

Growing a Secure & Managed SOA

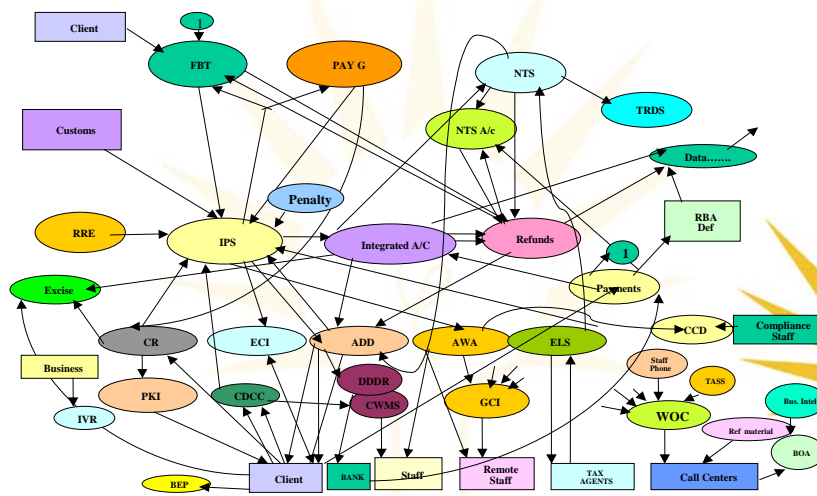
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The Challenge of Complexity...



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The Best Technology...

- Is complex on the inside yet simple on the outside



- The secret is the *abstraction layer*

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Level Set – What is SOA?

- SOA is *architecture* – a set of best practices for the organization and use of IT
- Abstracts software functionality as loosely-coupled, business-oriented *Services*
- Services can be composed into *business processes* (which are also *Services*) in a declarative manner



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SOA is Architecture!

- Remember...SOA is architecture – in particular, *Enterprise Architecture*, including:
 - An aggregated architecture of all the individual IT systems within an organization
 - The human element within the enterprise
 - Systems, people, and organizational constructs at other companies that have relationships with the enterprise
 - Individual consumers who are that enterprise's customers
 - Corporate governance

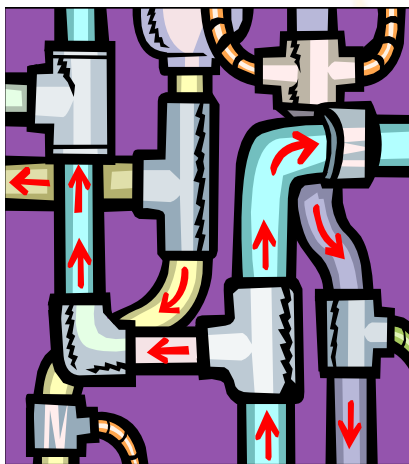


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SOA Abstracts the Plumbing



- The goal is reusable, composable business Services
- Many different approaches to implementation

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SOA: Force of Change

- SOA abstracts existing capabilities
 - *Breaks down existing application silos*
- SOA puts greater power into the hands of business users
 - *Requires tooling business users are comfortable with*
- SOA empowers IT governance
 - *Creating, communicating, and managing policies more important than ever*

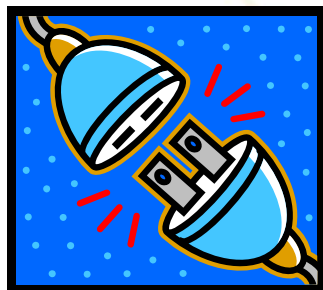


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The Secret Sauce: Loose Coupling



- The provider and consumer of a Service have specific, limited knowledge of each other as specified in a Service contract
- Loose coupling underlies the power of the Service abstraction
- Open standards enable loose coupling
- Loose Coupling is the key to the agility benefit of SOA

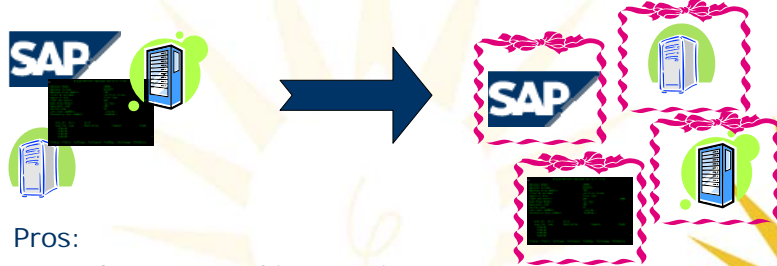
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Growing SOA: Bottom-Up

Put Service wrappers around existing applications



- Pros:
 - Reduces cost of integration
- Cons:
 - May not be reusable
 - May be redundant
 - Management challenges

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Growing SOA: Top-Down

Create architectural plan & detailed design

- Pros:
 - Agility, reuse, flexibility
- Cons:
 - May not be implementable
 - Difficult to budget



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Growing SOA the Right Way: Take an Iterative Approach

- Top-down only: have the plan, may not be able to execute
- Bottom-up only: build Services, may not be reusable
- SOA planning *must* be both
 - Develop the vision (but not the details) ahead of time
 - Service development should be iterative
 - Architecture should drive the infrastructure



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The Three Core SOA Infrastructure Challenges



Security



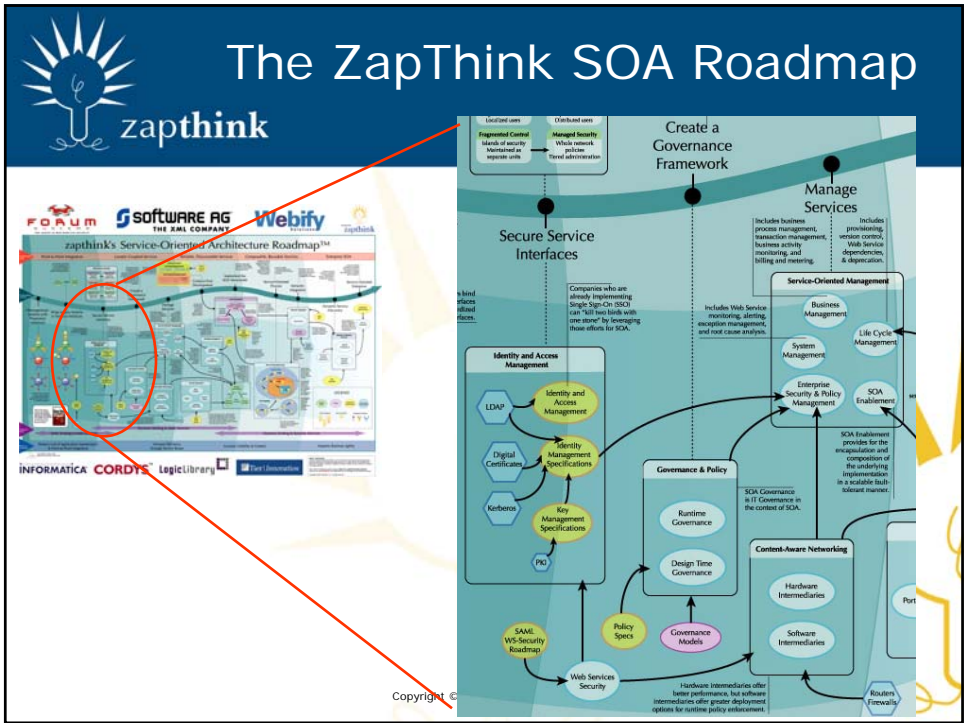
Governance



Management

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Juggling SOA Infrastructure

- Successful SOA requires several infrastructure elements
 - Challenges:
 - Priorities?
 - Budgets?
 - Identifying needs?
- Iterative architectural approach should drive infrastructure decision

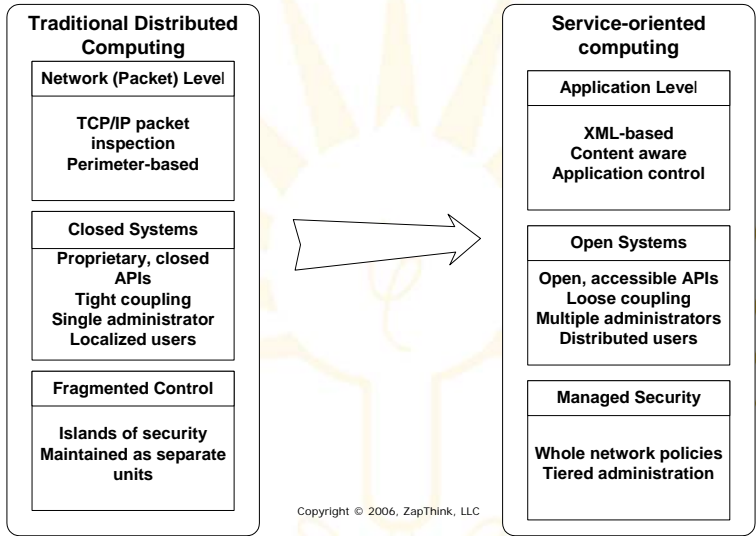
Illustration: A woman juggling balls labeled with SOA concepts: Security, Integration, Management, Governance, Process.

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First Roadblock: Security



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The "20 doors" problem

If your company has 20 doors, and you lock 19, are you 95% secure?

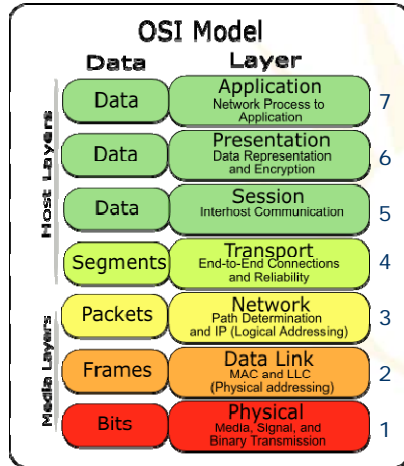


- Any Web Services security approach must be a part of a comprehensive enterprise security initiative

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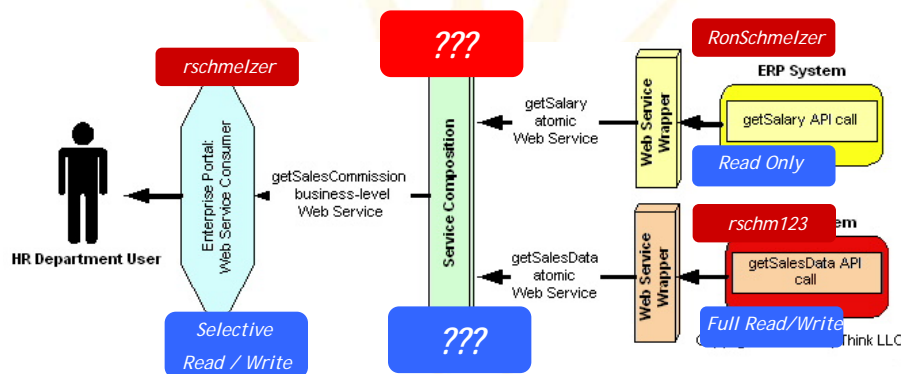
The OSI Stack Revisited



- Content Security, as well as
 - Semantics
 - Taxonomies
 - Policy
 - Schemas
 - ...

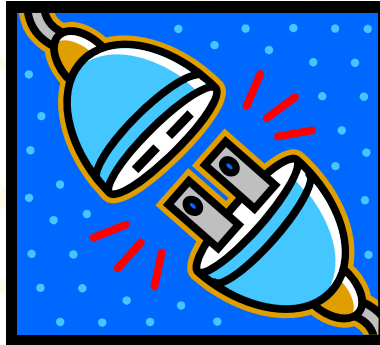
Traditional perimeter-based approaches wholly inadequate

The Security Context Challenge





Second SOA Challenge: Management



***Loose Coupling is a
MANAGEMENT Problem***

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Many Facets of SOA Management

- System management – identifying root causes of technical problems, mitigating or solving them
- Metadata management – storing, managing, and enabling the use of various metadata
- Business Service management – managing business Key Performance Indicators (KPIs) in the context of SOA

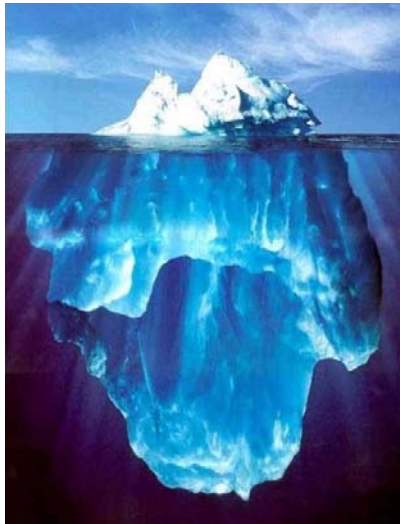


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The Problem with SOA Management...



- Managing Service interfaces & dependencies
- Application management
- Systems management
- Network management
- Root cause analysis
- Etc...

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The First Rule of SOA Management

- You need management when you offer your first "mission critical" Web Service
- Even one Service requires management
- Don't wait!



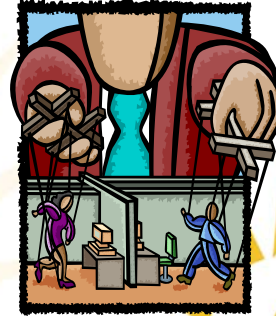
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Governance: SOA's Organizational Glue

- Establishing and communicating the policies that employees must follow
- Giving employees the tools they need to be compliant with those policies
- Providing visibility into the levels of compliance in the organization
- Mitigating any deviations from established policy



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SOA Governance: Applying SOA to Governance

- Policy management
 - SOA configured & controlled via metadata, including policy
- Visibility
 - Services abstract heterogeneous data sources, providing necessary business intelligence
- Flexibility
 - Ability to build Services that address compliance issues and adjust them as regulations or business needs change

***Not just governance of SOA...
governance in the context of SOA***

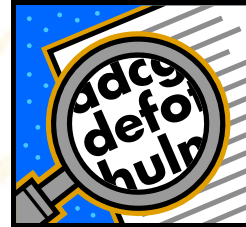
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Identifying Policies

- **Security Policies**
 - What levels of security are required?
 - Which roles have which privileges?
 - What information must be kept confidential?
- **Management Policies**
 - What guarantees of quality will Services provide?
 - How long should Services be available?
 - How reliable should Services be?
 - What happens when Services have problems?
- **Other Policies**
 - What are the transactionality requirements?
 - Does someone need to pay for this Service?
 - What level of auditing/logging of Services is needed?
 - Which languages should the Service support?



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Steps for Creating Policies

- **Policy inventory**
- **Decide on level of granularity**
 - Message-level policies/Data-driven policies
 - Corporate-level policies/Governance & Security policies
 - Service-level policies/Performance, Security, Mediation, Transports, Response time / QoS / SLA
- **Translate policy into system-understandable format**
 - Pick an XML-based standard method
 - Develop your own XML-based spec
 - Encode directly into policy enforcement system
- **Figure out how to enforce policies in practice**
 - Policy mediation system
 - Registry-based system
- **Identify long-term policy maintenance**
 - Federated or centralized policy management?
 - How is policy going to be controlled?

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Policy as Organizational Issue

- Remember, policies are *business* concepts
- Governance is the way the *business* communicates & manages policies
- SOA helps *automate* policy activities, but...

***SOA means changing how people work –
and such change is far more difficult than
technology change***

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Thank You!



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Read our new book,
Service Orient or Be Doomed! How Service Orientation Will Change Your Business.



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