



The Application Long Tail and your SOA & EA Skills

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Part I: The Long Tail

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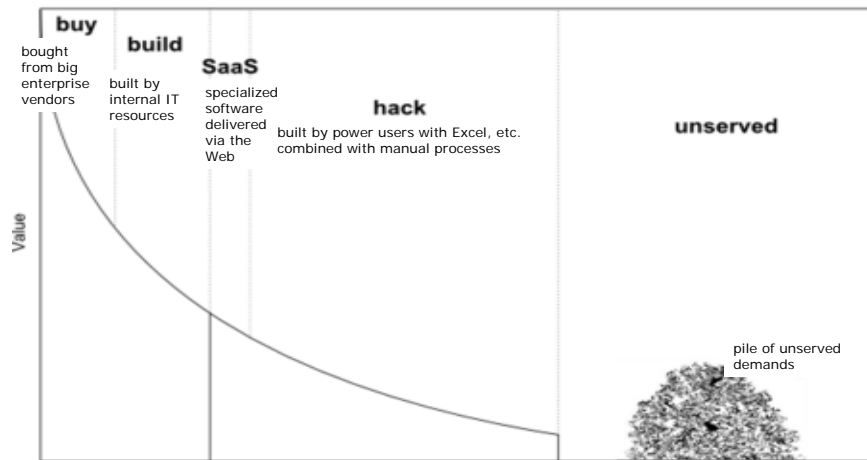
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The Long Tail: Applications

Current

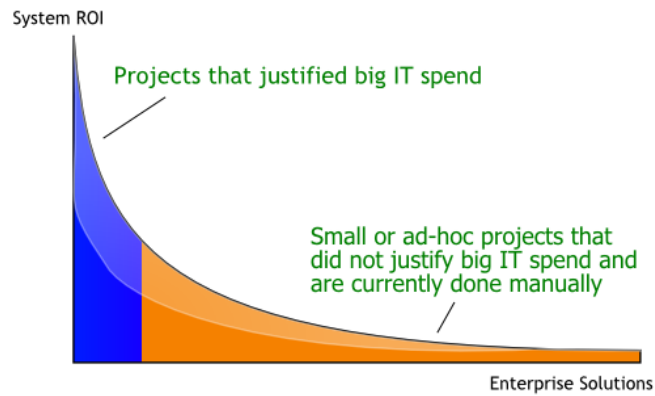


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Where's the Empowerment?



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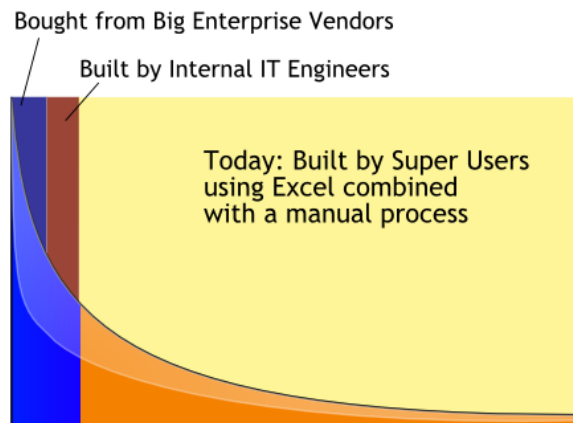
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Filling the Gap



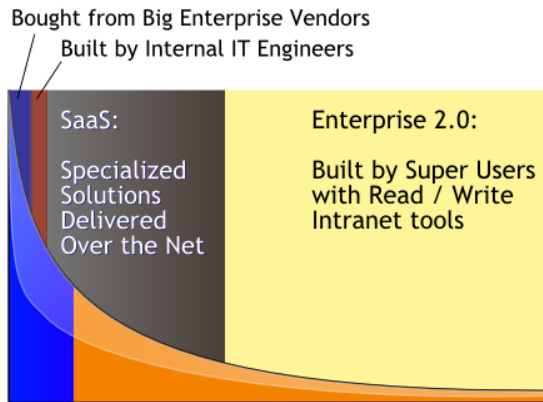
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Tomorrow's Opportunity?



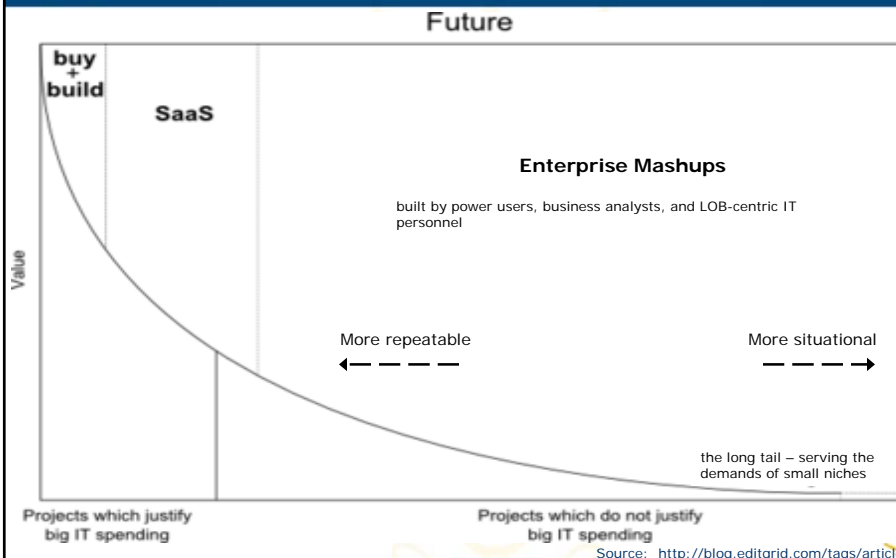
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The SOA Vision



Source: <http://blog.editgrid.com/tags/articles/ideas/>



Empowerment: Freedom and Power



Self Empowerment

- The Job of Business
 - Provide the context and resources to enable value creation and delivery
 - Without Business, there is no IT
- The Job of IT
 - Provide the resources and capabilities to enable business
 - Without IT, Business is made less effective and efficient

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Empower Business Users?

- Mashup = a flexible composition of Services within a rich user interface environment
- In essence, a Mashup is a SOBA interface
- Leveraging the Web to compose Services
- Without loose coupling & governance, will never be appropriate in an enterprise environment
- How to empower users in the spirit of the mashup, but maintain necessary control?

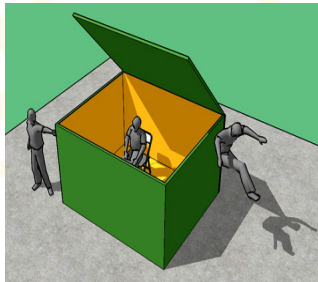


SOA & Governance keys to the "Enterprise Mashup"

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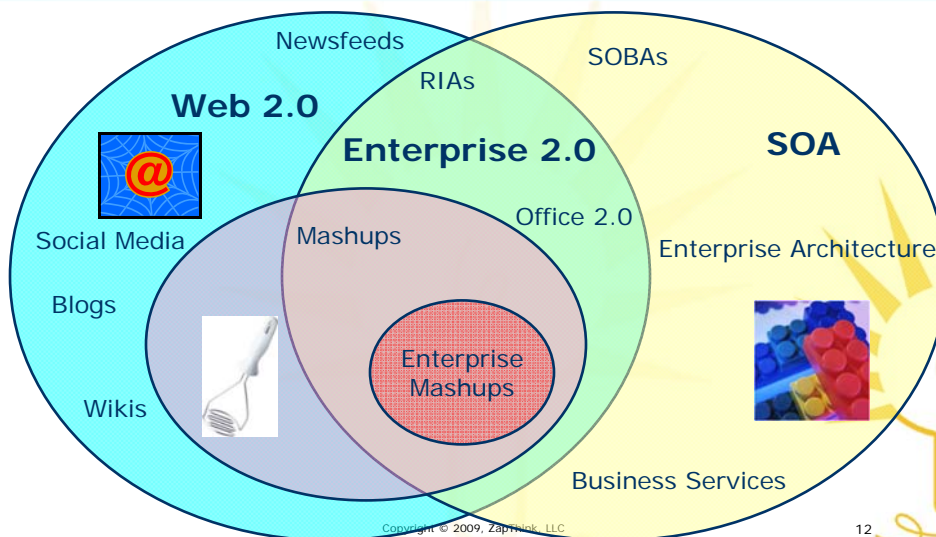
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What can we expect as SOA becomes ubiquitous?



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Part II: Your EA Skills

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Architecture is not About the Technology

Just as a building architect is more concerned with the space, not the walls, the IT architect is concerned with how people use the technology, not the technology itself



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Organizational Issues

- The greatest challenge of SOA
- Inertia in the organization: human change is tough!
- Makes the technology part look easy!



Common SOA Pitfalls

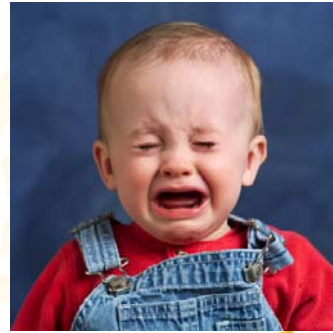
- Unclear business drivers
- Allowing a vendor to drive the initiative
- Confusing SOA and Web Services
- Too few qualified architects
- Lack of proper, early governance
- Unqualified consultants
- "Good money after bad" fallacy





SOA Growing Pains

- Does the business see the value?
- Are the architects working on the right problems?
- Is IT management investing properly?
- Are your Enterprise Architects on the same page?



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The Wrong Question!

SOA is great. How do I sell it to the business?

instead of...



Here are our problems. How best to solve them?

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The Problems with "VDA"

"Vendor-Driven Architecture"

- **Vendor "SOA Certification" Programs**
 - Always product-specific, not SOA-specific
- **Vendors who design & build your SOA**
 - Always start with their stack
- **"One stop shopping" for SOA**
 - Doesn't give you best practices



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SOA = Best Practices

- You don't have to follow them all
- There's no rule how many you must follow before you can say you're "doing SOA"
- Key best practice: take an iterative approach
 - Not just a SOA practice



The Right Tool for the Job

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Is there an Architect in the House?

- The new level of discipline required by architecture
 - A formal approach to organizing IT resources is still a relatively new practice
- Just how big is the big picture?
 - Architects must have an *enterprisewide* view
- Where are the architects?
 - It's hard to learn architecture at college – most learn on the job



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Hiring Architects

- SOA is on every techie resume now!
- The "Architect" title doesn't mean much
- Many different kinds of architects
- Skills vary widely between individuals
- Sometimes skills are organization-specific



"My resumé is not all lies!
My name is correct!"



EA Challenges: The Role of the EA



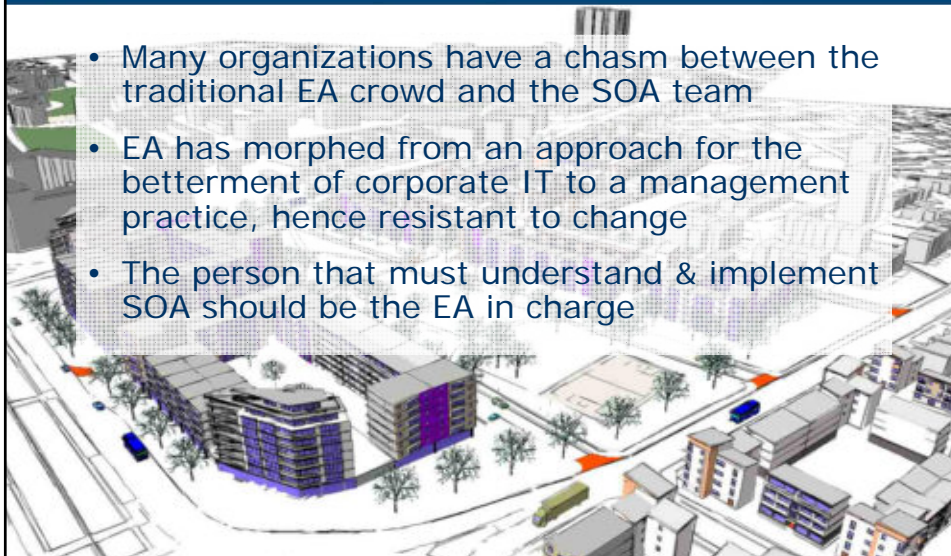
- Easier to stay high level than do actual work!
- Drawing diagrams, doing presentations, and writing reports is much easier than actually going out and making real changes with real benefits

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Enterprise Architecture Challenges



- Many organizations have a chasm between the traditional EA crowd and the SOA team
- EA has morphed from an approach for the betterment of corporate IT to a management practice, hence resistant to change
- The person that must understand & implement SOA should be the EA in charge



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Good Money after Bad...

- I spent money on a proprietary vendor solution, so now I need to make it work!
- We built inflexible EJB Services or .NET Services, so how do I make them flexible?
- We spent big money with that big consulting firm on our SOA initiative, but we don't have anything to show for it!



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Many Perspectives on SOA



- All views relevant & important
- Service-Oriented Architects must have all perspectives

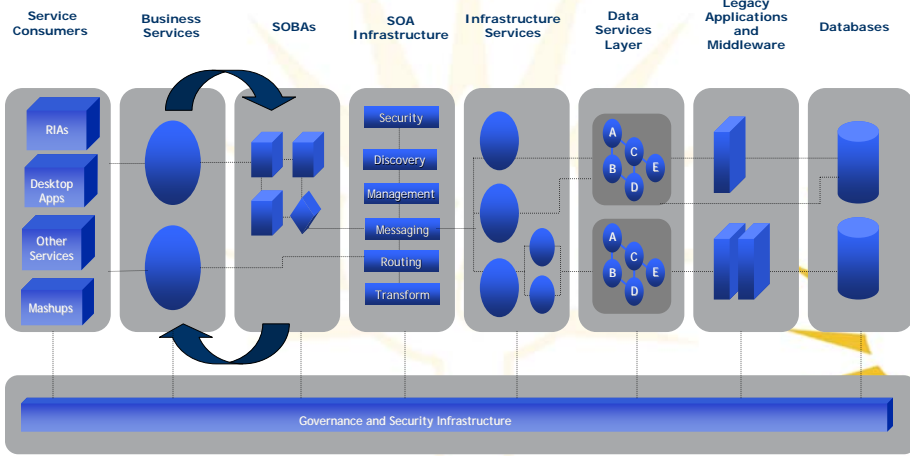
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SOA: A Technology View



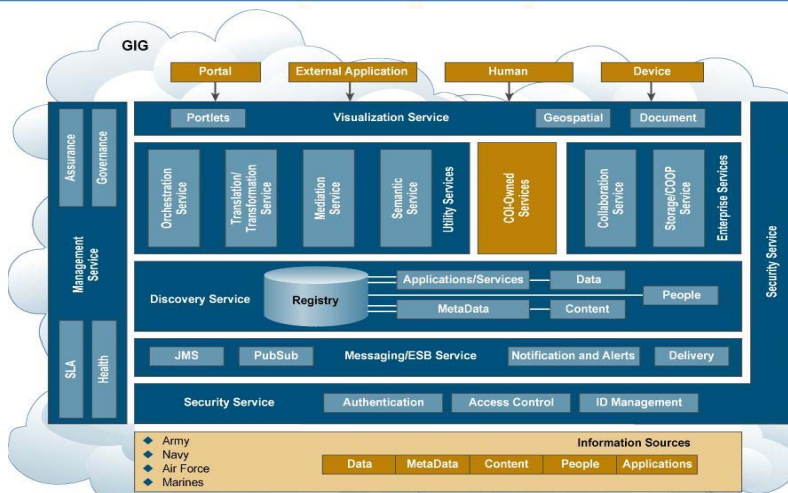
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SOA: Infrastructure Service View



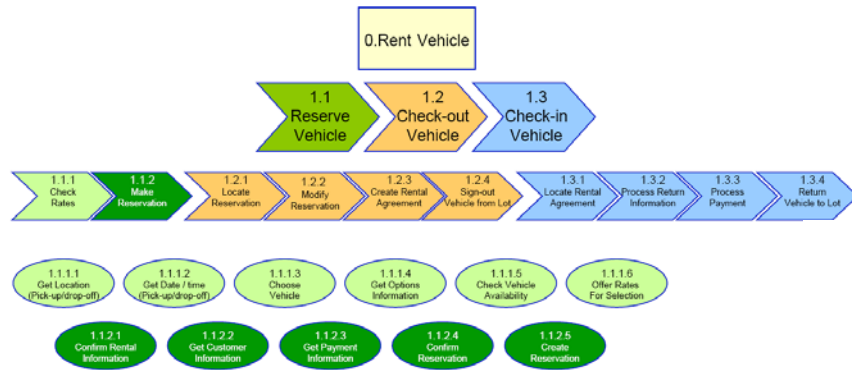
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SOA: A Business Service View



Source: IBM

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





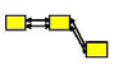
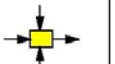
















SOA as Enterprise Architecture


- SOA best practices are IT and business best practices
- Service Orientation is a business concept
- Over time, practice of Enterprise Architecture becoming Service-oriented



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ENTERPRISE ARCHITECTURE - A FRAMEWORK™							
	DATA <i>What</i>	FUNCTION <i>How</i>	NETWORK <i>Where</i>	PEOPLE <i>Who</i>	TIME <i>When</i>	MOTIVATION <i>Why</i>	
SCOPE (CONTEXTUAL)	List of Things Important to the Business 	List of Processes the Business Performs 	List of Locations in which the Business Operates 	List of Organizational Units Important to the Business 	List of Events Significant to the Business 	List of Business Goals/Strat. Objectives/Policies 	SCOPE (CONTEXTUAL)
<i>Owner</i>	Entity = Class of Business Things	Function = Class of Business Processes	Node = Major Business Location	People = Major Organizations	Time = Major Business Events	Entity/Class=Major Bus. Goal/Strat. Objectives/Policies	<i>Owner</i>
ENTERPRISE MODEL (CONCEPTUAL)	e.g. Semantic Model 	e.g. Business Process Model 	e.g. Logistics Network 	e.g. Work Flow Model 	e.g. Master Scheduling 	e.g. Business Plan 	ENTERPRISE MODEL (CONCEPTUAL)
<i>Owner</i>	Ent = Business Entity Rel = Business Relationship	Proc = Business Process IO = Business Resource	Node = Business Location Link = Business Linkage	People = Organization Unit Work = Work Product	Time = Business Event Cycle = Business Cycle	Ent = Business Objective Means = Business Strategy	<i>Owner</i>
SYSTEM MODEL (LOGICAL)	e.g. Logical Data Model 	e.g. "Application Architecture" 	e.g. "Technical System Architecture" 	e.g. Human Interface Architecture 	e.g. Processing Structure 	e.g. Business Rule Model 	SYSTEM MODEL (LOGICAL)
<i>Designer</i>	Ent = Data Entity Rel = Data Relationship	Proc = Application Function IO = User Views	Node = I/O Function (Processor/Storage) etc. Link = Link Characteristics	People = Role Work = Deliverable	Time = System Event Cycle = System Cycle	Ent = Structural Assertion Means = Action Assertion	<i>Designer</i>
TECHNOLOGY MODEL (PHYSICAL)	e.g. Physical Data Model 	e.g. "System Design" 	e.g. "System Architecture" 	e.g. Presentation Architecture 	e.g. Control Structure 	e.g. Rule Design 	TECHNOLOGY MODEL (PHYSICAL)
<i>Builder</i>	Ent = Organism/Table/etc. Rel = Pointer/Key/etc.	Proc = Computer Function IO = Screen/Device Format	Node = Hardware/System/Software Link = Line Specifications	People = User Work = Screen Format	Time = Execution Cycle = Component Cycle	Ent = Condition Means = Action	<i>Builder</i>
DETAILED REPRESENTATIONS (OUT-OF-CONTEXT)	e.g. Data Definition 	e.g. "Program" 	e.g. "Network Architecture" 	e.g. Security Architecture 	e.g. Timing Definition 	e.g. Rule Specification 	DETAILED REPRESENTATIONS (OUT-OF-CONTEXT)
<i>Sub-Contractor</i>	Ent = Field Rel = Address	Proc = Language Stmt IO = Control Mode	Node = Address Link = Protocol	People = Identity Work = Job	Time = Interrupt Cycle = Business Cycle	Ent = Sub-condition Means = Step	<i>Sub-Contractor</i>
FUNCTIONING ENTERPRISE	e.g. DATA	e.g. PRODUCTION	e.g. NETWORK	e.g. ORGANIZATION	e.g. SCHEDULE	e.g. STRATEGY	FUNCTIONING ENTERPRISE



Pros & Cons of Zachman

- Pros:
 - Comprehensive view of the enterprise
 - Covers both business & technology
 - Relates different perspectives to each other
- Cons:
 - Not prescriptive: doesn't tell you what to do
 - No priority ordering of models
 - Too ambitious
 - Too abstract

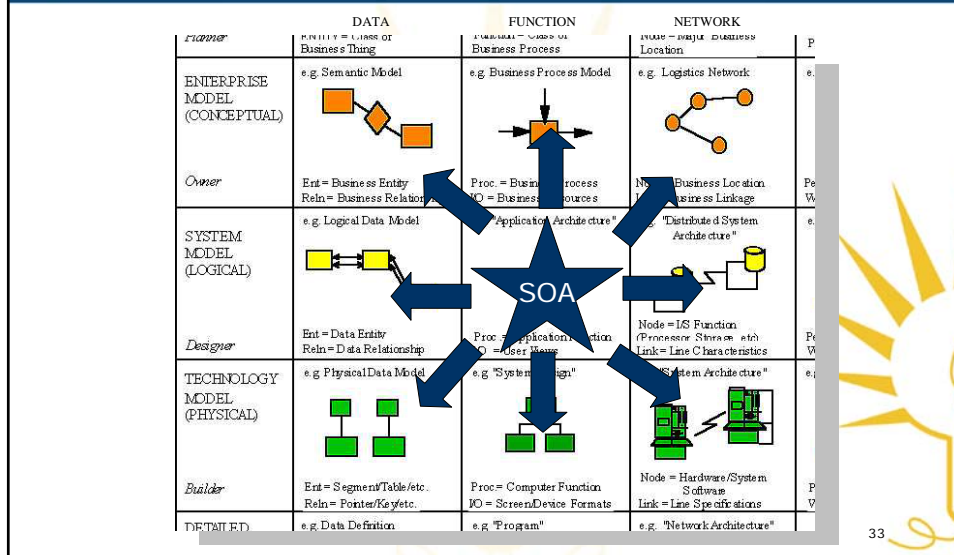


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SOA & Zachman



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SOA & Zachman (cont.)



	DATA <i>What</i>	FUNCTION <i>How</i>	NETWORK <i>Where</i>	PEOPLE <i>Who</i>	TIME <i>When</i>	MOTIVATION <i>Why</i>	
SCOPE (CONTEXTUAL) <i>Flavor</i>	Business Entities	SOBAs	The Internet	The Organization	Service Lifecycle	Business Strategy	SCOPE (CONTEXTUAL) <i>Flavor</i>
ENTERPRISE MODEL (CONCEPTUAL) <i>Owner</i>	Semantic Model	Process Model	Service Network	Users	Iterative Approach	Governance Framework	ENTERPRISE MODEL (CONCEPTUAL) <i>Owner</i>
SYSTEM MODEL (LOGICAL) <i>Designer</i>	Logical Data Model	Service Model	Service Infra- structure	Service Consumers	Business Events	Policies	SYSTEM MODEL (LOGICAL) <i>Designer</i>
TECHNOLOGY MODEL (PHYSICAL) <i>Builder</i>	Physical Data Model	Component Architecture	System Architecture	Service Requests	Software Events	Rules	TECHNOLOGY CONSTRAINED MODEL (PHYSICAL) <i>Builder</i>
DETAILED REPRESENTATIONS (OUT-OF- CONTEXT) <i>Sub- Contractor</i>	Schemas	Service Imple- mentations	Network Nodes	Identities	Messages	Assertions	DETAILED REPRESENTATIONS (OUT-OF- CONTEXT) <i>Sub- Contractor</i>



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How Do You Eat an Elephant?

- *One bite at a time!*
- Don't expect to have all the answers on day one
- Take a step-by-step approach, but...
 - 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
- Show business value at each step



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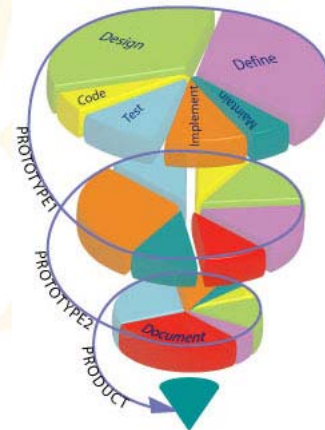
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Iterative: More than Step-by-Step

- Each iteration bounded by time, money, or scope
- Each iteration is a full project
- Improvements made to any part of earlier iterations in future iterations



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Iterate your Architecture?

- Your architecture should be implementation-independent so that it can remain stable as technology changes
- Your architecture should also be business process-independent so that it can remain stable as the business changes
- Because SOA is still emerging, best to take an iterative approach to the architecture, as well as to its implementation
- Architecture should stabilize over time, while Services will continue to change



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SOA Models

- Begin with implementation models that exist within your problem domain or enterprise
 - Information
 - Data
 - Semantics
 - Network
 - Components
 - Policies
 - Other attributes



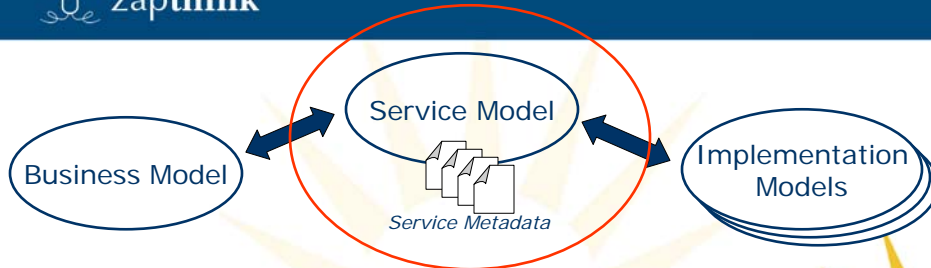
SOA leverages existing technology, so you can typically use existing implementation models

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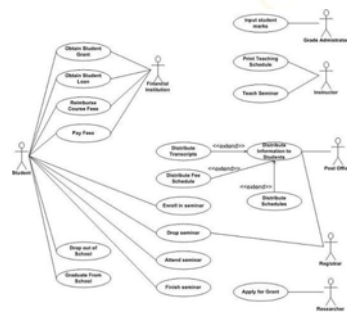
Building the Service Model



- The Service Model is the core abstraction for SOA
- The Service Model is actualized with Service contracts and other Service metadata
- The Service Model is a *runtime model* as well as a design time model



Beyond Use Cases

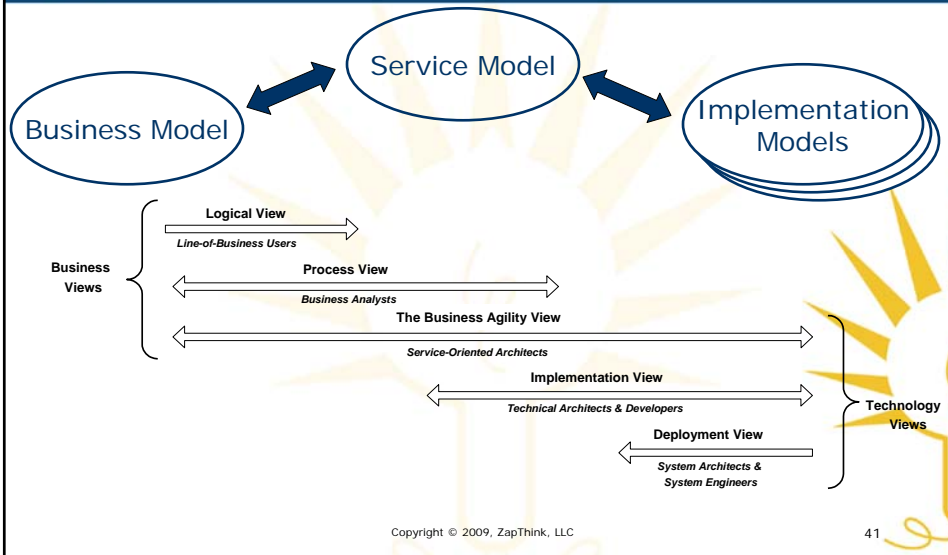


- Use cases describe current business requirements
- SOA must also address the *business agility* requirement
- The requirement that requirements should change!

The "meta-requirement" of agility



The 4+1 View Model & The SOA Metamodel



How does SOA help Build Agility?



- Supporting flexible Services and processes over time
- Formalizing the approach to governance
- Providing better visibility into process change

Appropriate in good times & bad



The Agility Model

Agility Model "Heat Map"

	Rigid	Minimal Variability	Balanced Variability	Highly Variable
Implementation Variability	Red	Orange	Yellow	Green
Infrastructure Variability	Red	Orange	Yellow	Green
Contract Variability	Red	Orange	Yellow	Green
Policy Variability	Red	Orange	Yellow	Green
Process Variability	Red	Orange	Yellow	Green
Schema Variability	Red	Orange	Yellow	Green
Semantic Variability	Red	Orange	Yellow	Green

- Determine desired variability / cost balance for each agility attribute
- Include variability in the SOA design
- Measure resulting agility
- Provide traceability to business agility requirement

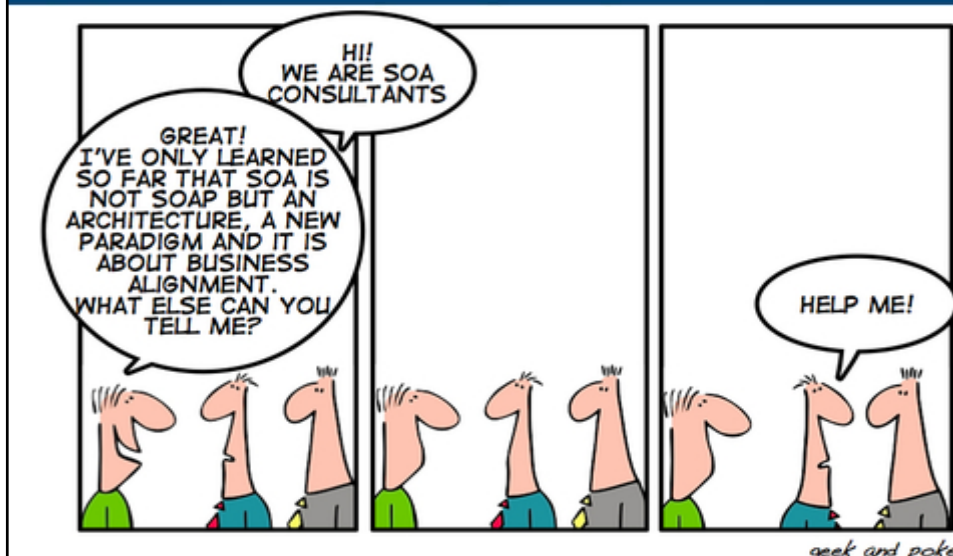


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Are "SOA" Consultants Qualified?





ZapThink is an industry analysis firm focused exclusively on Service-Oriented Architecture.



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