



| WebSphere Live for SOA

SOA Flexibility in Action

April 06, 2006

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| *SOA on your terms and our expertise*





Insurance on-demand

Billy Mill, Thursday, March 13, 2003 Page 38

Black box in the car

By Sean Poulter
Consumer Affairs Correspondent

Hi-tech check on where you drive will decide how much insurance you pay

HOW THE BLACK BOX WORKS

- 1** Black box - slightly smaller than a VHS cassette. It sits either under dashboard or in boot. Contains computer and two transmitters.
- 2** Computer records details of the trip: Time of day, duration, mileage, roads used. Could provide speed details in the future.
- 3** Signals from black box bounced off Global Positioning Satellite to provide journey details which are stored in the computer.
- 4** Details of journeys transmitted at least once a month - possibly daily - to Norwich Union office in Norwich via Orange mobile phone mast network.

POSSIBLE EXTRAS

- If you get lost:** Driver contacts Norwich Union call centre who will advise location and provide directions to destination.
- In a breakdown:** Company has launched breakdown service and will guide mechanic to the location of the vehicle.
- In case of accident:** Call centre alerted if car airbags triggered. Will be able to assess severity of impact and send out ambulance or fire engine.

WITH insurance charges steadily rising, an aircraft-style "black box" is being fitted in cars in an experimental pay-as-you-drive scheme.

It means motorists' premiums will be based on where and when they drive - with the hi-tech device charting the details of journeys and beaming signals to a global positioning satellite orbiting the Earth.

The information is then sent via the mobile phone system to the insurance firm, which calculates a bill. This will be based on the time spent on the road and whether the driver has used accident blackspots, city centres or rural roads.

The system will award lower premiums to drivers who use their cars sparingly, avoid roads prone to accidents and stick to safe roads.

The scheme is to be trialled this summer by Norwich's Norwich Union. It will be used by 5,000 motorists.

Robert Lodge, the firm's Pay As You Drive programme director, said: "We believe this is a month before we'll be paying for insurance."

"We get a lot of criticism from motorists who say they have not had a crash, yet they are being charged more."

"This technology releases personal driving records much more closely to the premium charged."

The technology also automatically sets out the emergency alarm to the event of a crash, guides breakdown trucks and provides directions to drivers who get lost.

However, the system, which already operates in part of the U.K., may raise "big brother" fears because it could allow a motorist's movements to be monitored.

In the event of a crash, it could provide two clues on timing, or indicate whether a driver has stopped at a job.

The same sort of technology - if built into all cars - could also be used by the Government at some point as part of a U.K.-wide congestion-charging scheme.

Norwich Union, which is part of Aviva, envisages fitting motorists for their insurance cover on a regular basis, and will offer them a way to reduce the cost.

The insurer has been developing the policy in conjunction with Information Link

future, the technology could be used into all the electronics of the car.

"It could then tell you the split second that a crash has happened and whether there is a fire or rear impact."

"It might tell you the speed and the severity of the impact. That could allow someone at Norwich Union to sort an ambulance or a fire engine which would send help much more quickly than at the moment."

Asked about big brother fears, Mr Lodge said: "This is not compulsory - if customers don't like it, they don't have to have it."

"We accept that this will not



The power of data

Pepper . . . and Salt

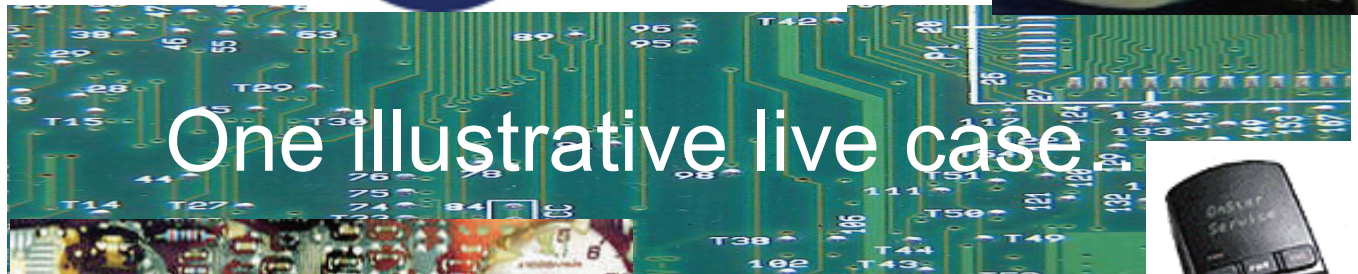
THE WALL STREET JOURNAL



“Well, I see you still owe \$7,382
on this one”



OnStar



One illustrative live case



Log onto your new car



HOW CAN WE HELP YOU.

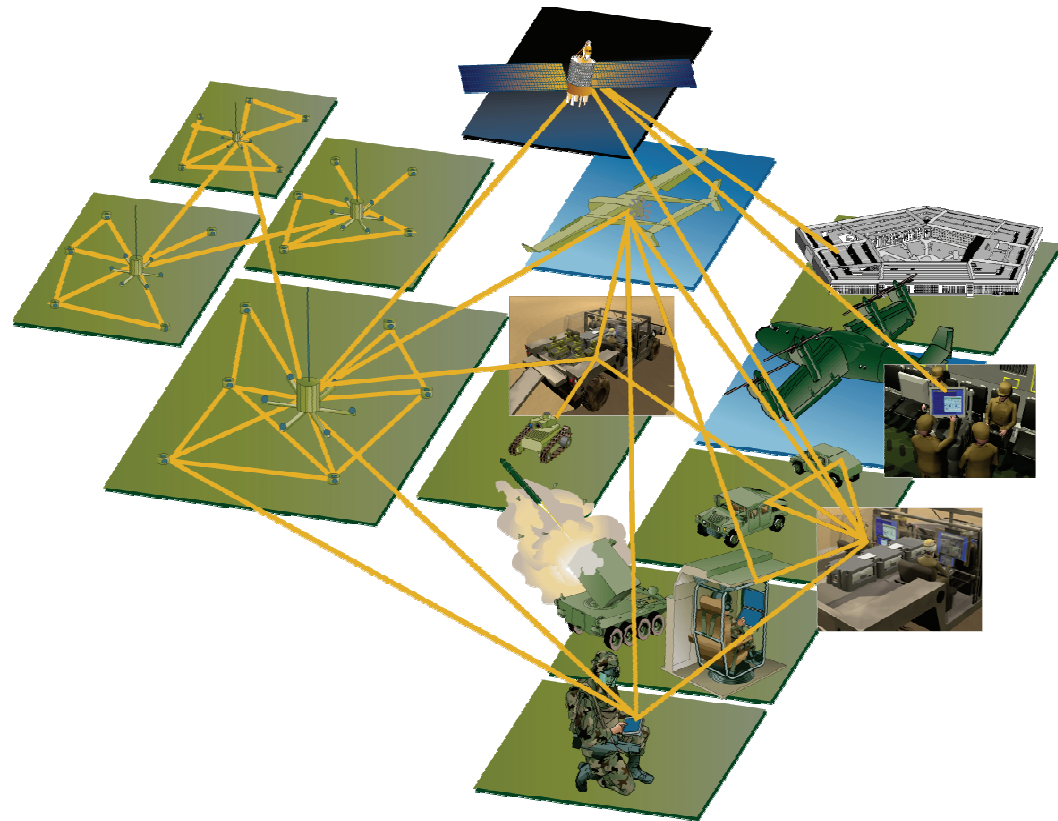




Distributed Common Ground System (DCGS) US Army

DCGS will provide the Intelligence Surveillance & Reconnaissance (ISR) Infosphere

**KPP 1 - Info exchange
with Army, Service,
National, Allied,
Coalition & Commercial
systems. Provides
interoperability with
other intelligence and
battlefield operating
systems**

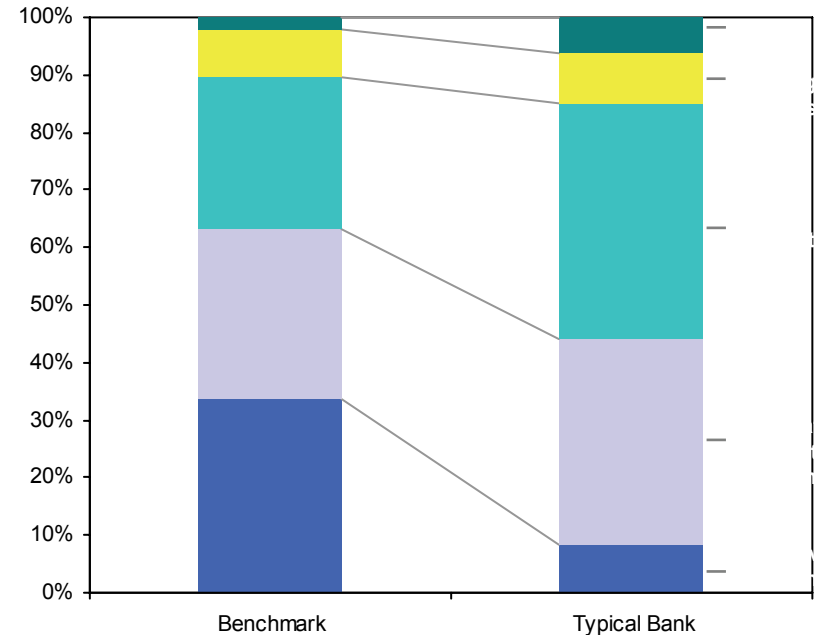




Business Application Integration

- Many different applications used to support the business
- Costly and error-prone point-to-point connections for the various business applications
- Redundancy and duplication across business processes
- Previous unsuccessful attempts at Business Application Integration
- Need to exploit previous legacy application investments
- Lack of consistency across the legacy applications
- Redundant and/or duplicated IT Development efforts across the organization
- Unable to efficiently exploit business growth areas (acquisition of new subsidiaries)
- Multiple Integration Approaches - No single agreed architecture or protocol for the integration of Business Applications

Bank IT Spend Breakdown against industry peers



Source: Gartner 2001 IT Spend - Results for FS - Security / Commodity / Exchanges / Trusts; IBM analysis

The cost of maintaining the existing IT infrastructure in Banks has been driven up by Globalization (disparate international IT environments), Mergers and Acquisitions, the late '90s IT Spending boom, and the decentralization of many IT organizations



The Status Quo is Consuming Business

“CIOs project that they spend between **35%** and **60%** of their budgets on integration projects.”

Source: Aberdeen Group

“Integration remains the number one IT priority; fully **60-70%** of IT budgets are dedicated to it.”

Source: WebServices Journal

“According to analysts, over **70%** of the IT budget is being spent on **overcoming the limitation** of current systems, while less than **30%** is spent on acquiring **new capabilities** that can provide a competitive edge to the business.”

Source: IBM Research

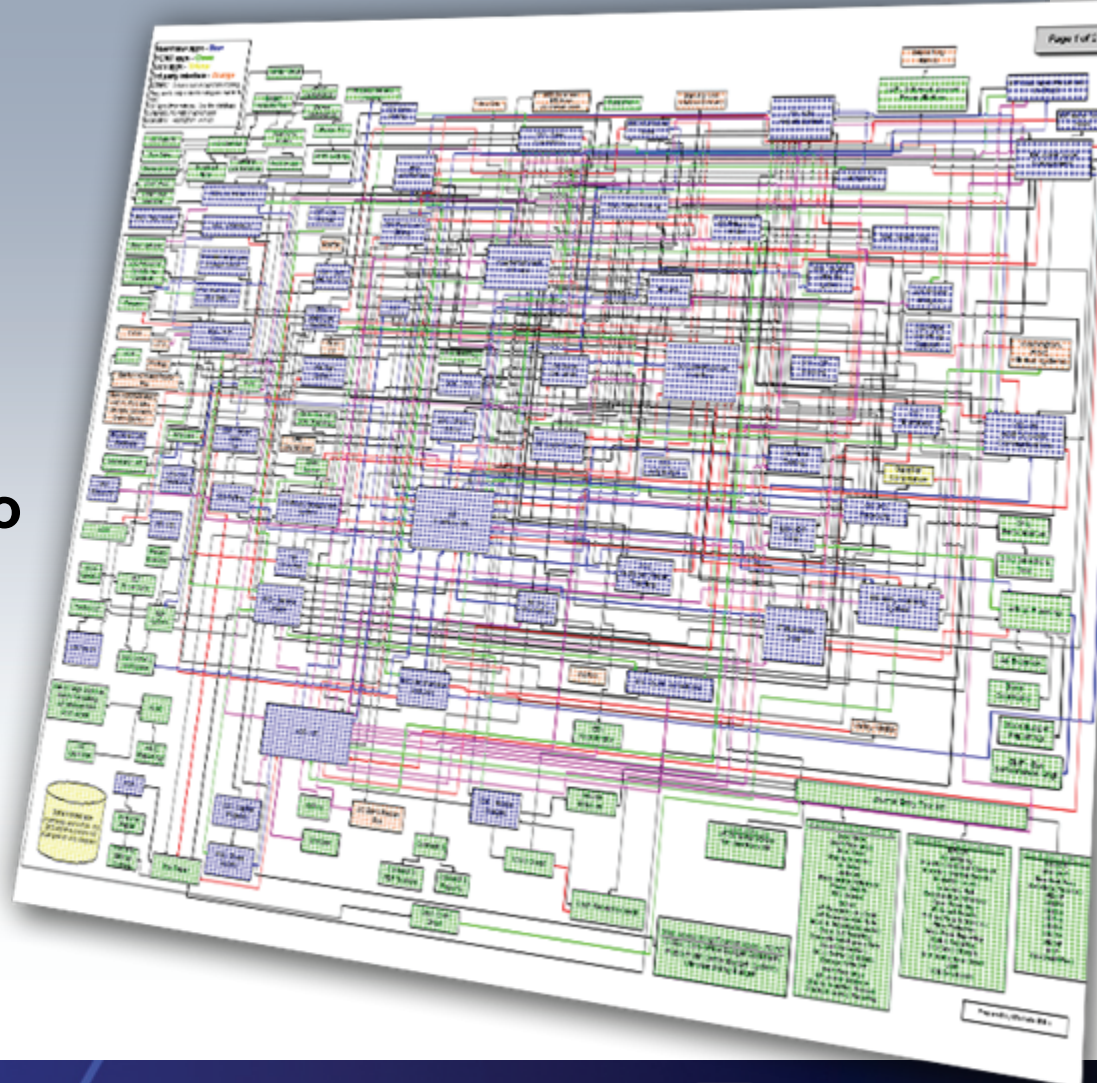
“Various surveys tell us that the typical enterprise is devoting over **80%** of its applications budget to simply **supporting normal business** because of the complexity of making **change**.”

Source: CBDI
The Business Case for SOA



What are the barriers to business flexibility and reuse?

- Lack of business process standards
- Architectural policy limited
- Point application buys to support redundant LOB needs
- Infrastructure built with no roadmap





What is?

... a service?

A **repeatable business task** – e.g., check customer credit; open new account

... service orientation?

A way of integrating your **business as linked services** and the outcomes that they bring

... service oriented architecture (SOA)?

An IT **architectural style** that supports service orientation

... a composite application?

A set of **related & integrated** services that support a business process built on an SOA

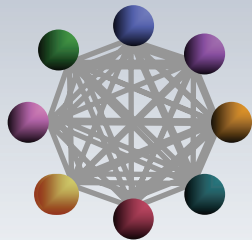




SOA builds flexibility on your current investments

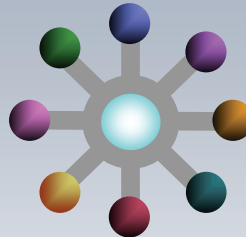
The next stage of integration

Messaging Backbone



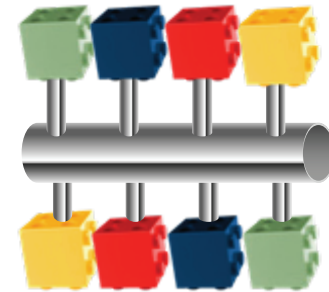
- Point-to-Point connection between applications
- Simple, basic connectivity

Enterprise Application Integration (EAI)



- EAI connects applications via a centralized hub
- Easier to manage larger number of connections

Service Orientated Integration



- Integration and choreography of services through an Enterprise Service Bus
- Flexible connections with well defined, standards-based interfaces

Flexibility

As Patterns Have Evolved, So Has IBM



Where are customers implementing SOA?

Common Business Process Management Projects

1. Classical Continuous Improvement

- TQM, Six Sigma

2. Business Partner Integration Initiatives

- Value Chain Efficiency

3. Enterprise Wide Business Process Reengineering

- Business transformation, business component modeling

4. Establishing Operational / Regulatory Compliance

- Regulatory e.g. Sarbanes-Oxley

5. Expanding Business Capacity

- E.g. scaling into new geographies, extending reach across Ministries

6. Performance Management Initiatives

- E.g. Balanced Scorecard



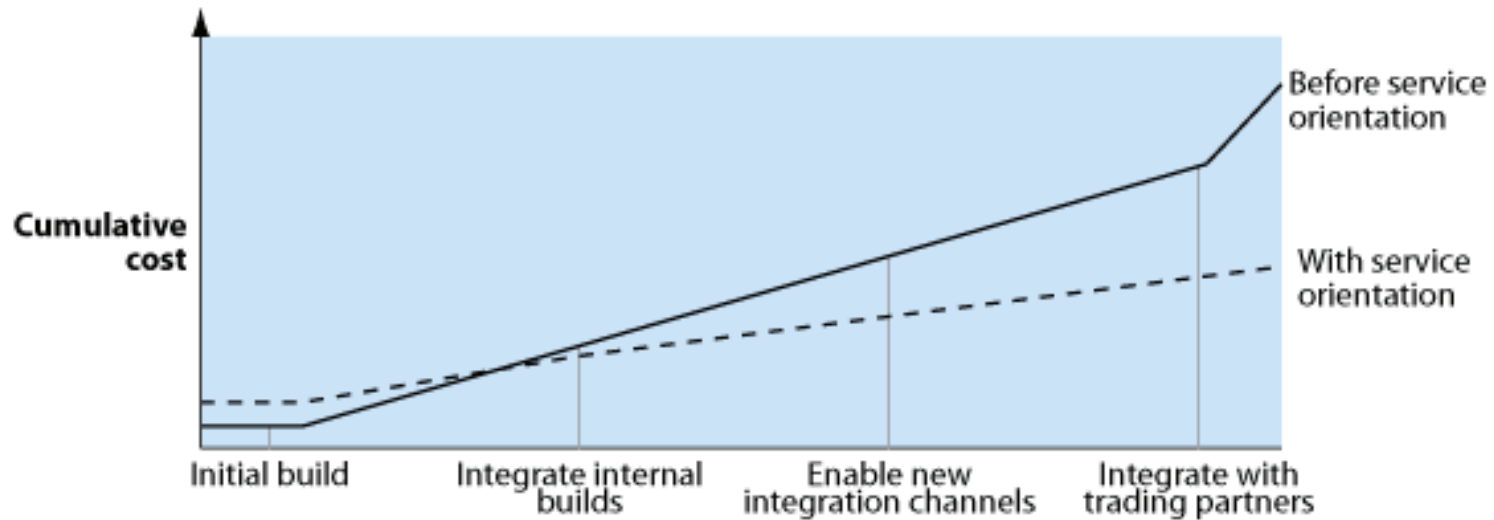
IBM's view of SOA (from SOA Whitepaper¹)

- The primary goal of Service Oriented Architecture (SOA) is to **align** the business world with the world of information technology (IT) in a way that makes **both more effective**.
- SOA is a **bridge** that creates a synergistic relationship between the two that is more powerful and valuable than anything that we've experienced in the past.
- SOA is about the **business results** that can be achieved from having better alignment between the business and IT.
- SOA starts from the premise that all businesses have a **business design** ... typically largely derived from an **informal understanding** of how the business operates in practice.
- **Formally modeling** your business design will
 - Help **validating** the design-intuition codified in your business applications
 - Highlight where **changes** need to be made
 - Establish what **points of flexibility** are needed to help the business be more responsive to its **existing and future changes**.

¹ IBM's SOA Foundation *An Architectural Introduction and Overview*, Rob High et al.



Analyst Studies Show That SOA can Save Time and Money



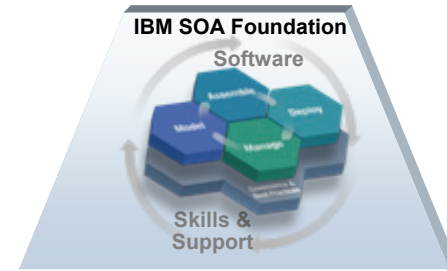
Source: Forrester Research, Inc.

A review of early case studies indicates that organizations that use a service-oriented architecture **(SOA) can reduce integration project development and maintenance costs by 30% or more**. These savings are made possible by the increased effectiveness of component reuse that SOA enables.

Source: Forrester Research, Inc.



SOA Foundation is more than just software



Governance and Process

- SOA Center of Excellence
- Rational Unified Process (RUP)
- IT Infrastructure Library (ITIL)



Education

- Introduction to Value and Governance Model of SOA
- Web services for managers
- Technologies and Standards for SOA Project Implementation
- Design SOA Solutions and Apply Governance

Best Practices

- SOA-Related IP
 - Patterns
 - Redbooks
- Engagement Experience

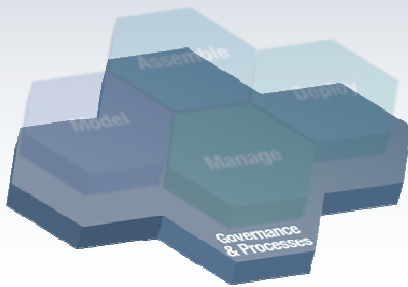


SOA Requires Effective IT Governance

“Effective IT Governance is the single most important predictor of value an organization generates from IT.”

MIT Sloan School of Mgmt.

- **Increasing Share Price** Professional investors are willing to pay premiums of 18-26% for stock in firms with high governance
- **Increasing Profits** “Top performing enterprises succeed where others fail by implementing effective IT governance to support their strategies. For example, firms with above-average IT governance following a specific strategy (for example, customer intimacy) had more than *20 percent higher profits* than firms with poor governance following the same strategy.”
- **Increasing Market Value** “On average, when moving from poorest to best on corporate governance, firms could expect an *increase of 10 to 12 percent in market value.*”



Source: MIT Sloan School of Mgmt.

AUTONOMY



AUTONOMY





SOA Reference Model



Model



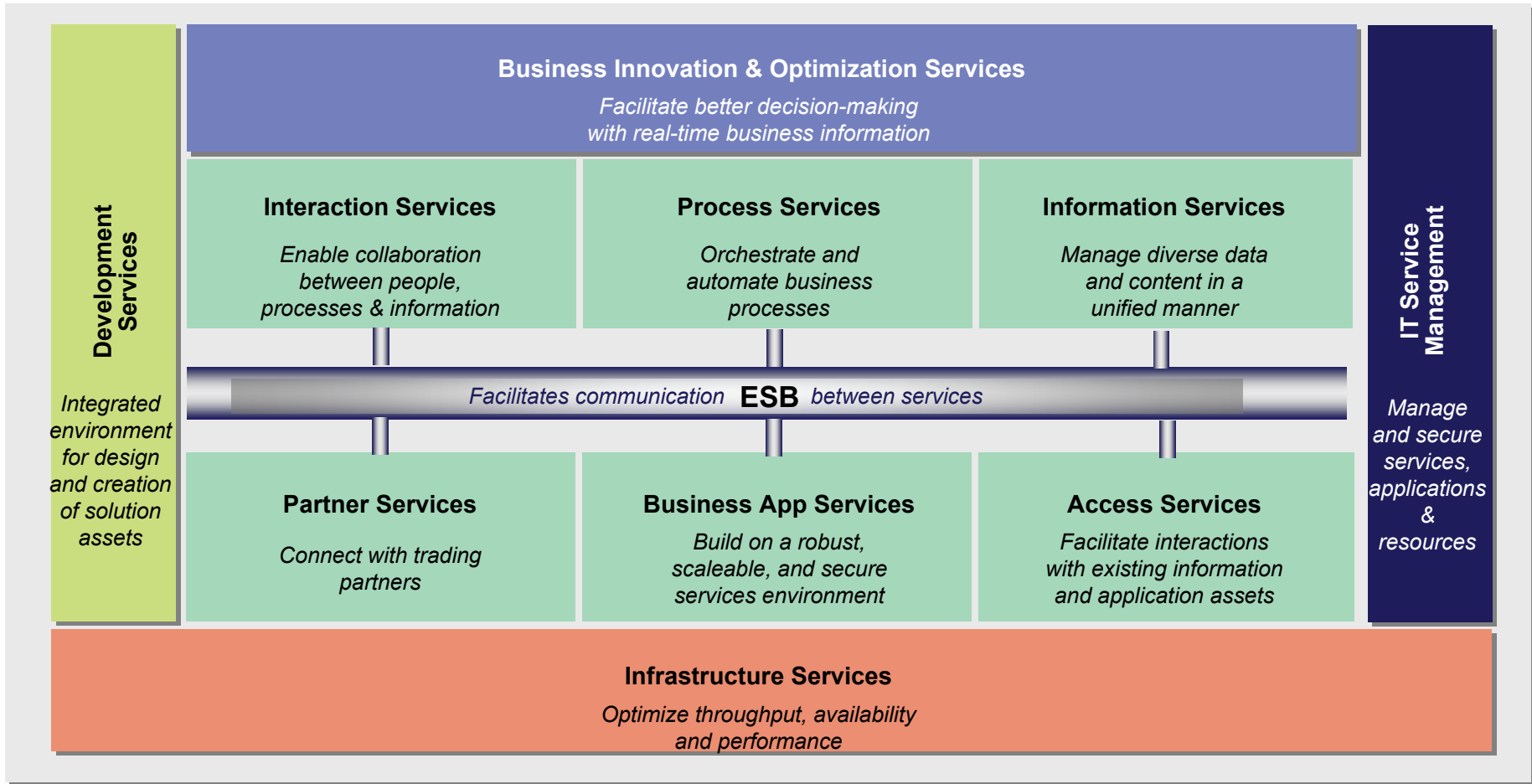
Assemble



Deploy

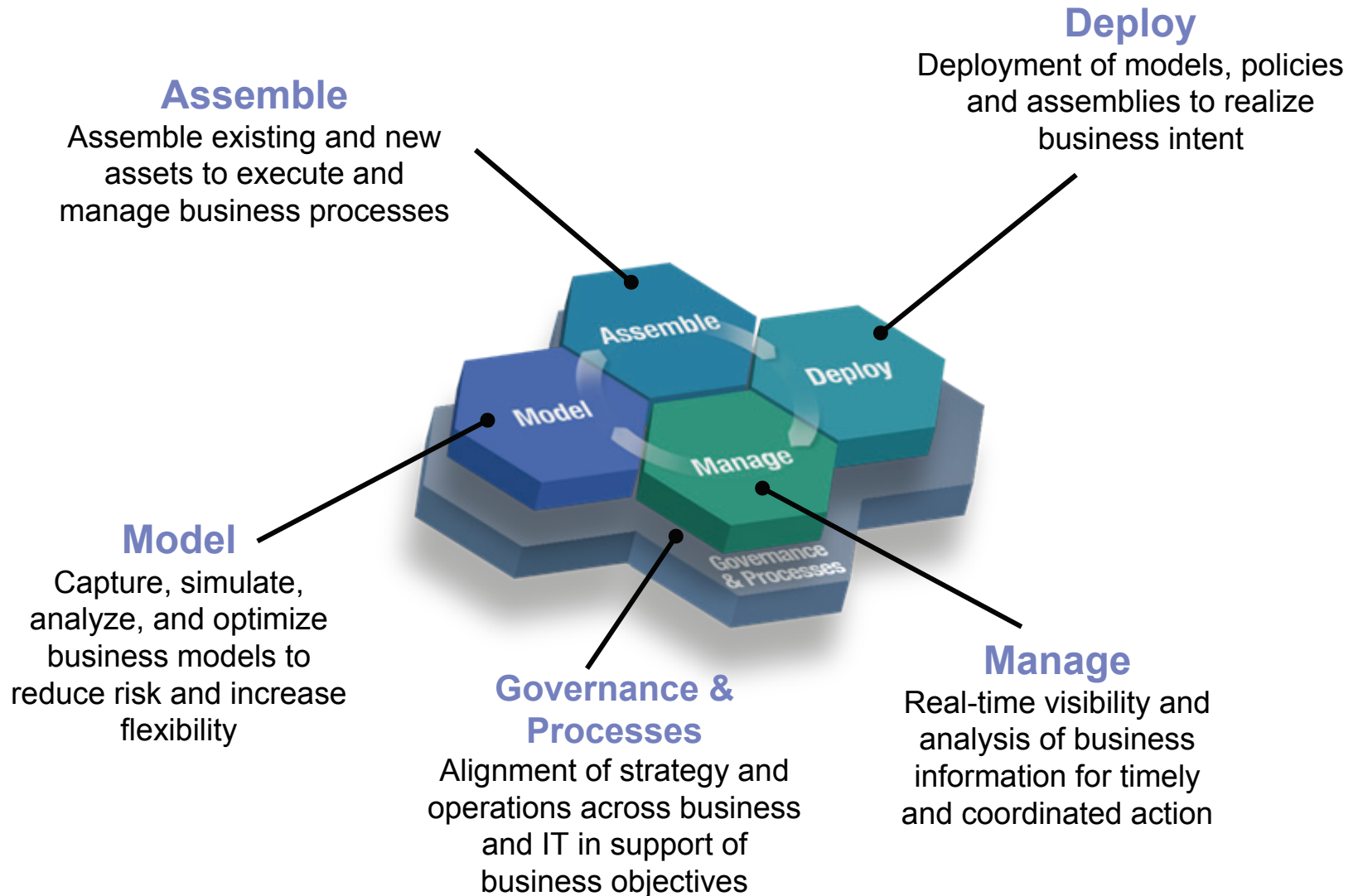


Manage





What we will discuss today:





The SOA Lifecycle

Assemble

WebSphere Integration Developer

Easy-to-use integration to simplify and speed the assembly of composite applications

Deploy

WebSphere Process Server

Flexible deployment of business processes, making plug-and-play of components a reality, powered by **WebSphere ESB**

Model

WebSphere Business Modeler

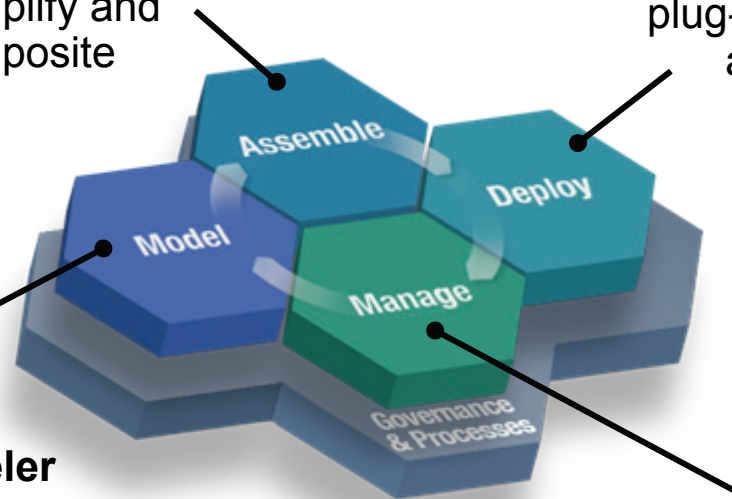
Simple to use process modeling for the business analyst to help maximize process and business resource re-use

Rational Software Architect

Manage

WebSphere Business Monitor

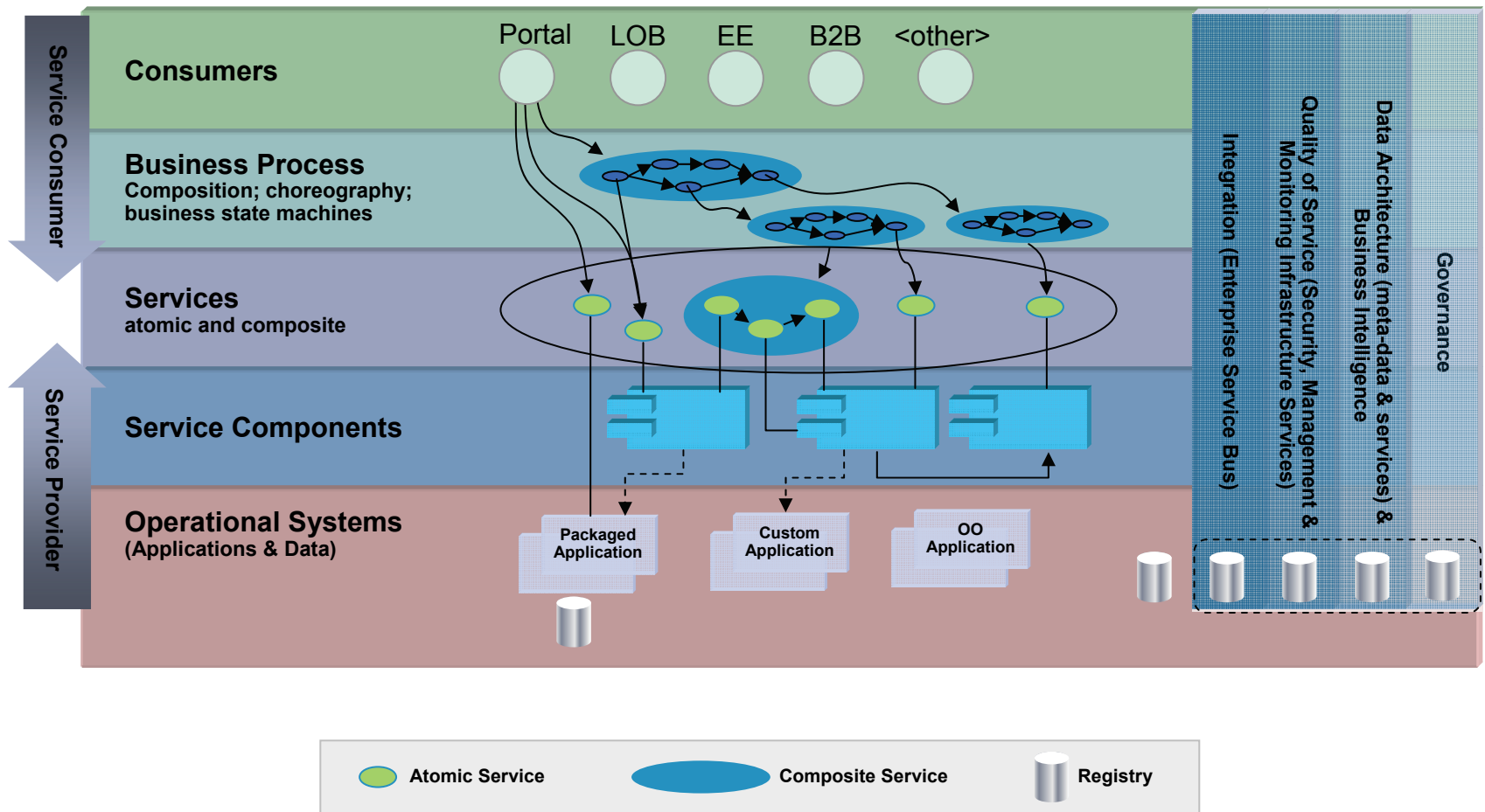
Real-time visibility into process performance enabling process intervention and continuous improvement





We use the SOA Reference Model

A conceptual view of the solution at runtime





Broad Acceptance of Business Componentization

Example: Auto Industry CBM

	Business Administration	Financial Management	Product/ Process	Production	Supply Chain	Marketing & Sales	Service & Aftersales
Direct	Corporate/LOB Strategy & Planning	Financial Planning & Forecasting	Portfolio Strategy & Planning	Production Strategy	Supply Chain Strategy & Planning	Customer Relationship Strategy	Post Vehicle Sale Strategy
	Organization & Process Policies	Capital Appropriation Planning	Research & Development	Master Production Planning	Demand Planning	Sales & Promotion Planning	
	Alliance Strategies		Design Rules & Policies	Production Rules & Policies	Supplier Relationship Planning	Brand Management	
Control	Human Capital Management	Risk Management & Internal Audit	Program Management	Production Scheduling	Supply Chain Performance Monitoring	Relationship Monitoring	Warranty Management
	Legal & Regulatory	Treasury	Configuration Management	Production Monitoring	Supplier Management	Demand Forecast & Analysis	Quality Management
	Business Performance		Design Validation	Quality Management	Logistics Management	Dealer Management	
	Intellectual Property	Tax Management	Change Management				
Execute	Knowledge & Learning	Accounting & General Ledger	Mechanical Design	Plant Operations	Inventory Management	Lease Management	Parts Management
	Building/Facilities & Equipment	Cost Management	In-vehicle System Design		Transportation Management	Order Management	Vehicle Service
	IT Systems & Operations			Process Design	Maintenance Management	Procurement	Customer Relationship Management
			Tool Design & Build				

- CBM maps for all industries including 70 industry sub-segments
- 225+ engagements across all industries
- Over 1500 IBM services practitioners trained globally

Strategic Differentiation

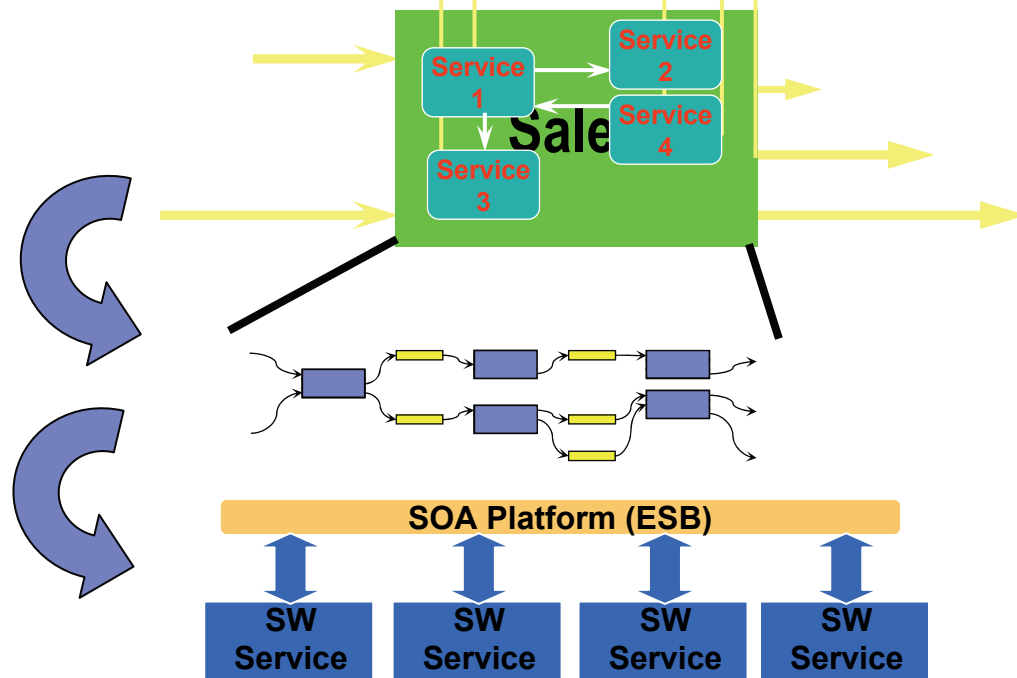
- Strategic
- Competitive Parity
- Basic



Linking CBM to SOA

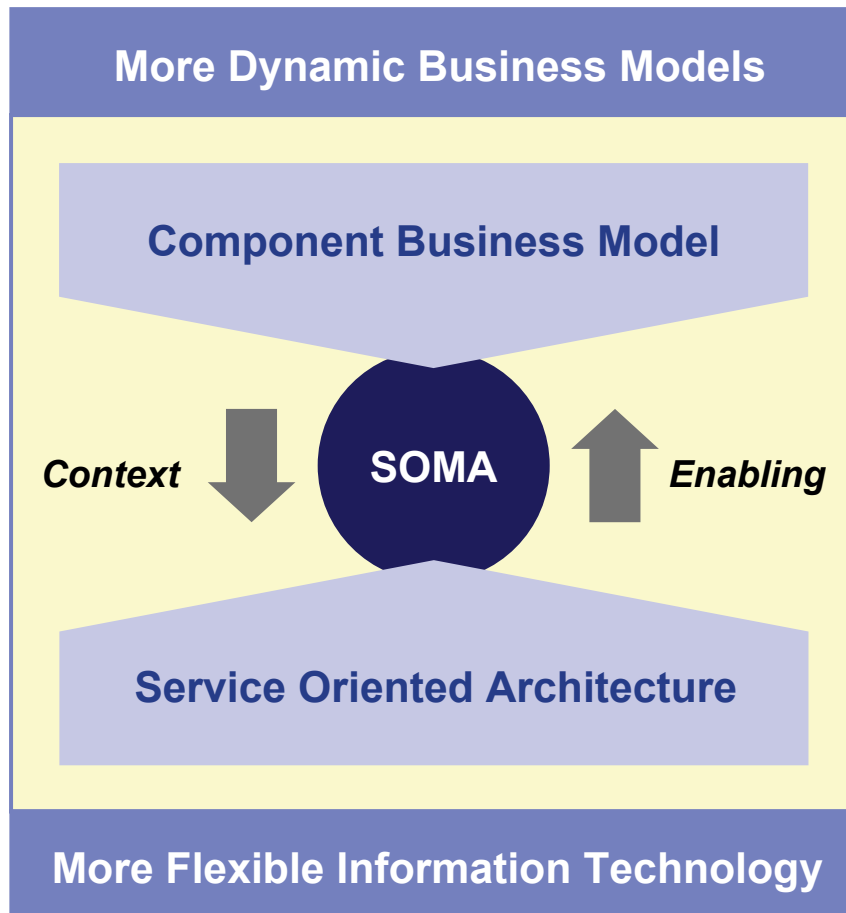
- Build CBM enterprise model
- Identify “hot” component
- Trace “hot” component links
- Isolate for analysis
- Disaggregate into services elements
- Model the service
- Implement on SOA platform

	Business Admin	New Business Development	Relationship Mgt	Servicing & Sales	Product Fulfillment	Financial Control & Accounting
Directing	Business Planning	Sector Planning	Account Planning	Sales Planning	Fulfillment Planning	Portfolio Planning
Controlling	Business Unit Tracking	Sector Mgt	Relationship Mgt	Sales Mgt	Fulfillment Management	Compliance
	Staff Appraisal	Product Mgt	Credit Assessment			Reconciliation
Executing	Staff Admin	Product Directory	Credit Admin	Sales	Product Fulfillment	Customer Accounts
		Marketing Campaigns		Customer Dialogue	Document Management	General Ledger
	Production Admin			Marketing Campaigns	Contact Routing	





Service Oriented Modeling & Architecture links SOA to CBM



A **Component Business Model** is a logical description of the activities carried out by an organization and defines which business processes provide strategic differentiation over competitors.

Service Oriented Modeling and Architecture (SOMA) is a methodology that provides in-depth guidance on how to move from the business model to the SOA deployment model.

Service Oriented Architectures (SOA) provides a reference model for deployment of infrastructure upon which business models can execute. Reuse is facilitated in order to increase flexibility, to cut costs and to deliver more efficient business processes.



The IBM Model is Real!



Model



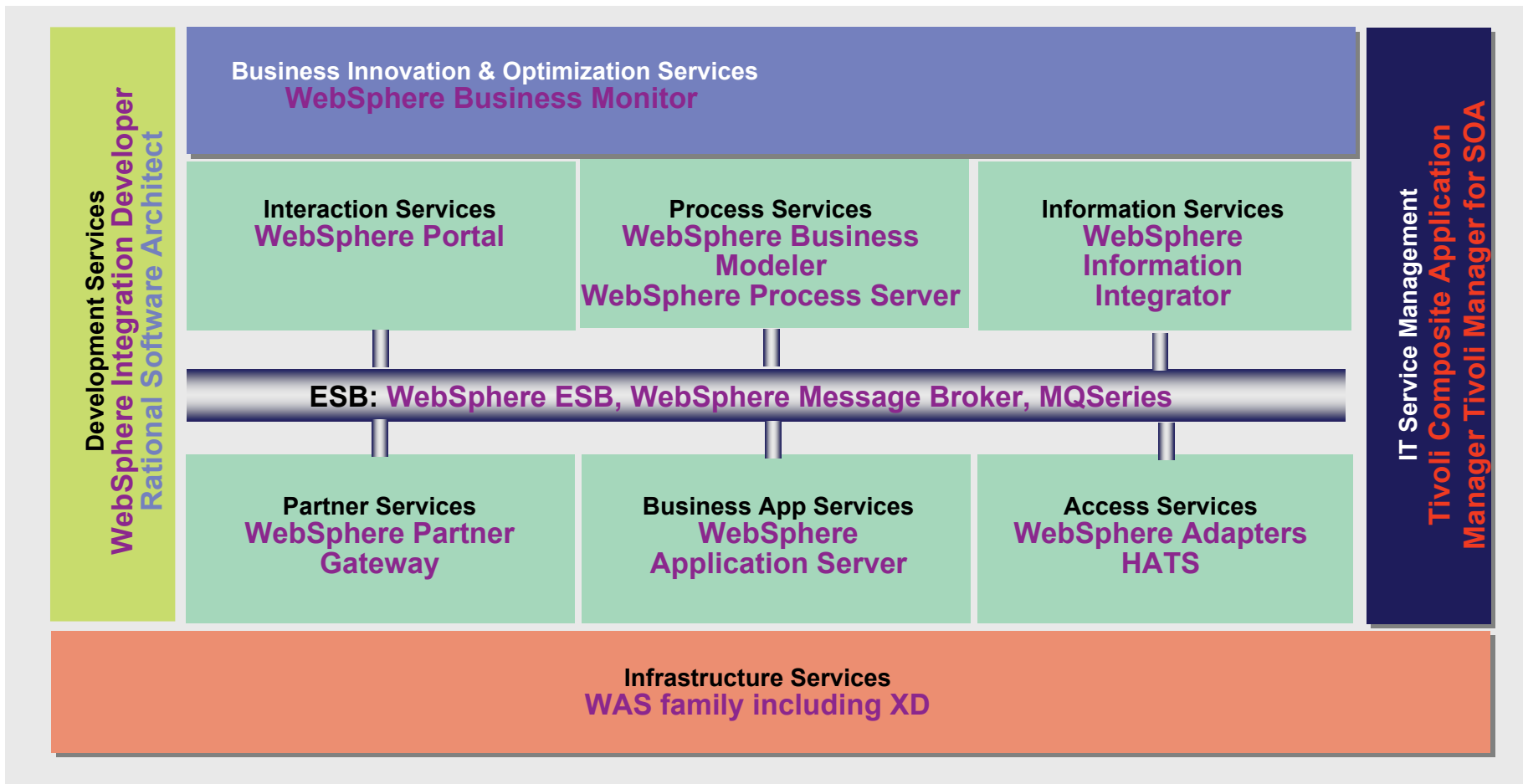
Assemble



Deploy



Manage





Modeling

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Easy-to-use integration to simplify and speed the assembly of composite applications

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Flexible deployment of business processes, making plug-and-play of components a reality, powered by **WebSphere ESB**

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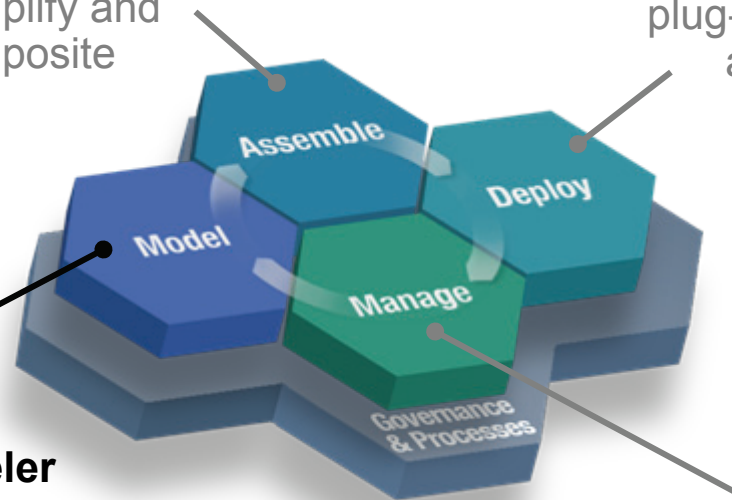
Simple to use process modeling for the business analyst to help maximize process and business resource re-use

Rational Software Architect

Manage

WebSphere Business Monitor

Real-time visibility into process performance enabling process intervention and continuous improvement





WebSphere Business Modeler



Government & Business want to understand and change their operational processes quickly...

...but their processes are: misunderstood, inconsistent, hard-wired, or inflexible

Features

- Graphically Model Processes
- Simulate and Analyze
- Collaborate and Web Publish
- **Export business** and data models for use in IT deployment
- **Import existing process pictures done in Visio** as a starting point for true business modeling
- **Rich edit support:**
Process, Rules, Information, Observation, Resource, Report, Organization...

Benefits

- **Quickly** document and validate your current business processes
- Validate your models; Understand your business in depth; **Optimize**
- Improve business operations by providing employees a means to understand functional processes
- Time and resource **investment protection**, quicker time to deployment



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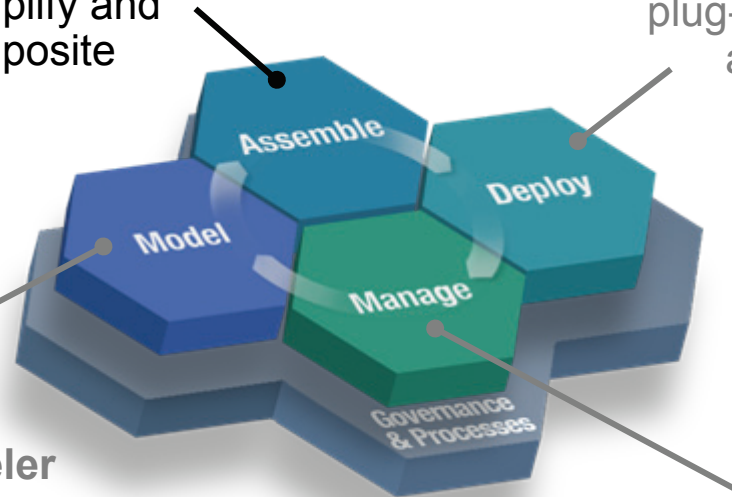
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WebSphere Integration Developer

Government & Business want to understand and change their operational processes quickly...

...but their processes are: misunderstood, inconsistent, hard-wired, or inflexible

Government & Business want to deploy automated processes fast

...but most do not have a way to do this

Features

- Development Tool for Process Server and ESB applications
- BPEL Without Coding
- Dynamic processes and assembly
- Business rules to determine the process flow
- Supports native human workflow

Benefits

- Training on a single, multipurpose platform materially **improves productivity of staff** and reduces education expense
- **Reduce application development and maintenance costs** by changing, adding or deleting business process rules rather than rewriting applications



Process Execution

Assemble

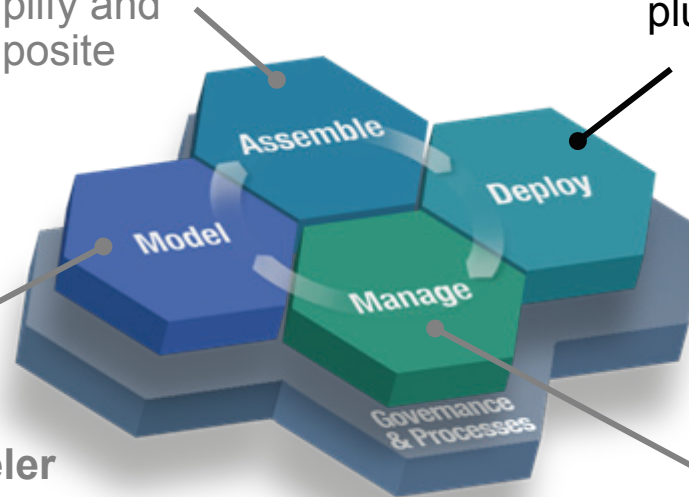
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Features

- A **Single Process Server** built upon WebSphere Application Server
 - Integrated runtime for all SOA based process automation
 - Runtime engine for all the components defined in Assemble
 - SCA & CEI support
 - Supports compensation, fault handling, business objects, rich human interaction
- **Integrated ESB** for Range And Reach

Benefits

- **Reduce cost** to deploy function through simplicity, interoperability and component reuse
- **Rapid** solution implementation and change



Monitor & Manage

Assemble

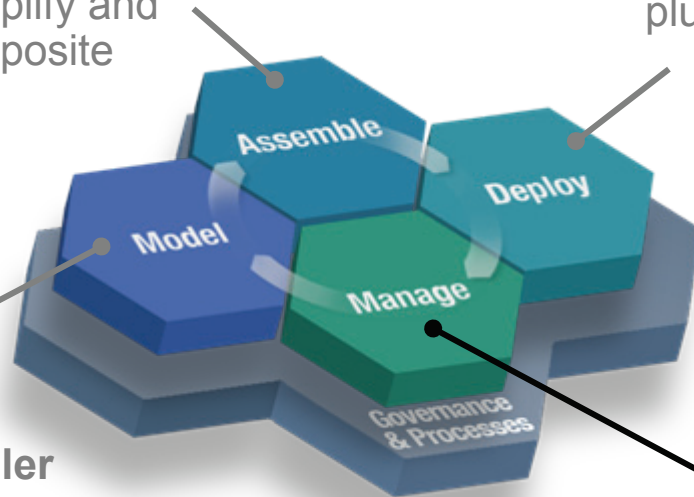
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WebSphere Business Monitor



Government & Businesses want a real time view of operations and the ability to intervene...

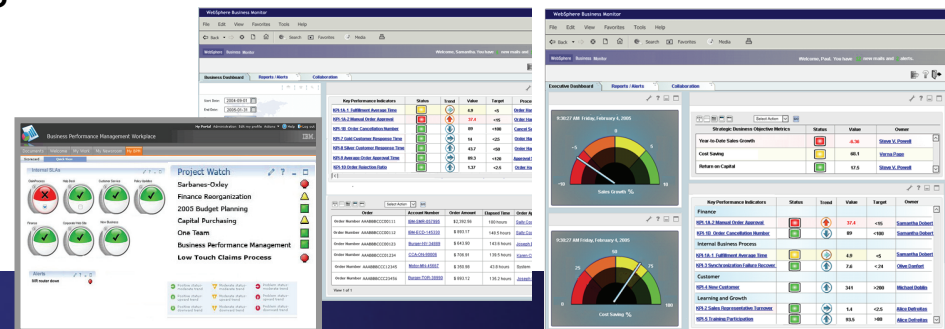
...but there is typically no way to achieve this without a massive effort, yielding inflexible solutions

Features

- Scorecard view of Key Performance Indicators
- Track cost, time and resources
- Identify bottlenecks, balance workloads, reduce latencies in the *process*, *monitor trends*
- Set situational triggers and notifications and dynamically respond to these alerts
- Make process modifications based upon real-time data sent back to the Modeler for simulations
- Set programmed responses to events

Benefits

- Line of sight to business information in **real time**
- **Faster reaction** to changing business situations
- **Optimize** your business operations based on actual performance



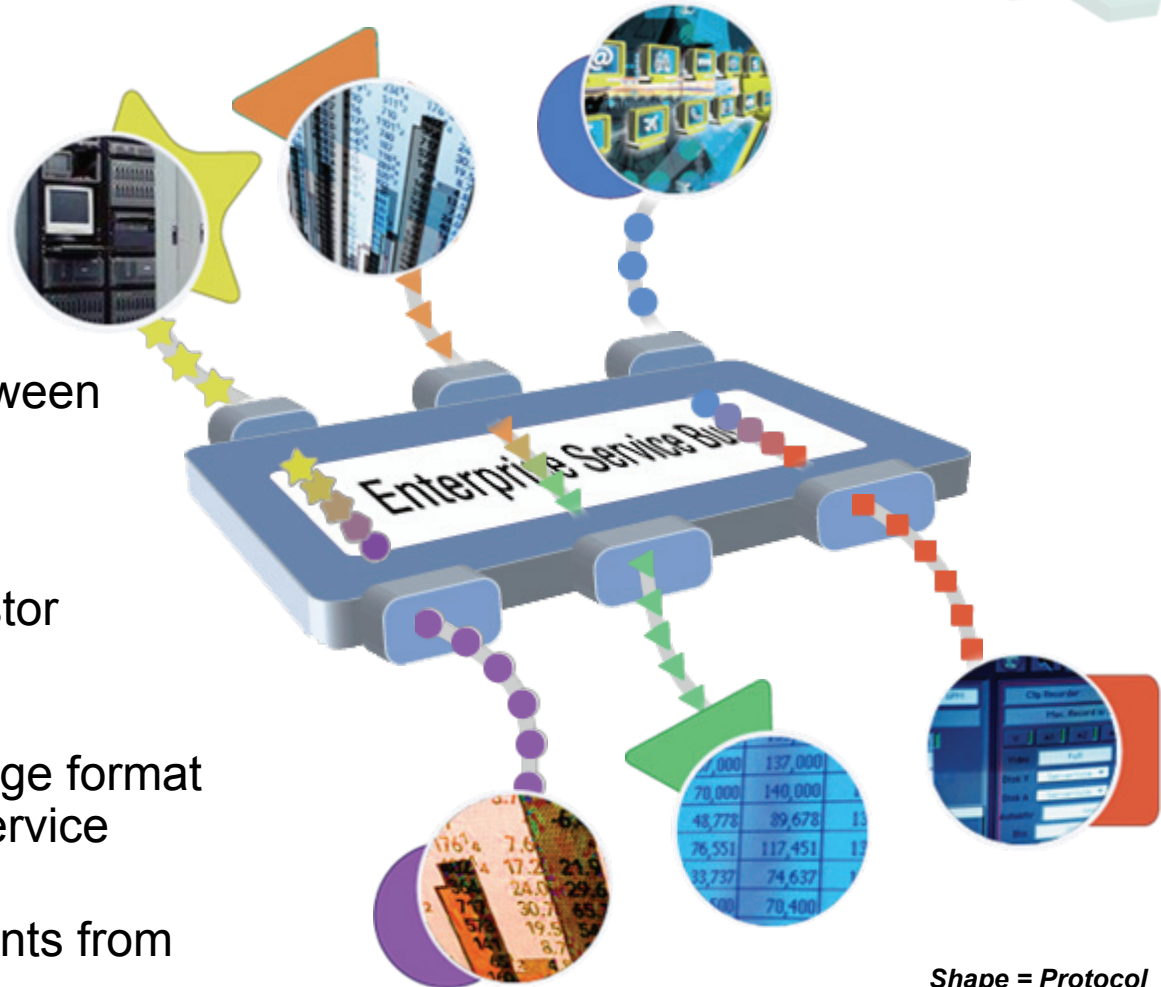


Enterprise Service Bus (ESB)



Flexible connectivity infrastructure for integrating applications and services to power your SOA

- ▶ **ROUTING** messages between services
- ▶ **CONVERTING** transport protocols between requestor and service
- ▶ **TRANSFORMING** message format between requestor and service
- ▶ **HANDLING** business events from disparate sources



*Shape = Protocol
Color = Data type*



WebSphere ESB



Provides Web Services connectivity, JMS messaging and service oriented integration

Ease of use

- Easy to use tools that require minimal programming skills
- Simple to install, configure, build and manage

Improve time to value

- Support for over hundreds of ISV solutions
- Save time and development costs by utilizing pre-built mediations
- Dynamically re-configure to meet changing business processing loads

Seamless integration with the WebSphere platform

- Leverages WebSphere qualities of service: clustering, fail-over, systems management, security
- Easily extends to leverage WebSphere Process Server
- Integrates tightly with IBM Tivoli security and systems management offerings





WebSphere Message Broker: *an advanced ESB*



Universal connectivity

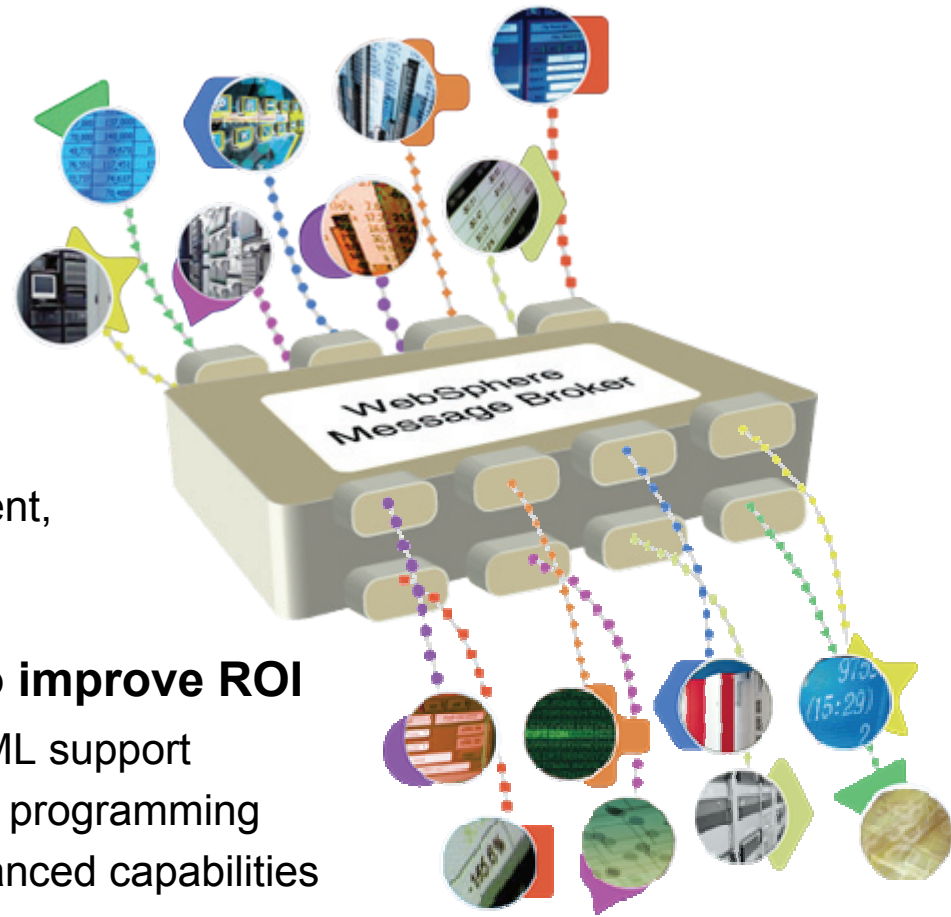
- Unmatched ability in integrating many systems, platforms, devices, and APIs
- Connect virtually your entire enterprise – whether standards based or not!

Universal data transformation

- Support for industry standard data formats
- Option to use WebSphere DataStage TX
- Advanced message transformation, enrichment, and routing

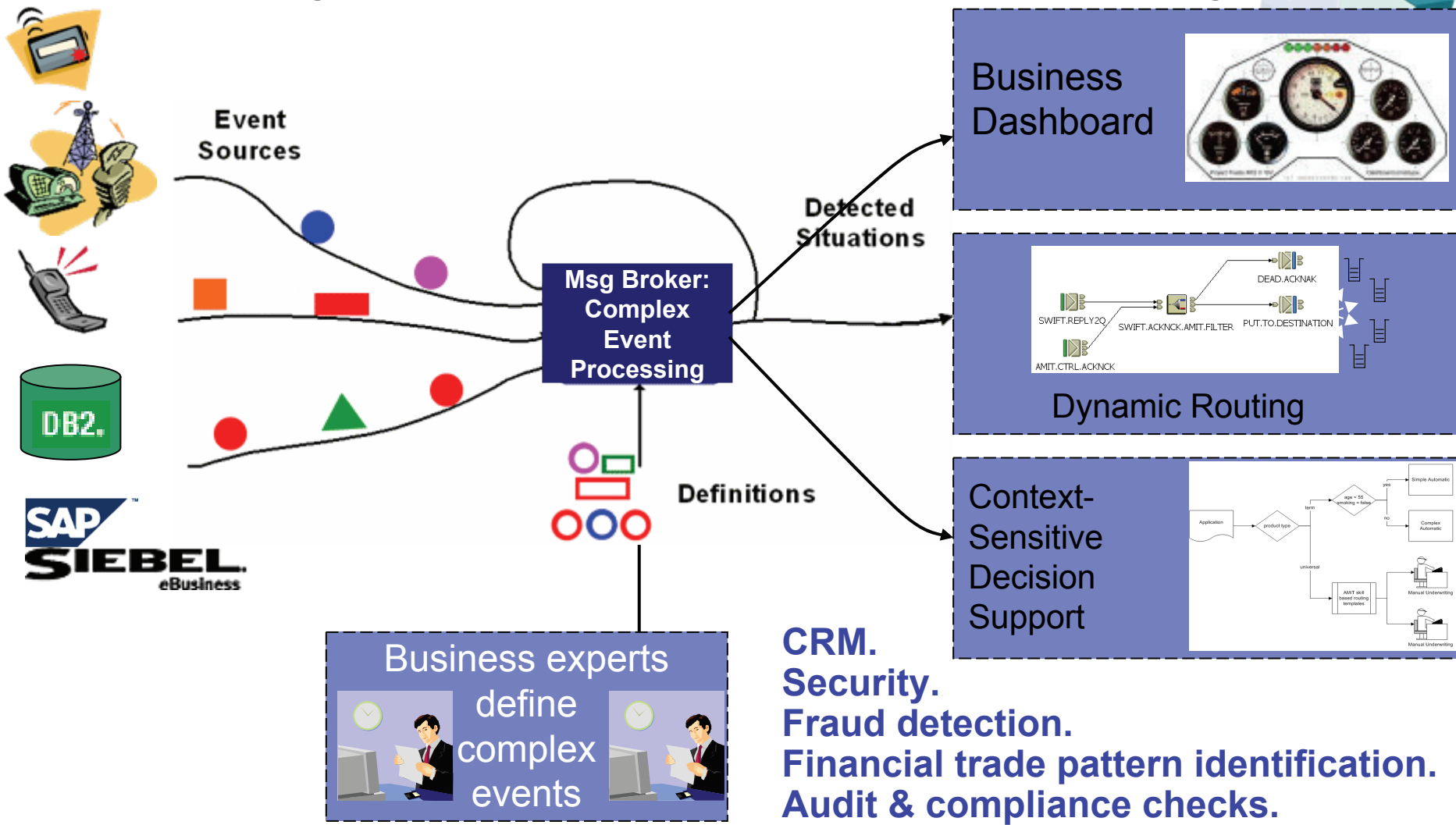
New & improved pre-built capabilities to improve ROI

- Leverage existing skills with rich Java and XML support
- Implement complex event processing with no programming
- Offers simple and easy to use tools with advanced capabilities



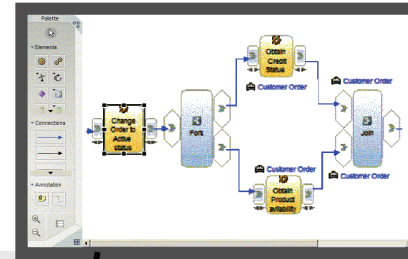


ESB: Message Broker Complex Events Processing

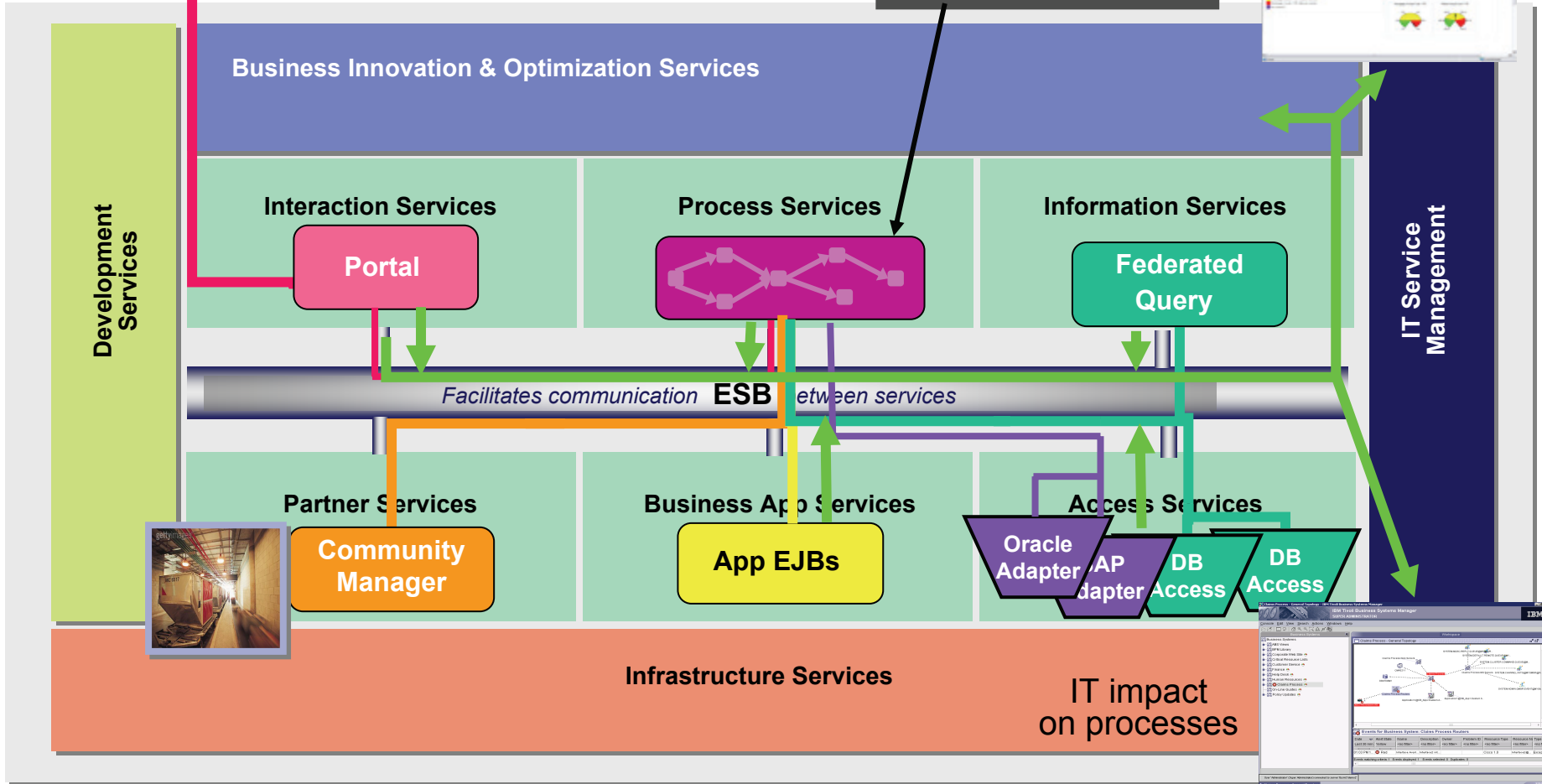
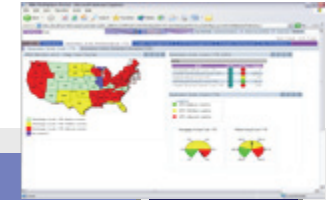




The Model in Action



Business dashboard





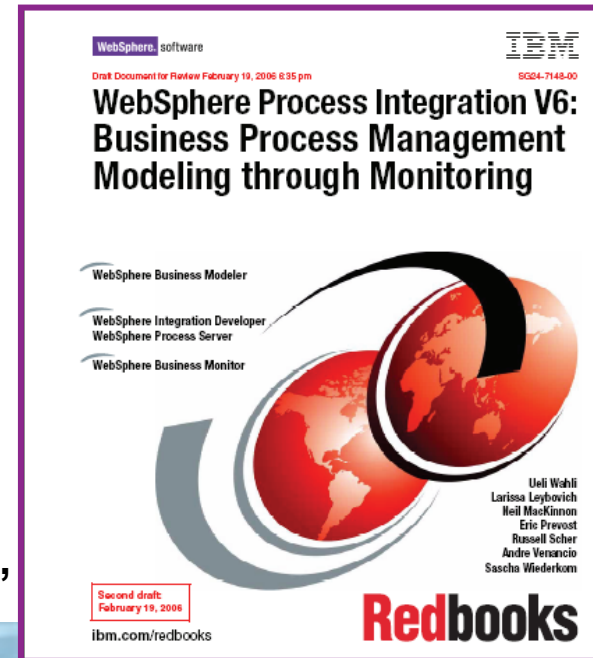
Summary

Based on Experience

- **SOA is a team sport:**
 - Business Team and IT Team work hand-in-hand
- **SOA Foundation is critical:**
 - Establish an enterprise architecture & infrastructure, based upon SOA principles to enable your journey
- **Project Entry points are important**
 - Avoid The “Big Bang” Approach
- **Governance is a must for success**

The first step is the most important... so plan ahead

<http://www-128.ibm.com/developerworks/ibm/library/ar-itio1/index.html?ca=drs-tp4605>





So what's
Going on
In the world
?

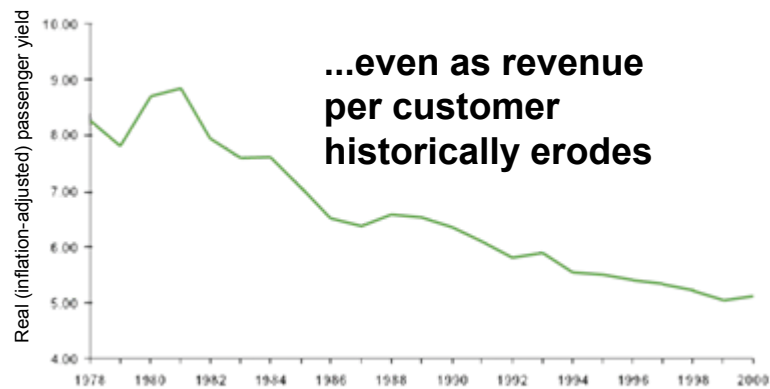
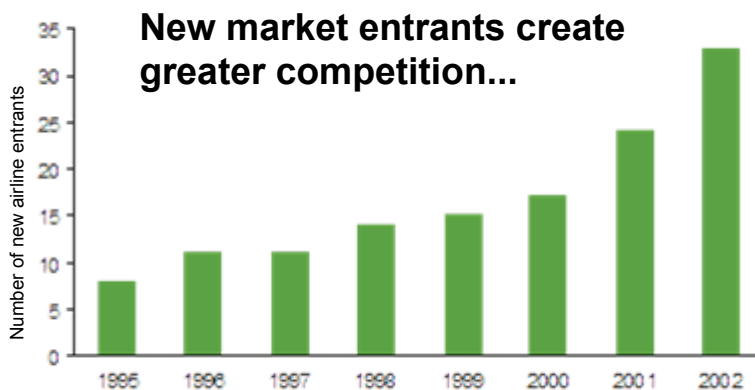




pressures: commoditization

Examples

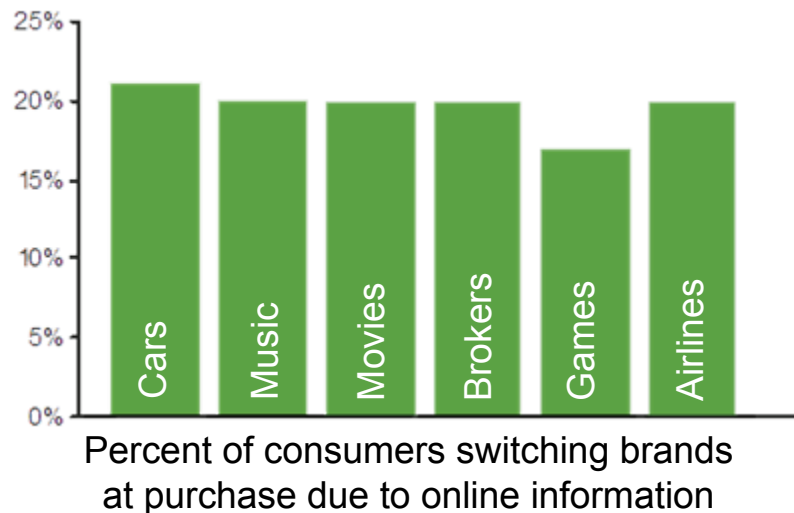
- When consumer electronics products stop working, owners are almost as likely to buy replacements (39%) as they are to get them repaired (44%)
- Nearly half (49%) of US and UK consumers have changed service providers in at least one industry during the past year due to poor service
- Airlines:



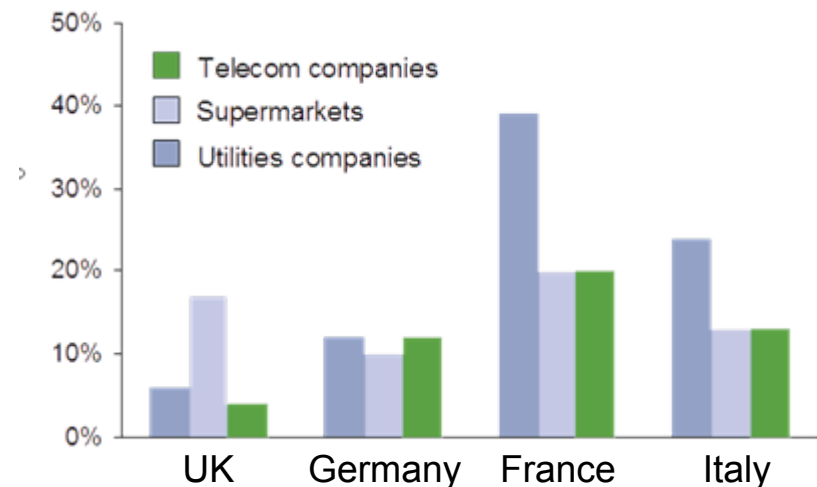


pressures: competition

Access to online information negatively affects brand loyalty as consumers switch brands at purchase...



...compounded by their willingness to purchase products from nontraditional providers.






opportunities: adjacent markets

Example: Mobile Phones

- In addition to making and receiving calls, the most popular mobile phone activities among U.S. owners are using the calendar and address book (42%), downloading or playing games (33%), and downloading ringtones (32%).
- In fact, more than half (56%) of mobile phone subscribers rely on their phones' nonphone features, such as camera, clock, calendar, messaging, music...and as substitute flashlights to see in dark places.
- And one in eight mobile phone users (12%) would pay \$10 per month for unlimited TV access via their phones.

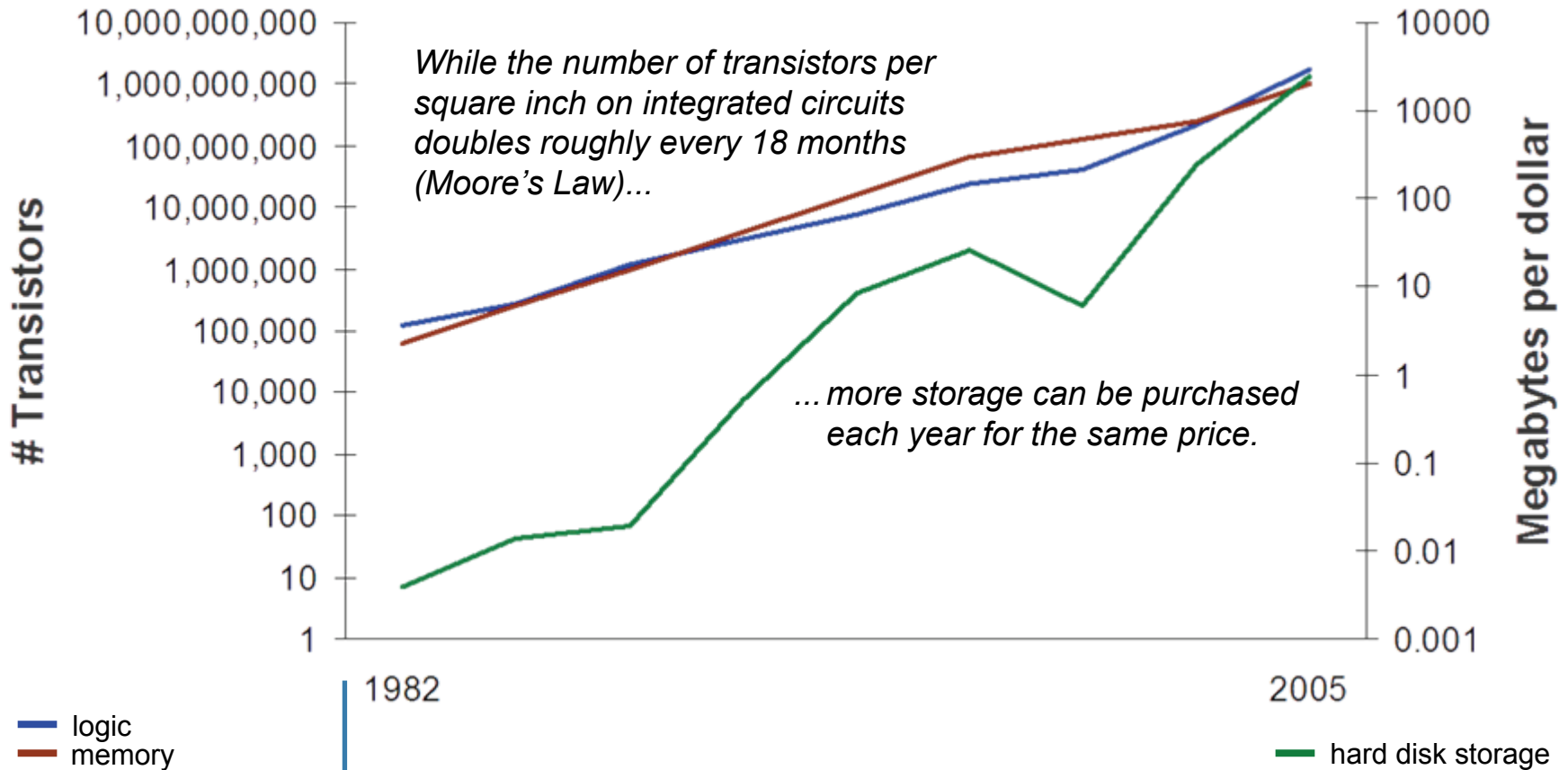
A large, stylized orange arrow graphic points from the top left towards the center of the slide, partially overlapping the text.

So what's emerging
and what should
be watched
?



innovation: how?

* embedded intelligence



Semiconductor Industry Assoc.; Seagate (as reported by IBV: "The Specialized Enterprise"); Pricewatch



innovation: how?

* embedded intelligence

computing no longer just from computers

- Already more than half of the world's chip supply ends up in consumer-electronic gear.

Cell processors

processing, visualization, simulation power

- The chip in a musical birthday card has more computing power than the computers used on the first flight to the moon.

Technology
Collaboration
Solutions

“pervasive computing” actually becomes pervasive

- In 2001, there were 60 million transistors produced for every man, woman and child on earth. In 2010, the amount of transistors per person will likely be 1 billion.
- RFID costs are dropping as production volumes rise; when they reach 5¢ per tag (down from the current 25¢ per tag), many think they'll become truly pervasive.
- About 1.3 billion RFID tags were produced in 2005. This number is expected to rise to at least 30 billion by 2010.

RFID solutions

...and more

[Semiconductor Industry Assoc./Barron's](#); [The \(Bergen\) Record](#); [Semiconductor Industry Assoc. Science & Technology](#); [IDTechEx](#); [Mobile Radio Technology](#); [Investor's Business Daily](#)



innovation: how?

* interconnected people ... and things

a billion people

telematics

- By late 2006, China (currently #2) will surpass the United States (#1) in the *number* of broadband subscribers
- By early 2007, Slovenia (#20) will likely surpass the United States (#19) in the *percentage* of households with broadband connections

logistics

a trillion things

real-time
inventory
management

- Four leading types of “things” will increasingly account for the number of devices and objects connected to the Internet:
 - tagging things (radio frequency identification)
 - feeling things (sensors)
 - thinking things (smart technologies)
 - shrinking things (nanotechnology)
- 100% annual growth rate of *number* of object-to-object connections
- 49% annual growth rate of *market value* for object-to-object communications
- Estimated worldwide market value of object-to-object communications in 2010: \$270 billion

...and more

[Telecompaper](#); [ITU \(UN\)/Financial Times](#); [Electronics Weekly](#); [Alexander Resources](#)



innovation: how?

* supercomputing for everyone

System z

faster, more powerful

- More than 70% of the world's most powerful supercomputers were installed in 2005
- By 2010, supercomputers will be capable of 10 quadrillion calculations per second

blade servers

more affordable

- On demand supercomputing today costs approximately 50¢ per hour for CPU time.
- Virtualization can result in an overall IT cost reduction of 15-30 percent, above and beyond what can be achieved through consolidation.

grids

more ways to access

- Mainframes
- Grids
- On demand
- Aggregated servers

storage

...and more

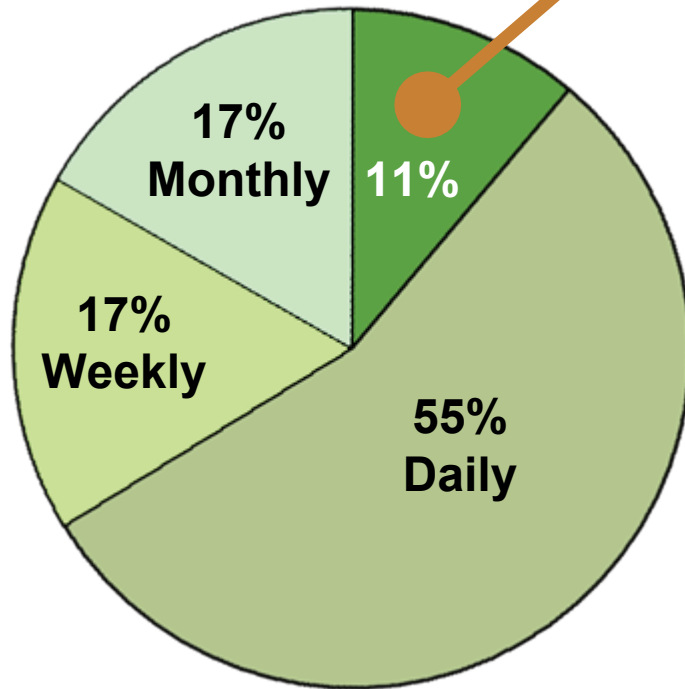
[Top500](#); [CIO Today](#); [IDC](#)/IBM; Gartner



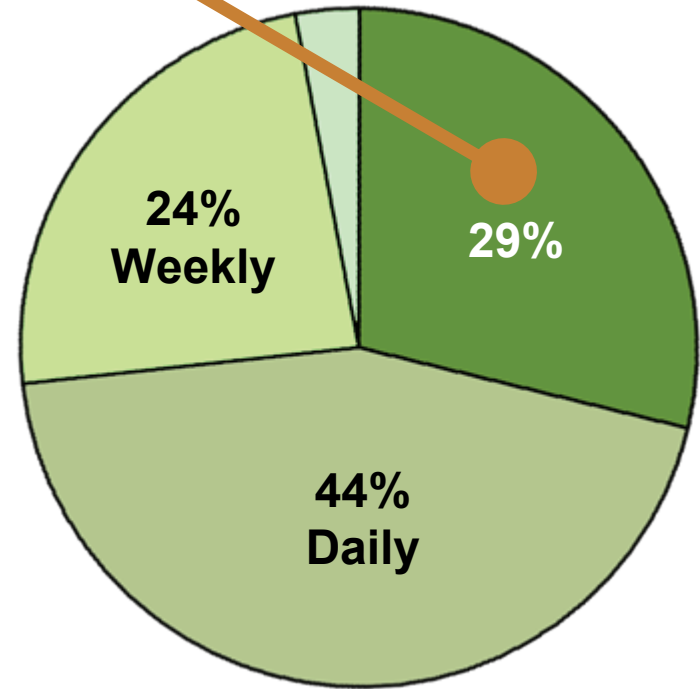
innovation: how?

* insight through integration

Instantaneous



“How current does data need to be for analysis today in **2002**?”



“How current will it need to be in **2006**?”



innovation: how?

* insight through integration

storage

more information than ever before

- E-mail volume:
 - 2000: 5.1 billion messages a day
 - 2005: 135.6 billion messages a day
- The world's largest commercial databases are now measured in the hundreds of terabytes.

middleware

autonomic
systems

more information integrated more easily

- 90% percent of Fortune 500/Europe 500 companies are planning to or are in the process of implementing an internal "shared services" – or global integration – strategy.

analytics

easier to analyze and better results

expertise

- The Fire Program Analysis system looks at weather patterns and historical data, such as the location and intensity of forest fires, to predict and prepare five U.S. government agencies for the next season's blazes.

...and more

[ABC News](#); [InformationWeek](#); [Axon](#); [Fire Program Analysis](#)



innovation: how?

standards
bodies

open source
development

Power.org

Open Invention
Network

Technology
Collaboration
Solutions

First Of A Kind

On Demand
Innovation
Services

...and more

* new forms of collaboration

between individuals

- The “blogosphere” doubles in size every 5 months, adding 70,000 new blogs per day.
- 50 million Americans -- 30% of U.S. Internet users -- visited blog sites in the first three months of 2005 alone.
- 70% of Internet users use instant messaging, and nearly 4 in 10 send as many or more IMs as e-mails.

between, with and among companies, experts, communities, customers...

- Over half the companies who emphasize collaboration out-perform their closest competitors in terms of operating margin.
- By 2009, wikis are predicted to become mainstream collaboration tools in at least half of all companies.

more kinds of things to collaborate on

- Procter & Gamble has set itself a goal of getting half its new product ideas from outside the company by 2010.
- By 2010, 1 of 4 online music sales will be driven by recommendation technology, or “taste-sharing applications.”

[Technorati](#); [Comscore](#); [America Online](#); IBM CEO Study 2006; [Gartner/BusinessWeek](#); [BusinessWeek](#); [Gartner & Berkman Center for Internet and Society/Christian Science Monitor](#)



innovation: how?

* virtual corporations

once hype, now reality

- Already, 41 percent of Global 2000 firms have deployed SOA (service-oriented architectures) — expected to rise to 62 percent in 2006.
- Worldwide spending on business process outsourcing is projected to grow 11 percent annually through 2008.

Component
Business
Model

service-oriented
architectures

business broken into component pieces

- The average bank uses 60 to 90 defined business components every day in the course of business.
- The market for business information management software and expertise is considered to be currently valued at \$36 billion, and could be worth \$69 billion by 2009.

asset-based
services

application
hosting

deeper integration with enterprise

- It's predicted that, by 2008, 80 percent of development projects will be based on SOA.

...and more

Forrester; IDC; IBM "[Building an Edge](#)," Vol 5, No. 8; [Moore & Cabot Capital Markets/Dow Jones](#); [Gartner/Wireless News](#)



Thank you

COOL
Runnings!