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FAIRMONT SCOTTSDALE PRINCESS, SCOTTSDALE, ARIZONA
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**U.S. FINANCIAL INSTITUTION SYSTEMS TRENDS - SERVICES ORIENTED
ARCHITECTURE**

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Services Oriented Architecture: its business value and a practical approach to measurement



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IBM Global Business Services



Agenda

➤ Market forces set the stage

A layman's description of SOA

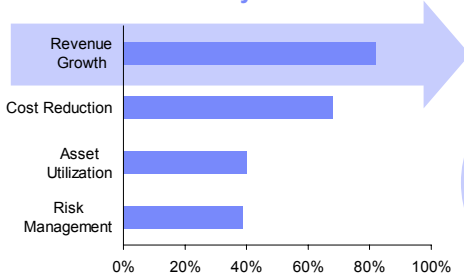
Measuring business value: an approach for measurement

Start small, start focused, start now...

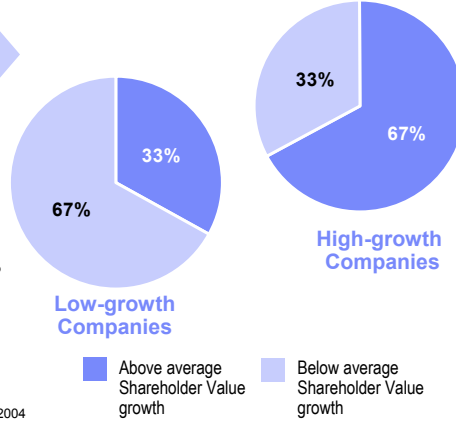


CEOs are focused on revenue growth as the means to create shareholder value...

CEO's key focus for strengthening financial performance over the next three years



Above average growth doubles the odds of creating high shareholder value



Source: "IBM Business Consulting Services The Global CEO Study" 2006, 2004



Market forces

... And, many believe that innovation is key to creating sustainable revenue growth

Methods to Achieve Revenue Growth

Organic

Organic methods provide necessary but incremental growth

Acquisitions

Acquisitions have historically failed to create value

Innovation

Innovation is the best opportunity for sustainable growth



"Innovation has become the industrial religion of the 20th century. Business sees it as the key to increasing profits and market share and governments reach for it when trying to fix the economy. It is the new theology. . ."

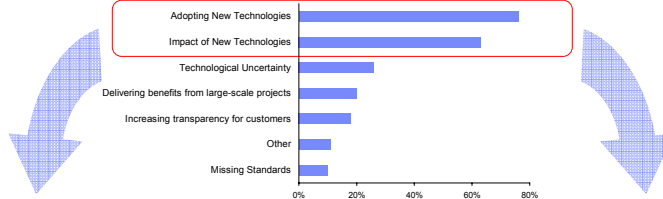
- Gregory Daines, Cambridge University



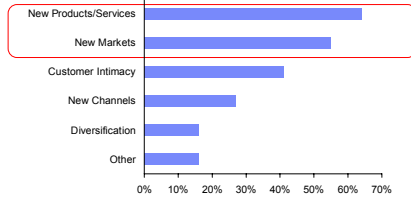
Market forces

Technology is a critical enabler to support innovation and the profit growth that it facilitates

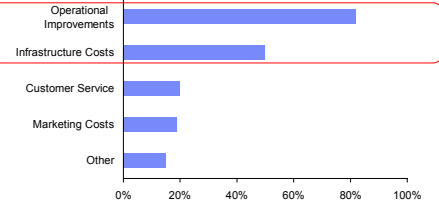
Which of the following technology factors will have the greatest impact on your business in the next three years?



Which of the following areas offer your organization the greatest opportunity for revenue growth in the next three years?



Which of the following areas offer your organization the greatest opportunity for cost reduction in the next three years?



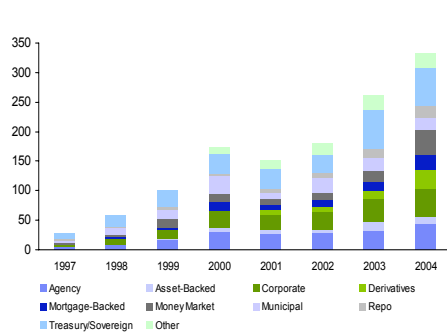
Source: "IBM Business Consulting Services The Global CEO Study" 2004



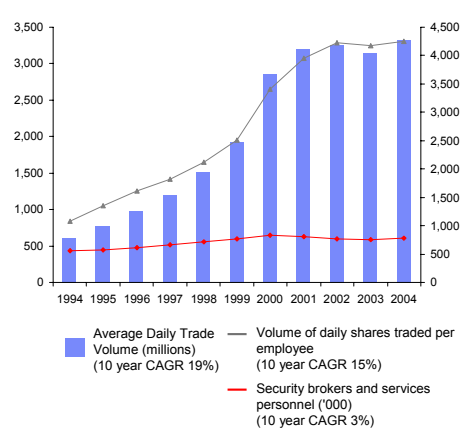
Market forces

When trying to quantify "technology" in your industry, let's just examine trading systems and trade volumes

Number of US and European Electronic Trading Systems¹, 1997-2004
(Number of Electronic Trading Systems by Type of Market Supported)



Average Daily Trade Volumes vs. Headcount, 1994-2004
(Millions of Shares; Number of Employees ('000), Volume per Employee)



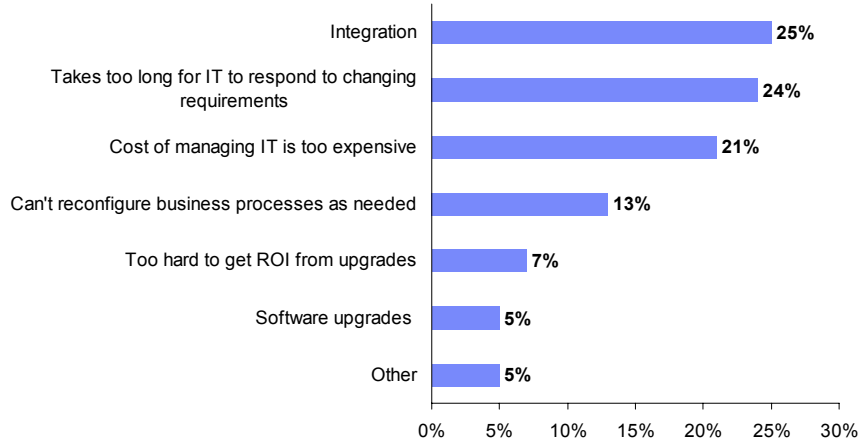
Note: ¹Totals may exceed the actual number of systems listed since some systems cover multiple product lines
Source: The Bond Market Association; Reuters; SIA; IBM Institute for Business Value analysis



Market forces

...but current IT systems are seen as an inhibitor for enabling that change...

Top Challenges in Managing IT



Source: AMR Research, 2005

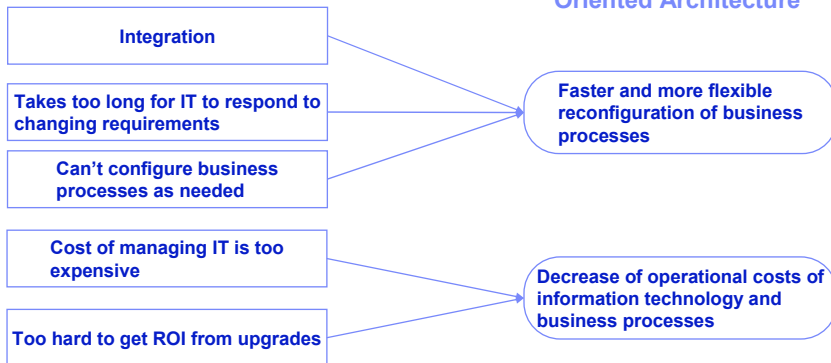


Market forces

Analysts suggest that Services Oriented Architecture will be a key tool for enabling change and alignment between business and IT

Top Challenges in Managing IT

Top Expected Benefits of Services Oriented Architecture



SOA is a strategy for designing software that helps eliminate the distinction between business processes and the technologies that enable them.

Source: AMR Research, 2005

Agenda

Market forces set the stage

--❖ A layman's description of SOA

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Start small, start focused, start now...

A layman's description

A Services Oriented Architecture (SOA) allows you to expose key IT capabilities and make them available in new ways

SOA Definition

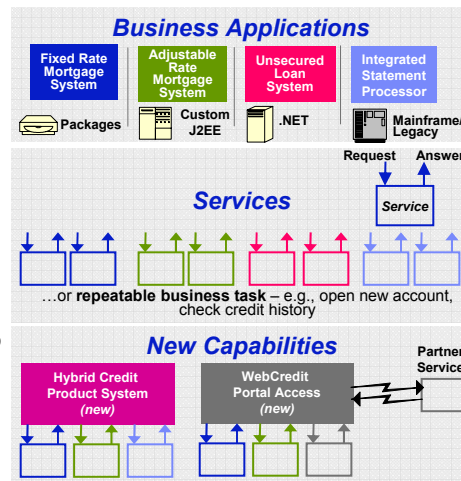
A **service-oriented architecture (SOA)** is an architectural framework that takes business applications...

...and breaks them down into **services**...

...that can be made available for use **independent of the applications** and the computing platforms on which they run.

These services can be integrated and used to build **new capabilities**...

...supporting **new functionality** from within your current portfolio or from your extended value chain.



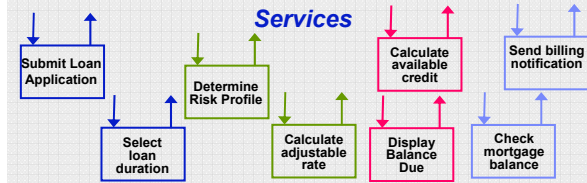
A layman's description

Example: A mortgage bank uses SOA to build a new hybrid credit product and a web portal as a new channel

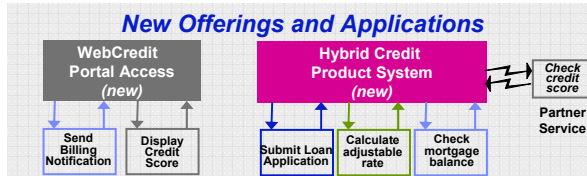
A bank has multiple systems for its various mortgage products and processes



These systems can be broken down to expose the basic services they perform, such as submitting a loan application and calculating interest rates



The services can be re-arranged to offer **new** products, such as a hybrid credit product that combines features of a fixed and adjustable mortgage, and a web portal that offers access to all credit products



A layman's description

There are two forces behind SOA that differentiate it from previous architectural approaches

1. Maturing **technology standards (web services) are the game changing aspect** that allow for a new level of interaction and provide for a common standard that supports:
 - New component development
 - Transformation and integration of existing applications
 - Package integration
2. A new paradigm shift **designing software as linked services** changes the way software is designed and developed
 - Software developed and integrated by linking defined services
 - Services exposed from your existing, company portfolio of applications
 - Services exposed from new applications you are building
 - Services exposed from your partners systems or systems in your value chain
 - Called **services orientation**, this thinking enables a tighter alignment of business and technology.



Businesses are experiencing tremendous benefits as they put SOA into practice, such as increased revenues, decreased costs, and enhanced flexibility

Agenda

Market forces set the stage

A layman's description of SOA

❖ Measuring business value: an approach for measurement

Start small, start focused, start now...

When examining technology for business value, Return on Investment (ROI) is often sought to measure value

- But measuring return for IT solutions is notoriously difficult, and difficulty increases when
 - Implementations cross internal organization boundaries, but budgets do not
 - Solutions include external partners
 - Inadequate controls exist to measure returns
 - Returns are dependent upon external parties, or performance measured elsewhere
- According to Business Week,
 - Just 30% measure ROI on innovation investments ¹
 - Most companies “guess” technology ROI ²
- Intel's CIO was quoted that “Focus on ROI is too limiting...” ³
 - “...It is not always easy to predict how you would even do an ROI analysis...”
 - “...You could spend a year figuring out ROI, and then you may have wasted a year...”
- But we still have to measure...

¹ The World's Most Innovative Companies, Business Week, April 24, 2006.

² Most companies “Guess” Tech ROI, Business Week online, <http://www.businessweek.com>, May 24, 2006.

³ Focus on ROI Too Limiting, Intel CIO Says, ComputerWorld Mobile/Wireless, <http://www.computerworld.com>, May 29, 2006.

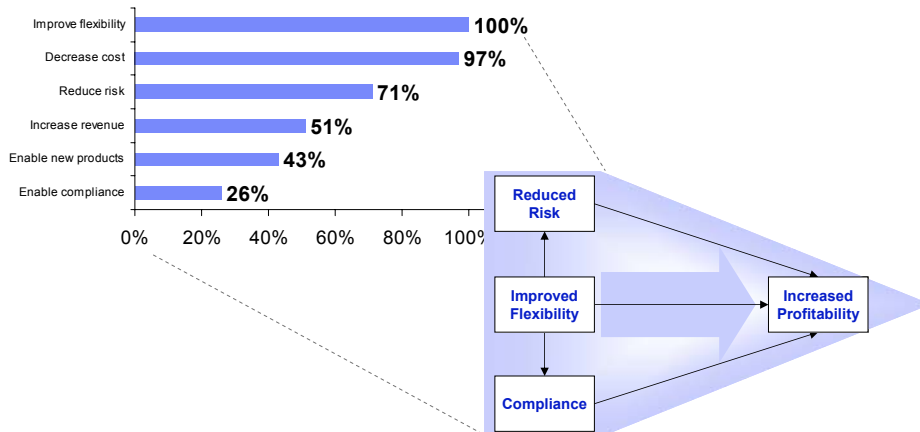
We present this framework for understanding the simple return on investment for SOA

Guiding principles for applying the framework

- Contained benefit selection from a simplified benefits value tree
- Cost measurement structured around three basic cost scenarios
- Calculate simple return using above benefit and cost
- Select cost scenarios for second and subsequent implementations
- Keeping benefits constant, look at return for second and subsequent implementations relative to the first implementation

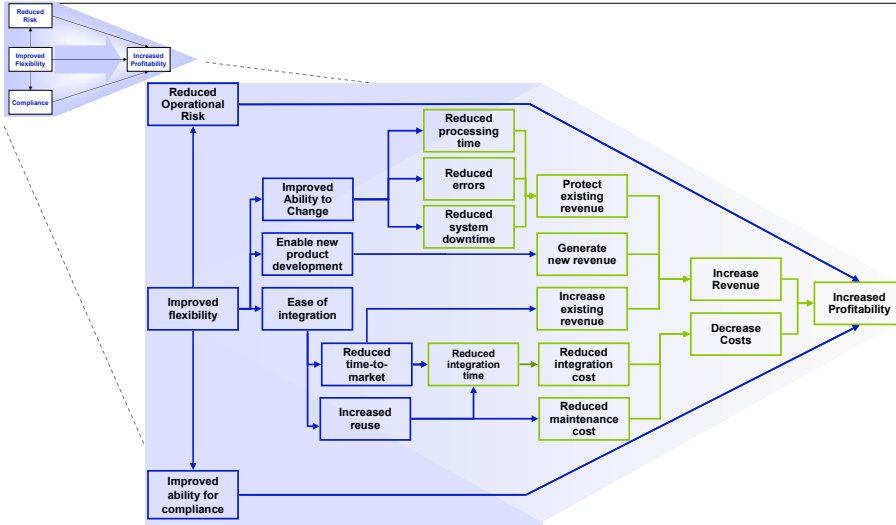
We took the benefits observed on real projects and structured them to flow to direct, measurable profitability impact

Benefits Resulting from SOA Solution



Source: IBV analysis

We expanded this view and identified the benefit value trees at a lower level of detail



To gain these benefits, you will incur costs in one of the following patterns

Full implementation

Service User



Service Provider



Scope A: Service user

Change or build Front-end application \$A

Scope B: Service provider

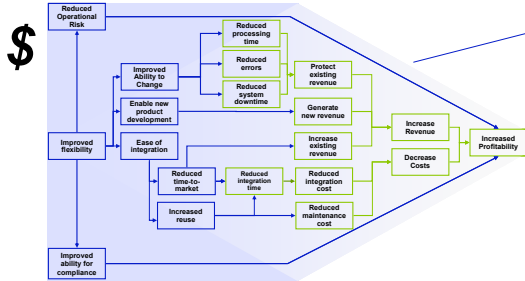
| | | | |
|-----------------------------|-------------|---|-------------|
| Infrastructure software | \$ | | |
| Hardware (as needed) | \$ | Develop new or alter existing application | \$ |
| Implementation (labor) | \$ | Generate interfaces | \$ |
| Total infrastructure | \$B1 | Total Service Provider | \$B2 |

Scope C: Scope A + Scope B

• Your costs

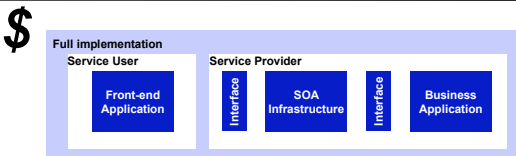
- \$A only For those using services already available (only 9% will be this fortunate today. Expect this to change!)
- \$B (\$B1 + \$B2) For those providing services for partners, or customers, to use
- \$C = \$A + \$B For those building and using the services built and providing the Front-end application

Taking the business value trees and the cost scenarios, it becomes easy to show how a simple return can be calculated



Benefits can be selected from the value tree that are specific to SOA

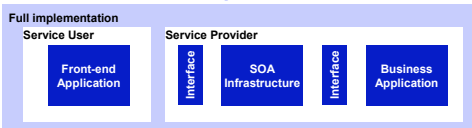
Your return on investment can be determined that is specific to your incremental investment in SOA



You will likely incur cost aligned with one of the three cost scenarios observed

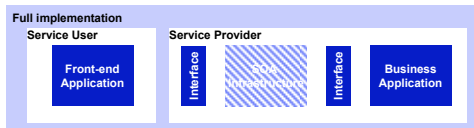
After the first implementation, subsequent implementations require less build and spend

First Implementation



\$\$\$ The first implementation will bear the burden of the infrastructure cost.

Second & Subsequent Implementations



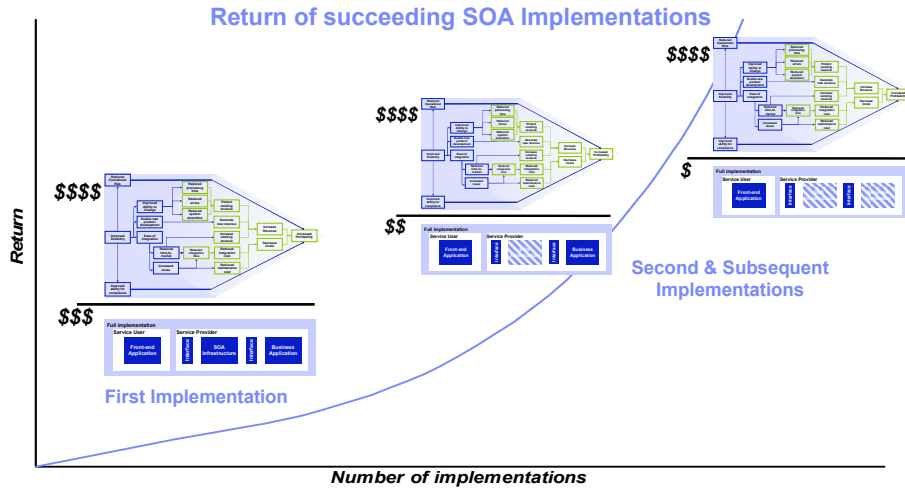
\$\$ When building new back-end functions to provide "Services" – reusing the infrastructure for a lower total cost.

or



\$ When exposing services from existing back-end applications to provide "Services" – an even lower cost to implement...

As you continue to implement SOA, the cost of implementation decreases and the return increases



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Market forces set the stage

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➡ **Start small, start focused, start now...**

The initial SOA implementations demonstrate some ideal guiding principles for other first implementations

Guiding Principles for your first SOA project

- Focus on a real business problem, not SOA
- If possible, start with revenue-generating applications
- Start small
- Start building capabilities
- Think long term

With these principles, we can simplify getting started into three options:

1. Build it
2. Buy it
3. Evolve to it

The business benefits of SOA combined with future potential far outweigh the costs of SOA

- Significant business value can result from well-managed SOA solutions
 - SOA business value outweighs the problems and challenges
 - *Measure, but simplify and measure long term!*
- A sea-change for system communication and collaboration will drive equal change in business processes
 - Industry structure change is inevitable
 - Collaboration within and between industry players will increase
 - *Table stakes!*
- The true power of SOA is in using the new capabilities it provides to enable innovation and improve collaboration
 - To create new business models
 - To improve business operations
 - To design and deploy new products

Faster.
More durable.
More profitable!



Contact information

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IBM Institute for Business Value

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