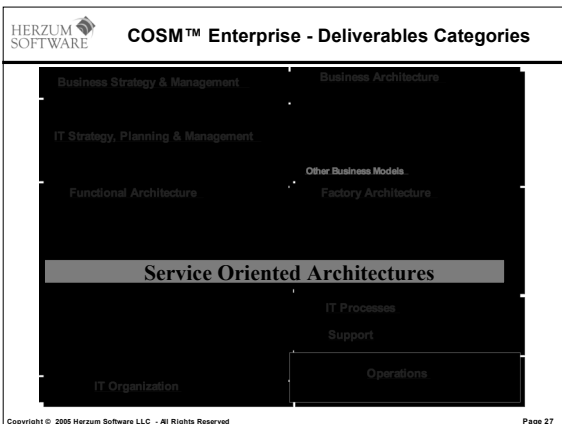
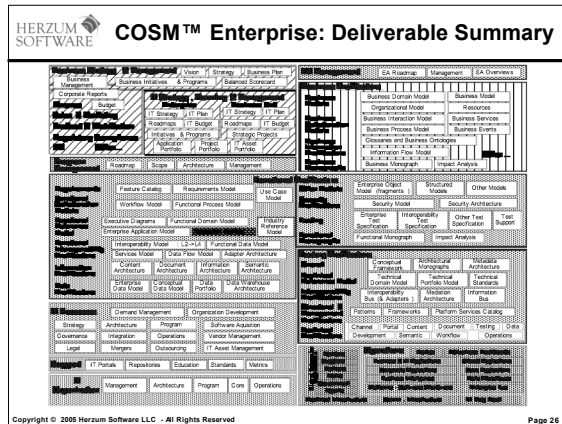
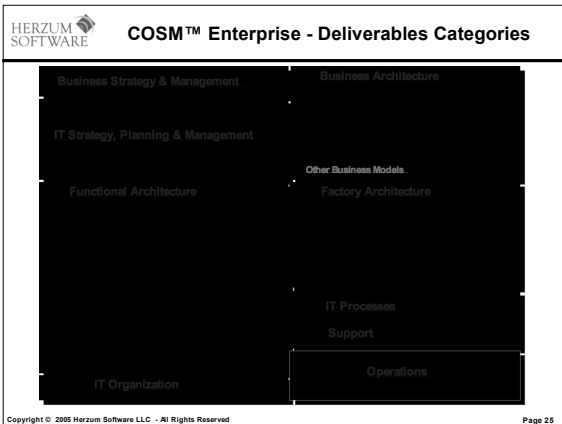
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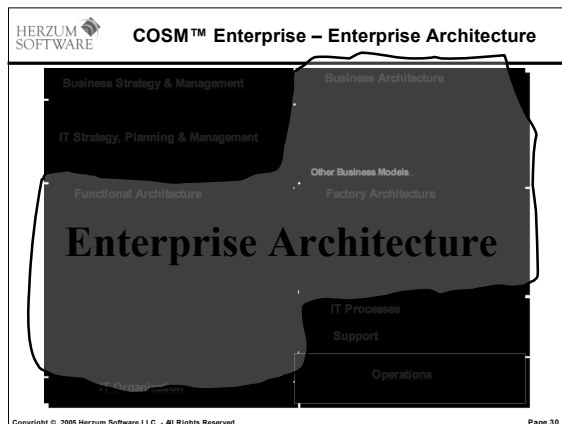
COSM™ Enterprise

- ◆ Applied and evolved since 1999
- ◆ The second generation enterprise-level approach
- ◆ Covers IT Strategy, Enterprise Architecture, and creating an active link from Business Strategy down to day-to-day IT Management and individual projects
- ◆ Supports enterprises looking for ways of aligning business and IT, reduce their IT costs, rationalize their IT portfolio, manage IT as a business, and more
- ◆ Includes enterprise-level principles, guidelines, blueprinting approaches, architectural and IT governance processes, business modeling, enterprise-level patterns, portfolio management techniques, enterprise-level technical infrastructures and bus, and more
- ◆ Enables corporations to effectively acquire, outsource, integrate, connect, develop, modify, operate, and retire the elements of an IT Portfolio while progressively aligning to your Business Strategy, IT Strategy and Enterprise Architecture

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- HERZUM SOFTWARE Interoperability Process: Phases**
- 1. Requirements**
 1. Integration Use Cases
 2. Conceptual and Logical Model
 3. Services Specification
 4. Interoperability Model Technical Requirements (End to End)
 - 2. Design**
 1. EIM Enterprise Functional Design
 2. EIM Application-level Functional Design
 - 3. Implementation**
 1. Application Level activities
 - 4. Test**
 1. Integration deployment test
 2. System test
 - 5. Support Process**
 1. Documentation
 2. Issue Manager
 3. Repository
- EIM: Enterprise Interoperability Model*
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HERZUM SOFTWARE **COSM™ Enterprise - Deliverables Categories**

Enterprise Service Oriented Architectures

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HERZUM SOFTWARE **COSM™ Enterprise: EA Maturity Phases**

Inception → Classify → Blueprint → Integrate → Optimize

Inception:

- No clearly defined EA Team (center of excellence)
- Focus on technology
- EA (or enterprise nervous system) through technology
- Budgeting through collection
- No direct support for project synergies
- Ad-hoc IT strategy

Classify:

- EA team defined. Enterprise deliverables through collection and classification
- Executive diagrams. Blueprints as separate activities
- Simple frameworks (e.g. Zachman) used to classify deliverables
- Simple portfolio model (= inventory)
- Data warehousing as independent activity
- High-risk, ineffective enterprise programs due to lack of proper architectural and governance support

Blueprint:

- Reference Architecture. Detailed normalized blueprints, dependencies recognized. Simple architectural frameworks abandoned
- Portfolio Model organized according to reference architecture
- Data management & business modeling deliverables related to other enterprise activities
- Information bus beyond technology. E.g. enterprise single sign-on
- EA organized as program & pervasive across organization
- Program Management Office established for strategic initiatives.
- Basic governance processes

Integrate:

- IT integration. "Well-structured" integration architecture
- Alignment of data, application, information, technology integration
- Ability to retire, purchase, outsource systems within reference architecture
- Advanced governance processes

Optimize:

- Enterprise integration (both business and IT)
- Business, IT, individual projects aligned
- Process & architecture continuously optimized
- Agile Integrated Enterprise

Nirvana...

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HERZUM SOFTWARE **Success in ESOA requires...**

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- EA organized as program & pervasive across organization
- Program Management Office established for strategic initiatives.
- Basic governance processes
- Use of Enterprise Repository tool

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HERZUM SOFTWARE **Conclusions**

- ♦ ESOA is 2004 evolution of SOA
- ♦ ESOA is typically one of several programs in typical medium/large sized enterprise
- ♦ Success criteria for ESOA include
 - A structured and flexible approach to EA
 - Going from interoperability architecture to integration architecture (the "component" level)
- ♦ ...and yes, the volume of information addressed by ESOA or any "modern" enterprise program requires today a good Enterprise Repository

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HERZUM SOFTWARE **Questions?**

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