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The Industrialization of Software: the movement towards SOA

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The agenda

- How are we transitioning?
- What is Software Industrialization?
- What is SOA?
- Where are we headed?

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Where are we today?

- Too much bottoms up development of solutions
- Too many disconnects between software elements and business process
- Too many departmental stove-piped applications
- Too many point-to-point integrations
- Too much focus on solving one specific problem at a time

There is no future proofing!

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The Challenges

- How do you focus on the business goal?
- How do you leverage your software investments in the most cost effective and business effective way?
- How do you institute the right level of oversight?

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Can You Protect Yourself?

- How does corporate governance impact the way software is designed?
- Are your business rules in synch with proper business practices?
- Are there rules buried in applications that are contradictory?
- If you plan to create a flexible component driven architecture that will be as relevant in terms of code, connectivity, and business process in 2008…will it be obsolete before you deploy it?

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The Answer is SOA

- Evolution is underway
- Built on 25 years of effort
- Creating a new paradigm for thinking about software from the business perspective
- SOA is a combination of software engineering, business process orientation, and a new management philosophy
- An uncomfortable transition

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What is SOA?

A software architecture for building applications that implement business processes or services using a set of loosely-coupled black-box components orchestrated to deliver a well-defined level of service

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SOA is….

- A Software Architecture
  - Implements business processes or services
  - Set of black-box components
  - Loosely coupled
  - Well defined level of service

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SOA is focused on the business goal

- Leveraging valuable software assets and best practices by turning them into reusable business services
- Enabling these business services to be combined based on need
- Insure that the combined assets deliver the right business objectives and meet regulatory requirements

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It's About Thinking Differently

- Think differently about:
  - Software
  - Process
  - Linking rather than integrating
  - Managing based on process
- It's putting the pieces in context with:
  - Security
  - Data
  - Quality
  - Manageability

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It's About Industrialization

- What does industrialization mean?
- Where did it start?
- What does it mean for software?

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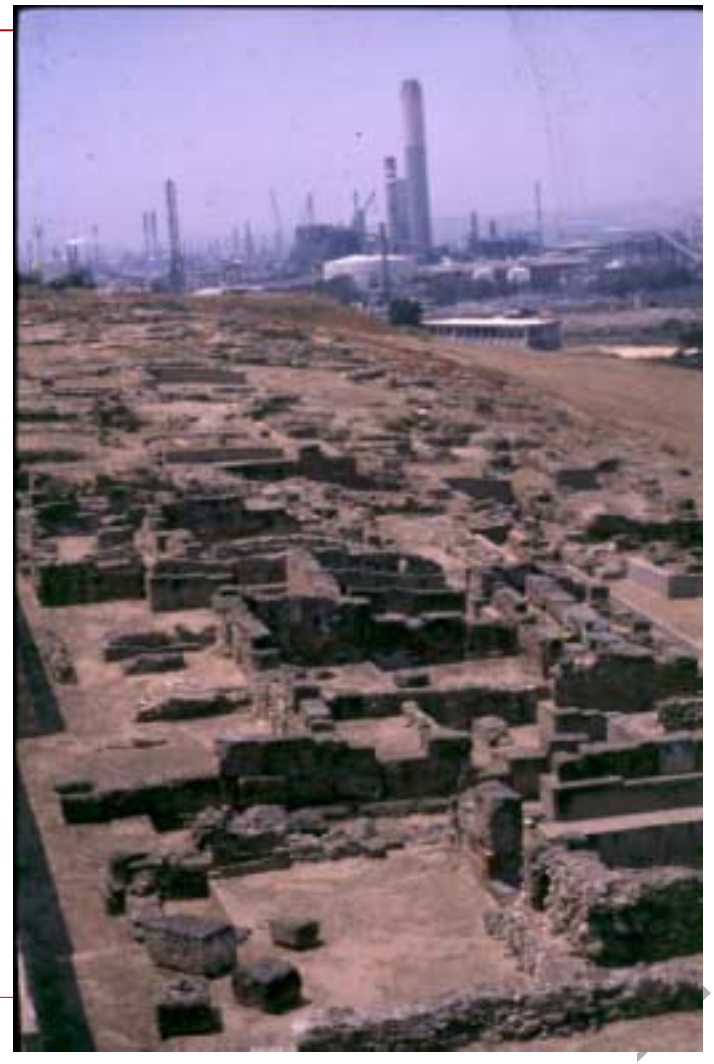
Industrialization: The Model

- James Watt
  - Power for the automation of manual tasks
- Eli Whitney
  - Standard (interchangeable) components
- Thomas Edison & Nicola Tesla
  - Distributed power
- Henry Ford
  - The assembly line



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A Comparison

Manufacturing	IT
The automation of manual tasks	The automation of intellectual tasks
Standard (interchangeable) components	No Standard (interchangeable) software parts
Distributed power	Distributed IT
The assembly line	No assembly line

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Applying Industrialization to Software

- How do we start to apply industrialization to software?
- How do the pieces fit together to create a new business orientation?

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The Keys

- Web services delivers the ability to connect "Interchangeable components" (at the right level of granularity)
- BPM delivers the production line
- SOA delivers the manufacturing plant and also the supply chain connections

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Why go to all this effort of industrialization?

To Enable Business executives to manage and change the business by leveraging IT assets

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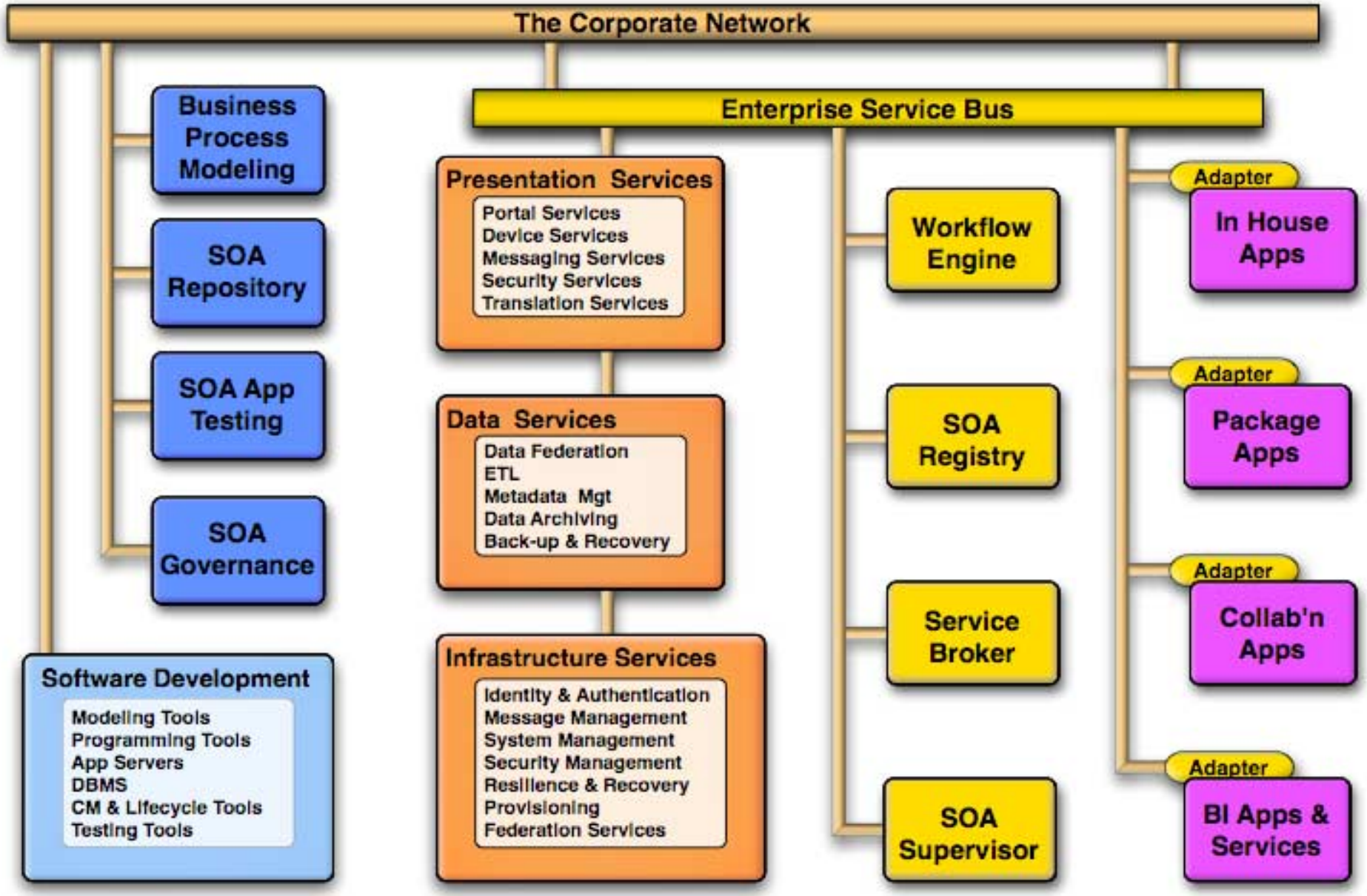
How to get there?

This goal demands extremely versatile software through business services and XML-based web services interfaces

The Service Oriented Architecture



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What is a Business Process?

- The Components of a Business Process
  - People
  - Software Applications
  - Adapters
  - Process flow management

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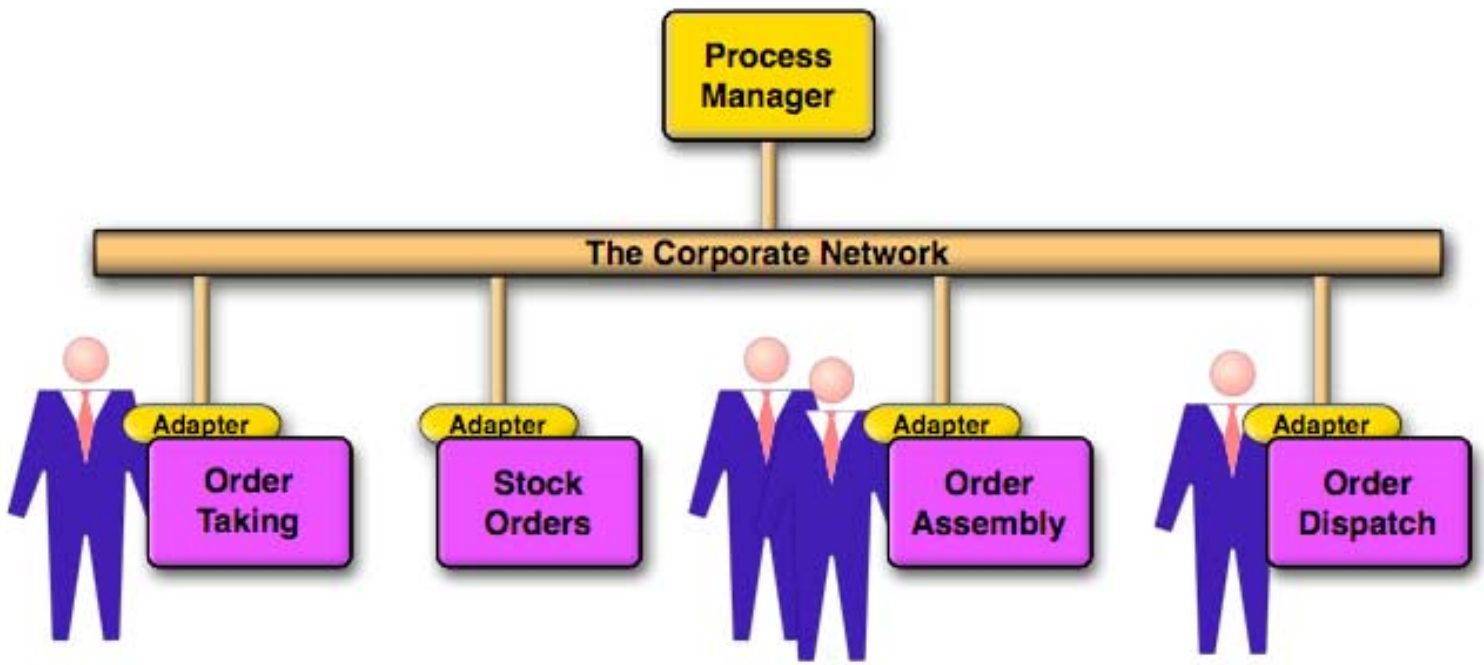
A Business Process



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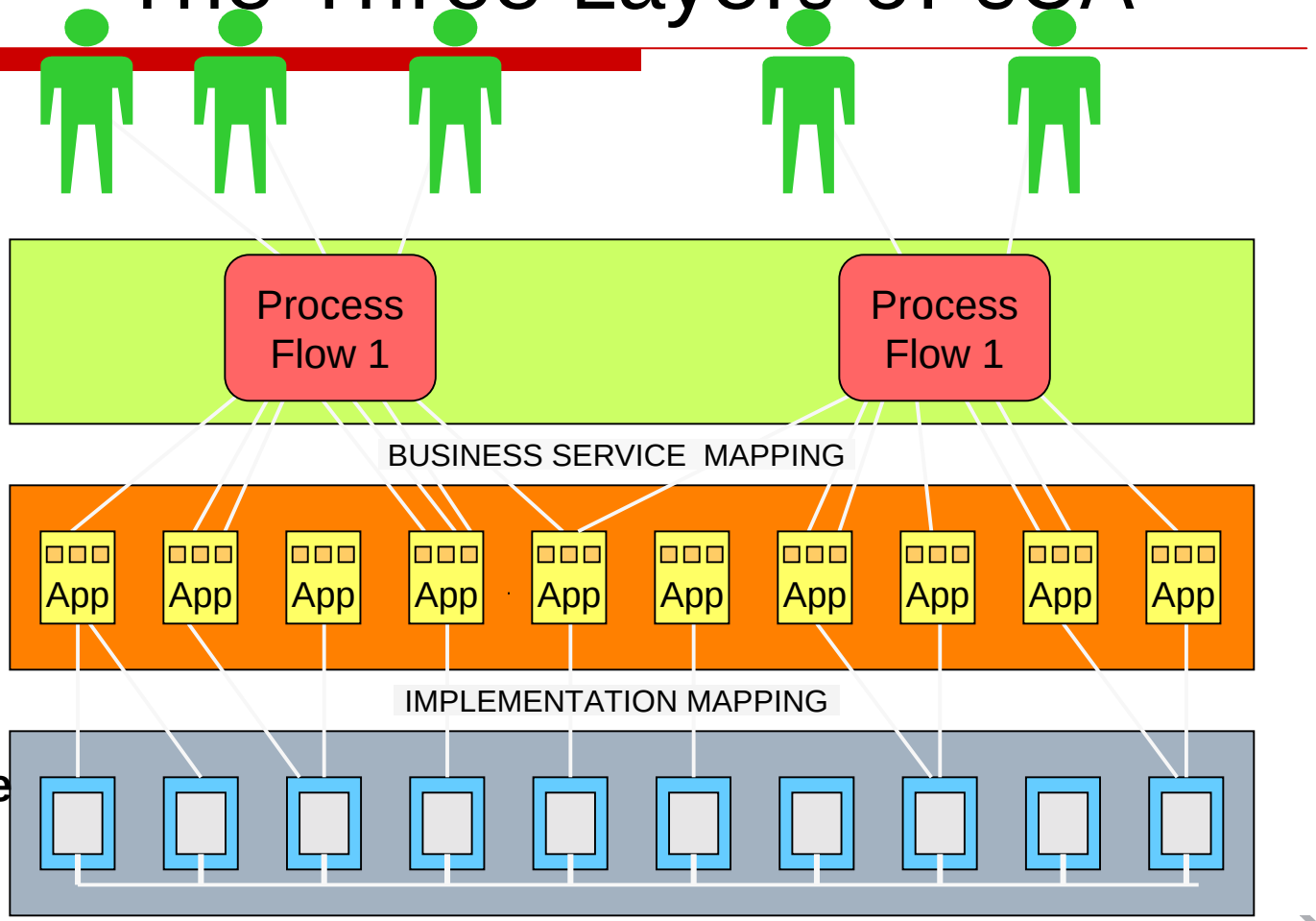
The Three Layers of SOA



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Web Services Definition

XML-based platform-independent standard to pass data and call processes within distributed systems

i.e. Screen scraping without screens

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How to get started?

- Get top level sponsorship
- Invest in a platform that is independent of implementation architectures
- Create a cross-functional business task force focused on the long term
- Plan from the top down with an upper management directive
- Develop a blueprint that is a long term model without dependencies on any one technology
- Build only what you can't buy
- Assume change will and should happen (only dying businesses are static)
- Build architectural models without stove pipes

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Important Principles

- Establish good governance principles
  - Who owns the business service?
  - Who signs off on a service?
  - Are there different versions of the same service?
  - Is the service certified in terms of logic and quality?

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SOA Market Trends and Observations

- Transforming the business leverage of information technology
- Line of business leaders are driving move to SOA
- SOA creates a common language for collaboration between business and technology leaders
- SOA is proving to be a pragmatic approach to leveraging investments in technology and best practices

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SOA Market Trends and Observations

- Increasing attention to determining the right definition of services so that it can be applied broadly across many parts of the organization
- Organizations are establishing best practices to allow them to find the level of granularity so that services are optimized for the business
- Security within a highly virtualized environment has become key customer demand
- Manageability of both business services and infrastructure is growing as foundation for SOA expansion

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The Strengths of SOA is Flexibility

- What are customers doing?
  - Encapsulate existing components as services that were linked together through an enterprise service bus to focus on faster customer satisfaction.
  - Creating a SOA governance model to establish clear guidance for working with business services across various departments.
  - Creating an innovative business process to ensure that it was able to innovate in light of a highly competitive market.
  - Adding a portal interface so that all sales representatives could access key information services about products offerings across divisions

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SOA is About Good Business & Technical Practice

- SOA is about understanding your business
- SOA is about creating a reusable set of services that mirror the business
- SOA is about being able to link the right pieces together at the right time to create competitive differentiation
- SOA is a journey that allows a flexible approach to incrementally adding both business and infrastructure components as the foundation for the future
- SOA is about a life cycle of business services supported by a scalable, secure, and manageable infrastructure

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Thank you!

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