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Enterprise Service-Oriented Architecture

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CTO, State and Local Solutions

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Agenda

1. SOA 101

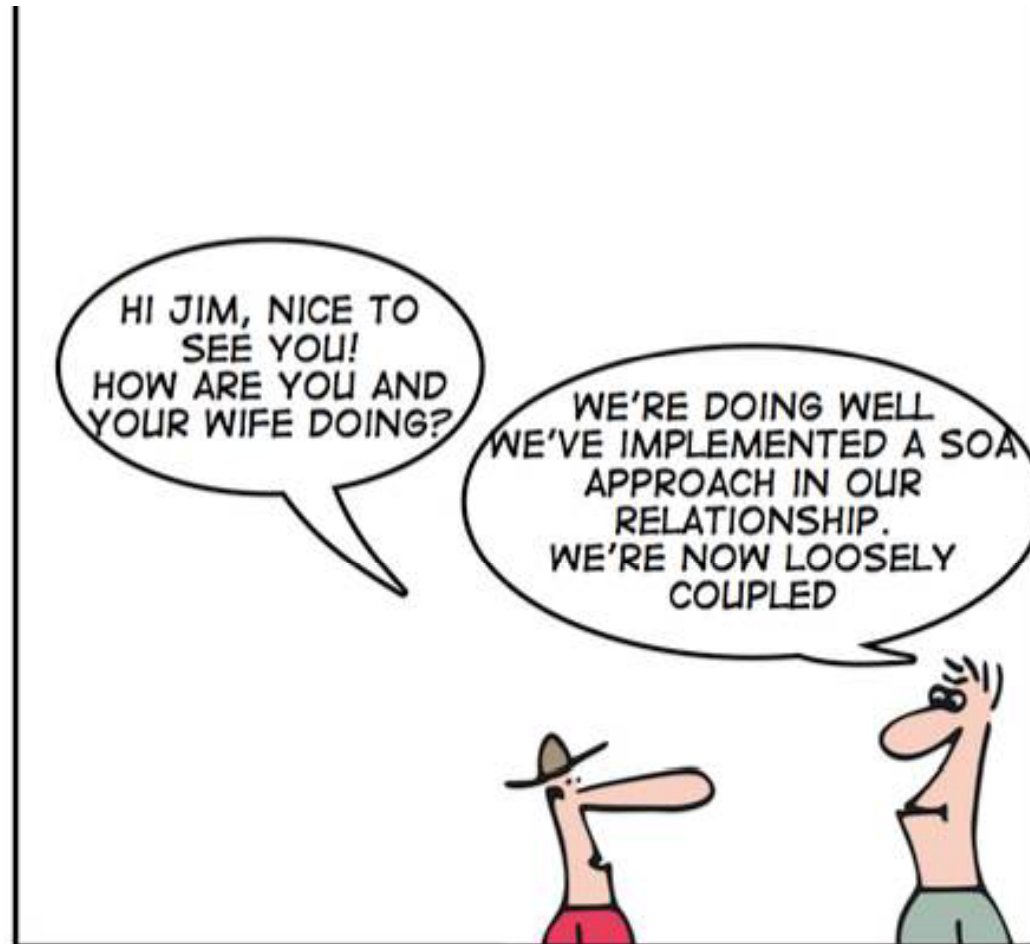
2. The “Enterprise” Context

3. Adopting SOA In The Enterprise

4. Final Thoughts

*Our ability to imagine complex applications will always
exceed our ability to develop them
-Grady Booch*

On The Lighter Side...



geek and poke

WITH SOA IT JUST SOUNDS BETTER

Nothing Endures But Change

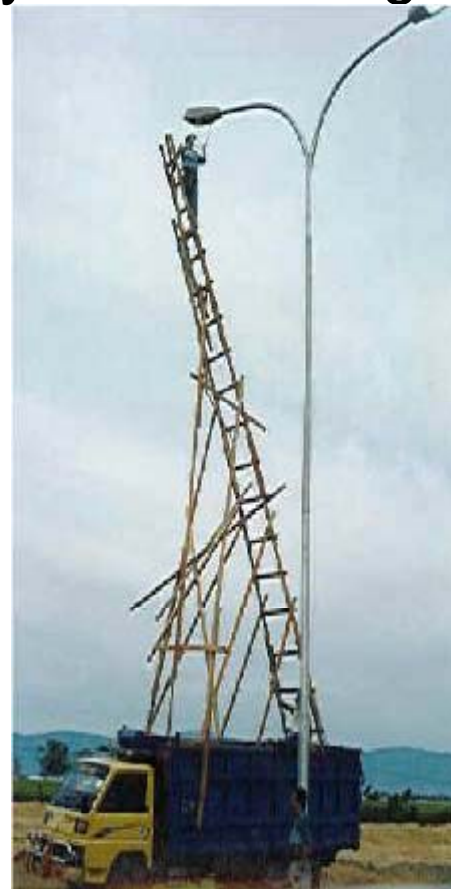


Agility - Reacting to Change

- The ability of an organization to recognize change and respond efficiently and effectively to that change



Efficient but not effective



Effective but not efficient

Constituent View - It Is All About Services

Internal Revenue Service
United States Department of the Treasury

Home | About IRS | Site Map | Español | Help

Keyword: Search Terms SEARCH

INTERNALS | BUSINESSES | CHARITIES & NON-PROFITS | GOVERNMENT ENTITIES | TAX PROFESSIONALS | RETIREMENT PLANS/COMMUNITY | TAX-EXEMPT BODY COMMUNITY

Most Requested Forms and Publications

- Form 990-E
- Form 990
- Form 990-B
- Form 990-T
- Form 990-E

Warning on Scam E-Mails
Members of the public are receiving phony e-mails falsely claiming to come from the IRS. Take steps to protect yourself.

New Life Cycle Tools Help Exempt Organizations
The time-based tools help guide exempt organizations through tax rules and requirements.

Tax Payment Options
Were't able to pay all of your taxes due by the deadline? Consider these options available to you.

Telephone Excise Tax Refund
Got questions on the new one-time tax refund? We've got answers.

Information About

- Check
- Controlled Dispositions
- Electronic Payments
- Foreign-Related Questions
- Newsroom
- Tax Stats
- Taxpayer Advocate

Mark Ginnick Tools

NEW YORK STATE

Department of Motor Vehicles
DMV Services

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The DMV accepts these credit cards.

On-Line Services

- Vehicle Registration Transactions
- Driver License Transactions
- DMV Records Transactions

Telephone Services

- Renew a Vehicle Registration
- Order Custom or Personalized Plates
- Schedule a Road Test

NEW YORK STATE Department of Taxation and Finance

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Income Tax

- Individual Taxpayers
 - E-file Information
- Tax Professionals
 - e-file Mandate for Tax Professionals
 - e-file Mandate FAQs
- Software Developers
- Credit Card Providers
- Pay your Estimated Tax Online
- Acknowledgment Codes

E-file/E-pay

Your Tax Filing Made Easier.

It's fast. It's easy. It's simply the best way to file...

The speed, accuracy, and convenience of computers allow e-filed returns to be

Business Tax

- Corporation Tax
 - General Information
 - Software Developers
- ETA
- Personal Tax
- Sales Tax
- e-file a "This Tax Due" return

amazon.com Your Amazon.com See All 41 Product Categories Your Account | Cart | Your Lists | Help | NEW

Gift Certificates | International | New Releases | Top Sellers | Today's Deals | Sell Your Stuff

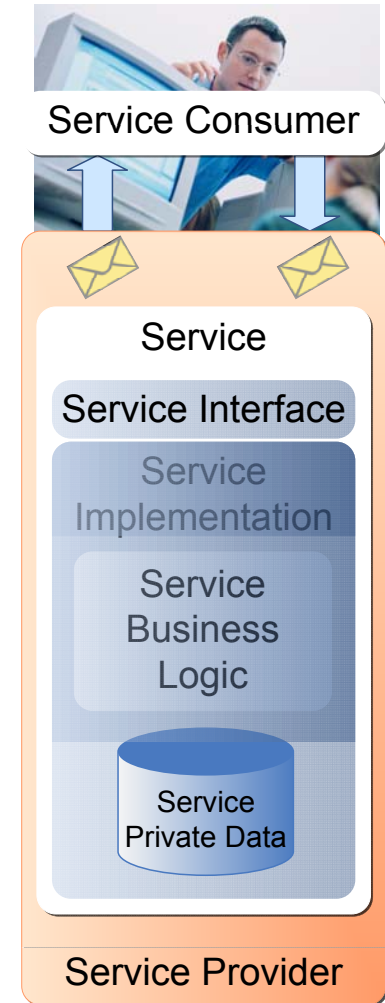
Search Amazon.com GO Find Gifts

Hello. Sign in to get personalized recommendations. New customer? Start here.



A Service...

- Is a unit of work done by a service provider to achieve results for the service consumer
- Is a software component that is capable of providing access to functions and data
- Is exposed to other components via a service description
- Appears as a “black box” to the service consumer
- Is interacted via message exchanges
- Encompasses a business perspective
- Decouples its interface from its implementation
- Is built to last
- Needs to ensure stability and robustness

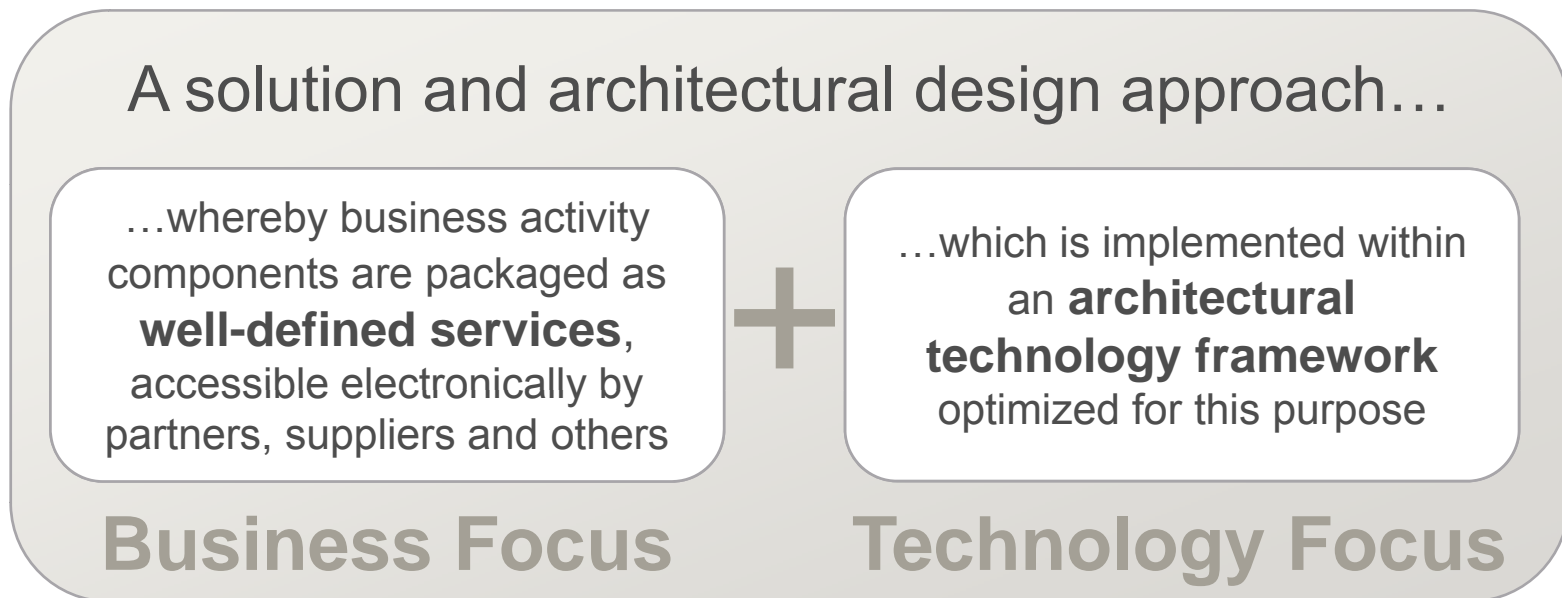


Service-Orientation

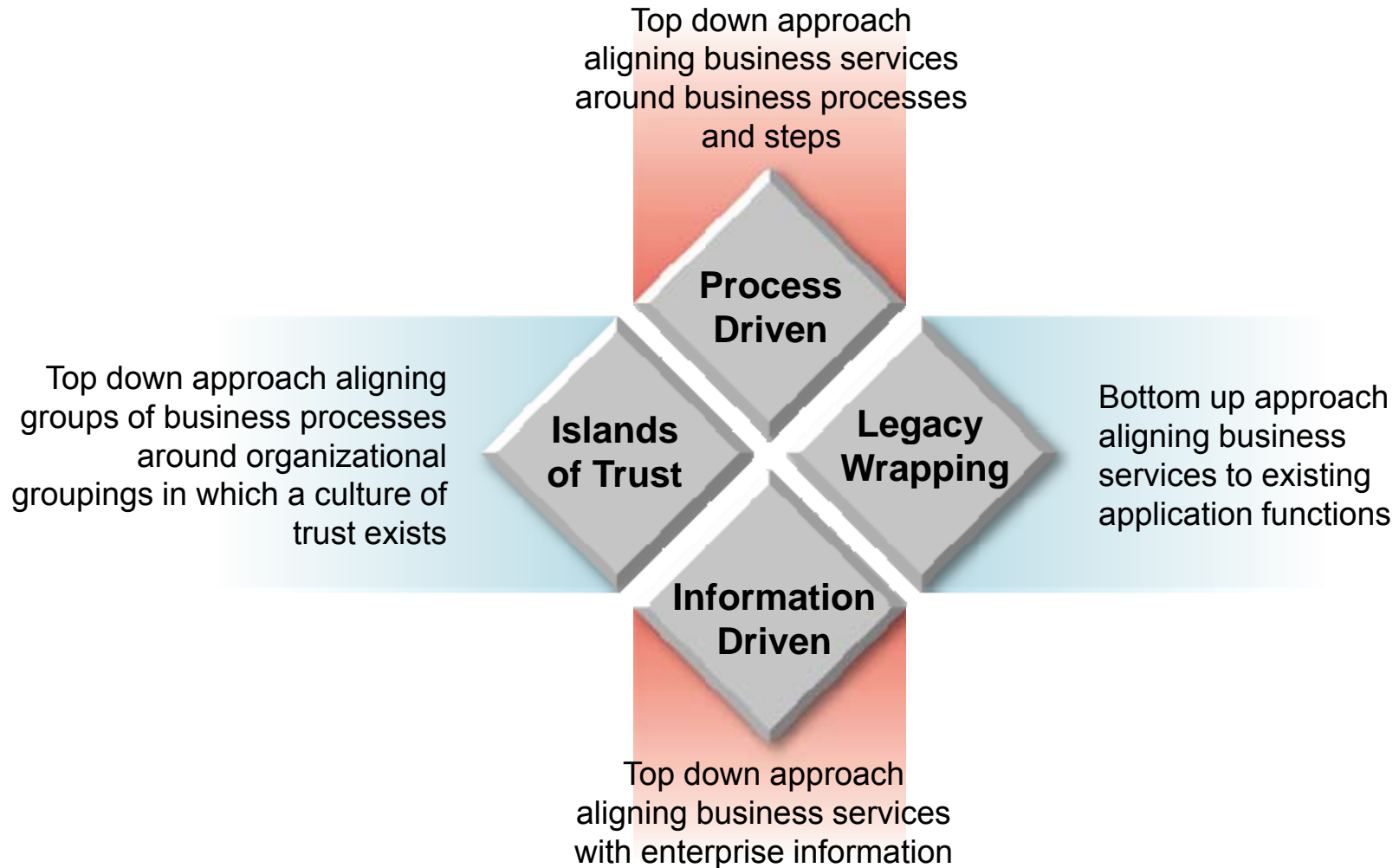
- Service Orientation
 - Use of “open” interoperability protocols to facilitate service interaction
- Architecture
 - A *process* of putting together components to achieve some overall goal
 - = A *blueprint* that comprises the components organized by layers, their visible properties, their relationships and interactions, and constraints
 - A *discipline* that addresses cross-cutting concerns to manage complexity and encourage holistic thinking



Service-Oriented Architecture (SOA) Bringing Business and IT Together



Identification of Business Services



Selecting the Right Services to Expose

- Need to first identify the right domains, partners, processes and finally the services to be offered
- Understand your criteria for selecting services which are most likely to succeed
- Consider people, data, process and other issues in selecting the ideal first services
- Start small with what you know will work and deliver early benefits

SOA is about services - Make the effort to get it right

Getting Lost in the Semantic Forest

- Semantics are the meaning behind the messages and services
- Business people must give this adequate focus - do not delegate to IT
- Often involve multi-party discussions and alignment to industry standards
- Start with an industry or domain specific reference model
 - _ Use an existing one – this is not a good place to re-invent the wheel

Business reference model will be key to success

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The difference between visionaries and dreamers is that visionaries make the dreams come true

Government's Business Transformation Imperative

Whether the organization requires **dramatic changes** or **incremental improvements**, managing government modernization in the face of growing constraints requires a new way of thinking

Demands

- Rising customer expectations
- Political pressure/visibility
- New and expanding scope and mandates

Constraints

- Reduced budgets
- Government personnel shortage
- Aging infrastructure

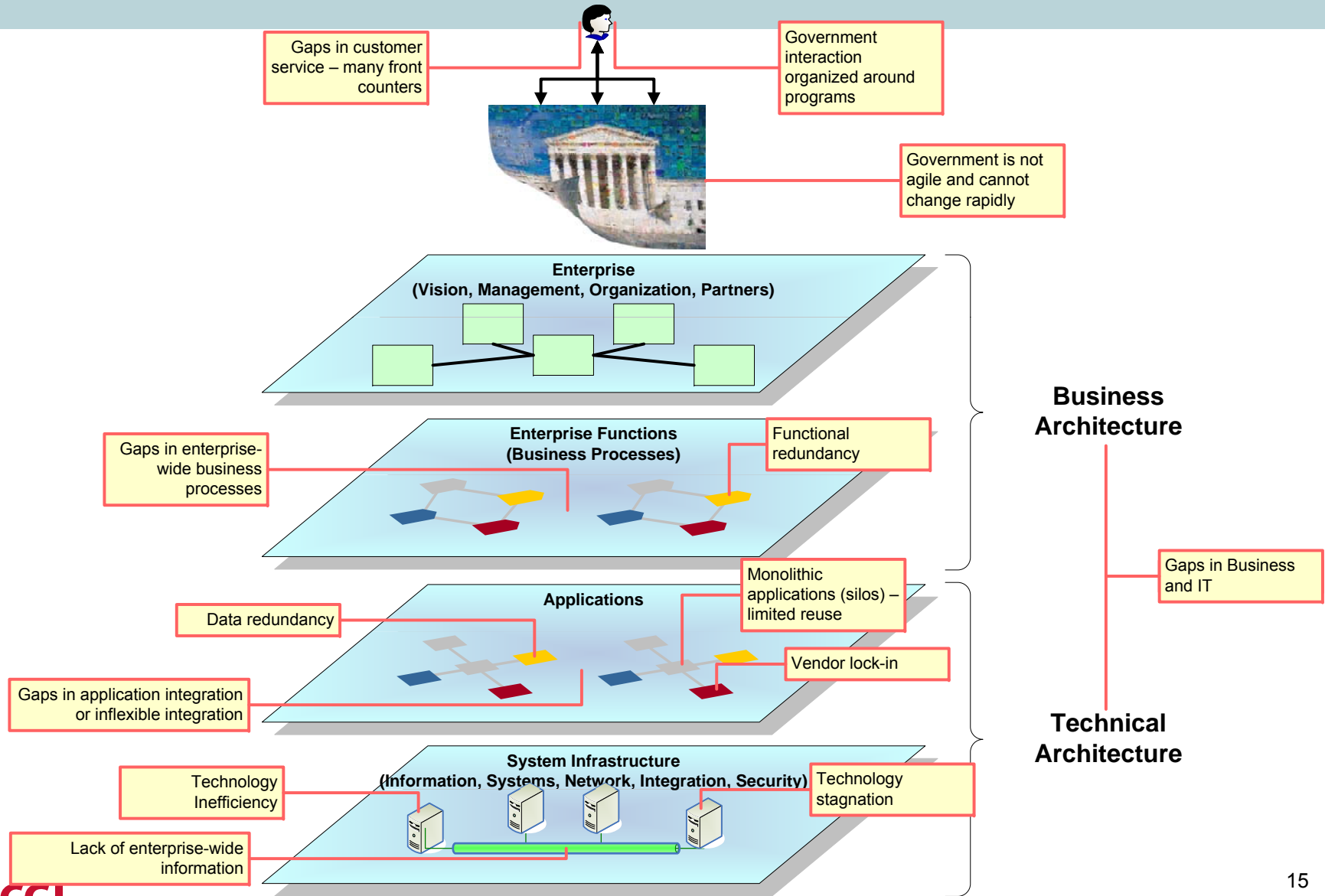
New Technology Enablers

- Emerging standards
- Inexpensive computing
- Web 2.0, SaaS, Enterprise Architecture

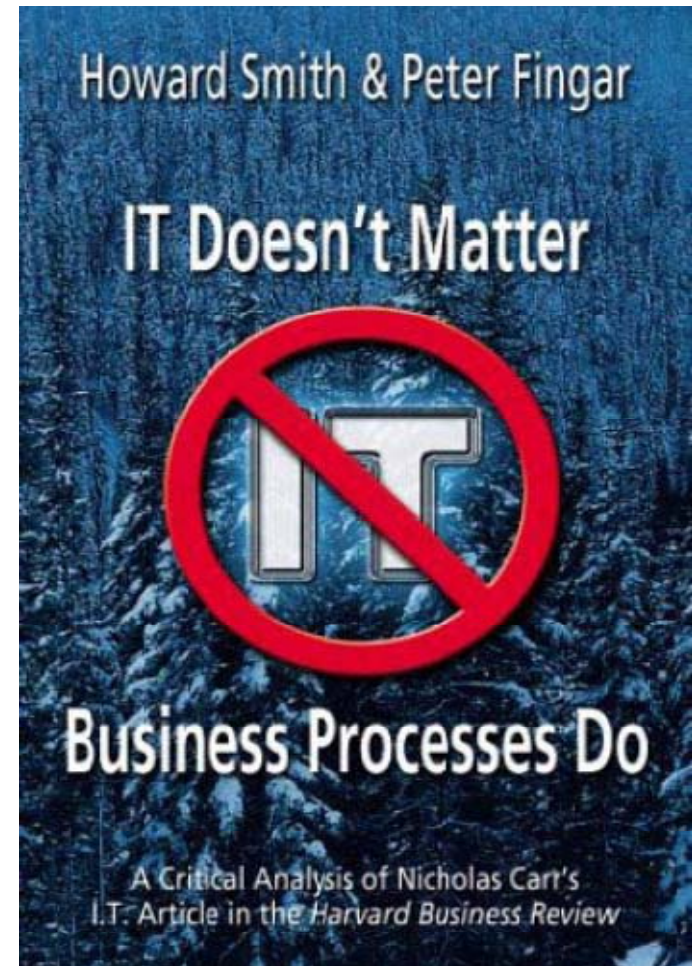
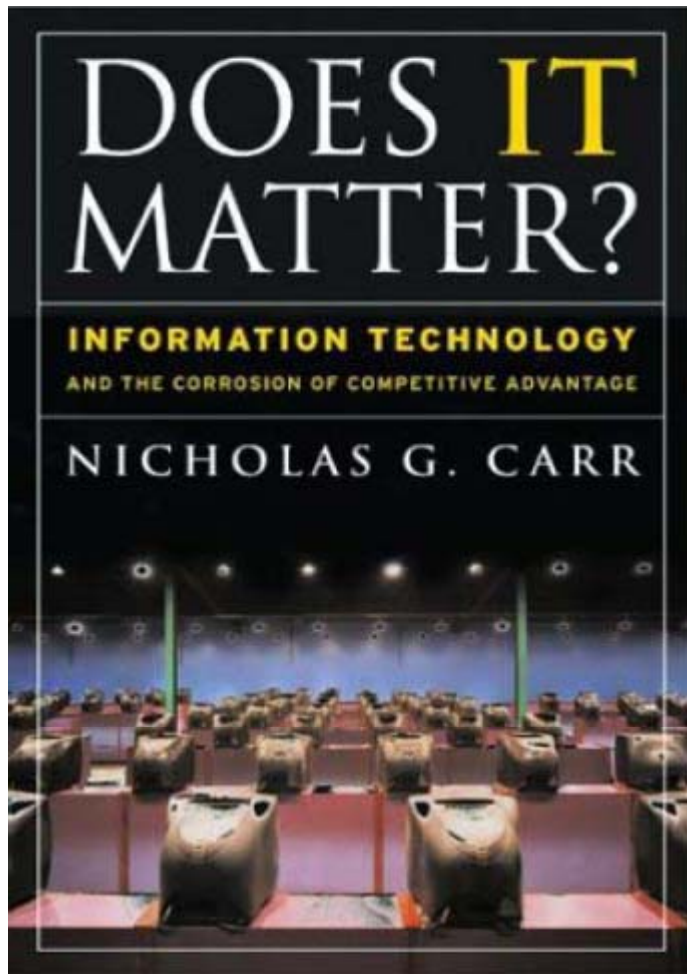
Government Imperative

- Spend less, but spend smarter
- Improve service to customers and internal users
- Reduce total cost of ownership
- Get the most out of investments already made

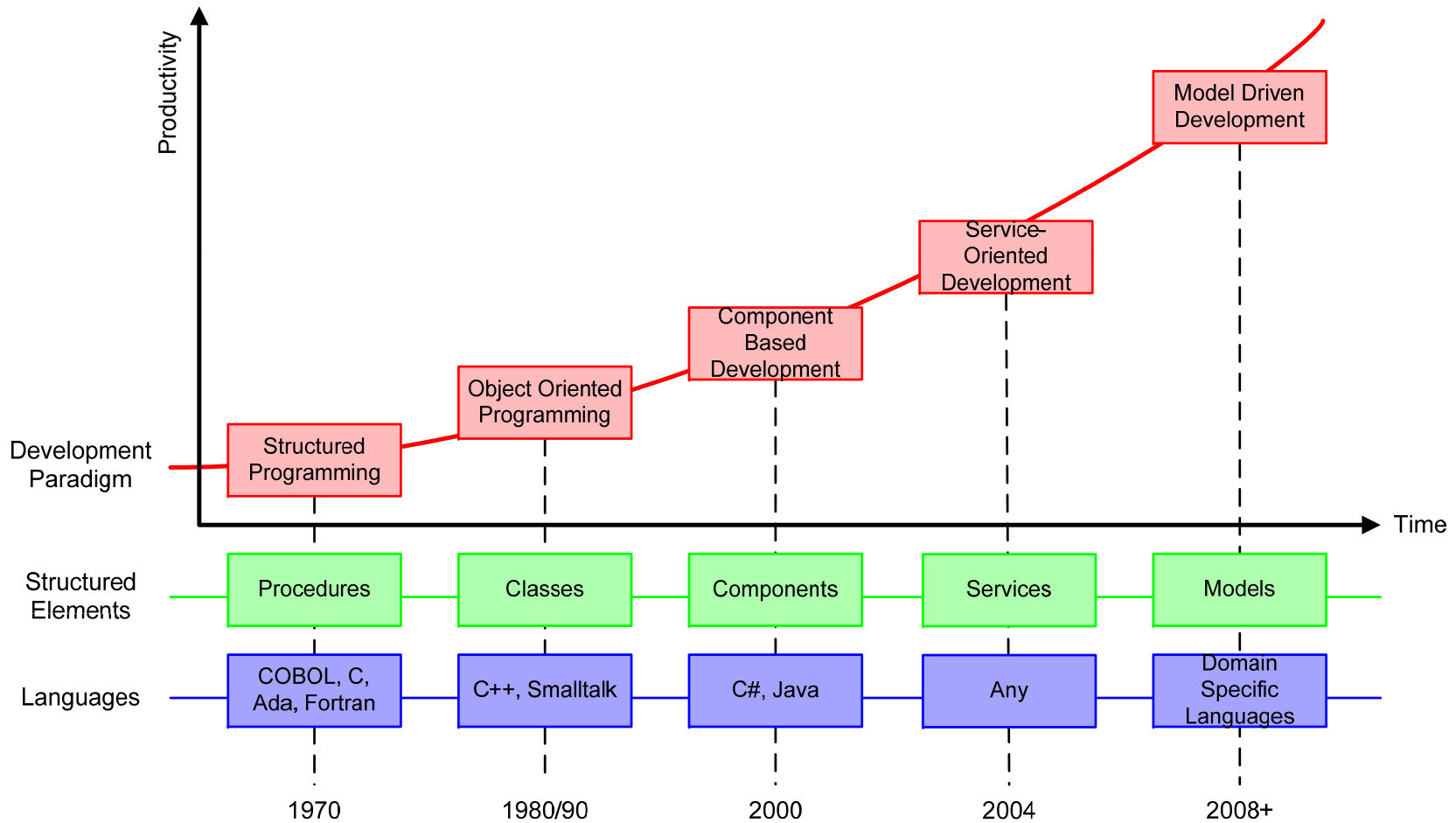
But The Reality Is ...



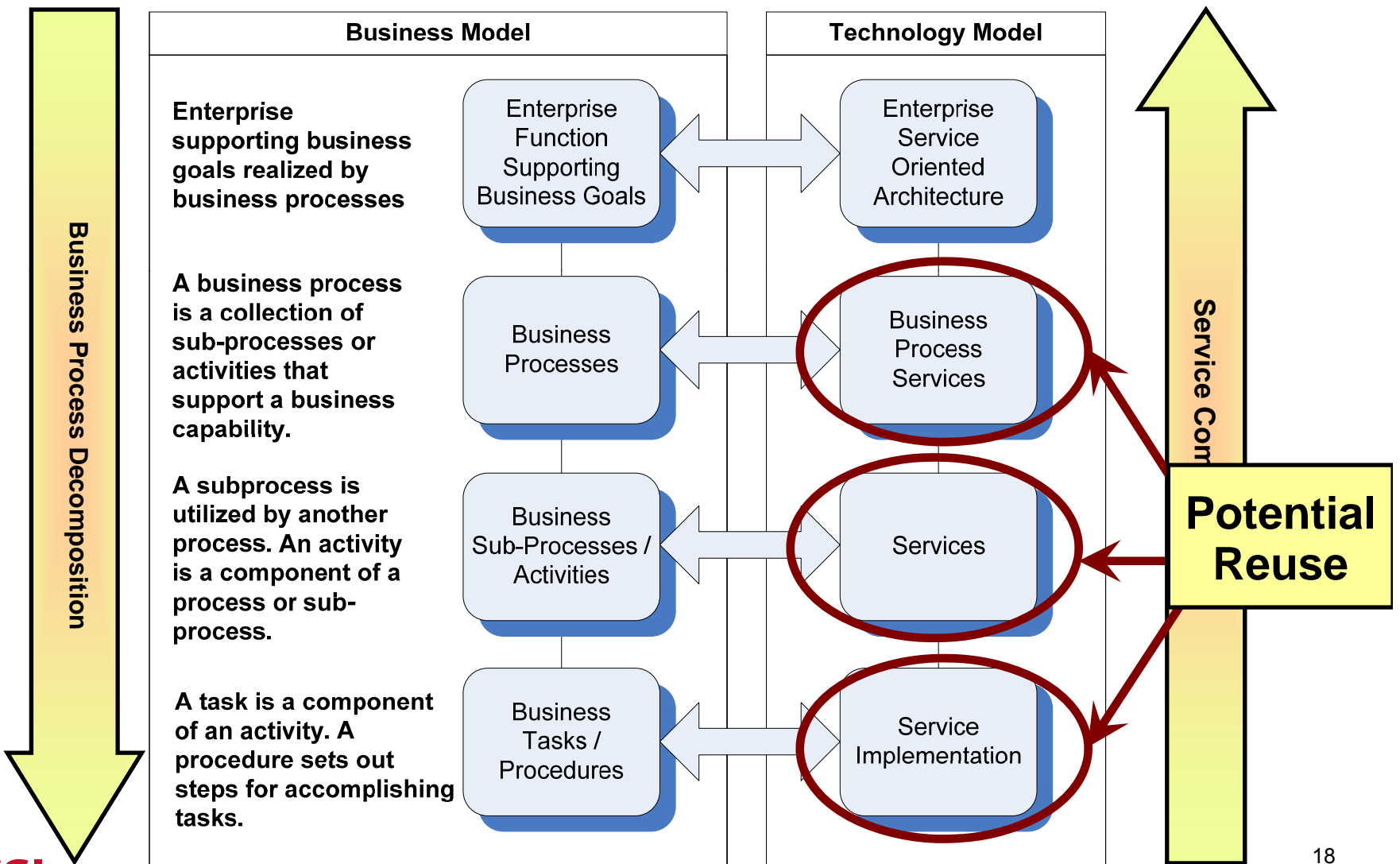
The Business-IT Divide



Trends in Application Development



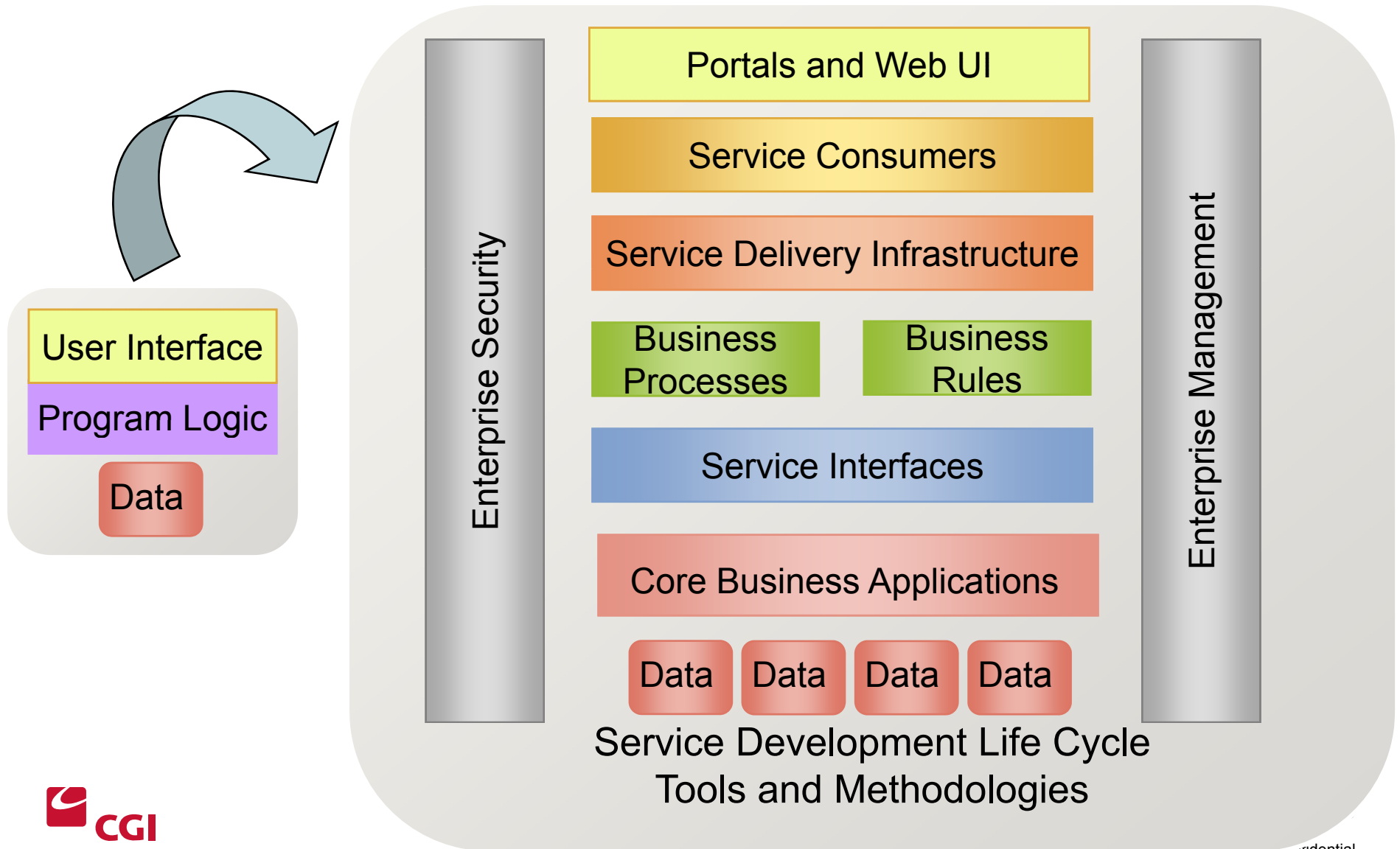
Business – Technology Model



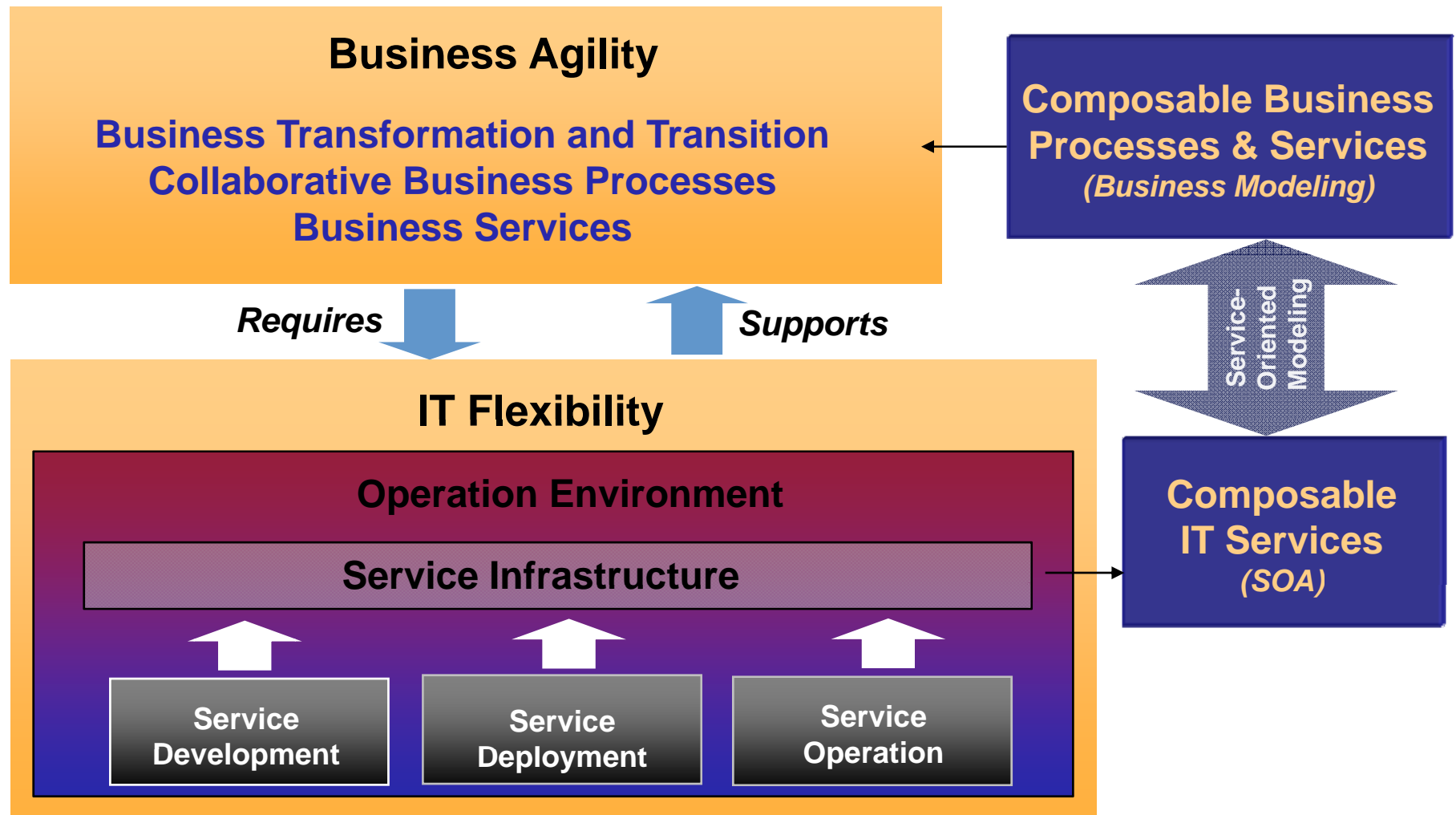
Business Process Requirements

- Make process flow control explicit; decouple it from the underlying technology; span process scope and life cycle
 - = Process flexibility
 - = Business agility
- Enable business professionals to make process changes
 - = More immediacy in linking to business needs
- Get immediate feedback in context of process definition
 - = Improved visibility of current operating conditions
 - = Opportunity for rapid process modification
- Process models + KPIs provide foundation for software-service definitions
 - _ Foundation for SOA to service business needs

Building Agility – ESOA Logical Architecture



Enterprise SOA Leads To ...



A Process Driven Organization

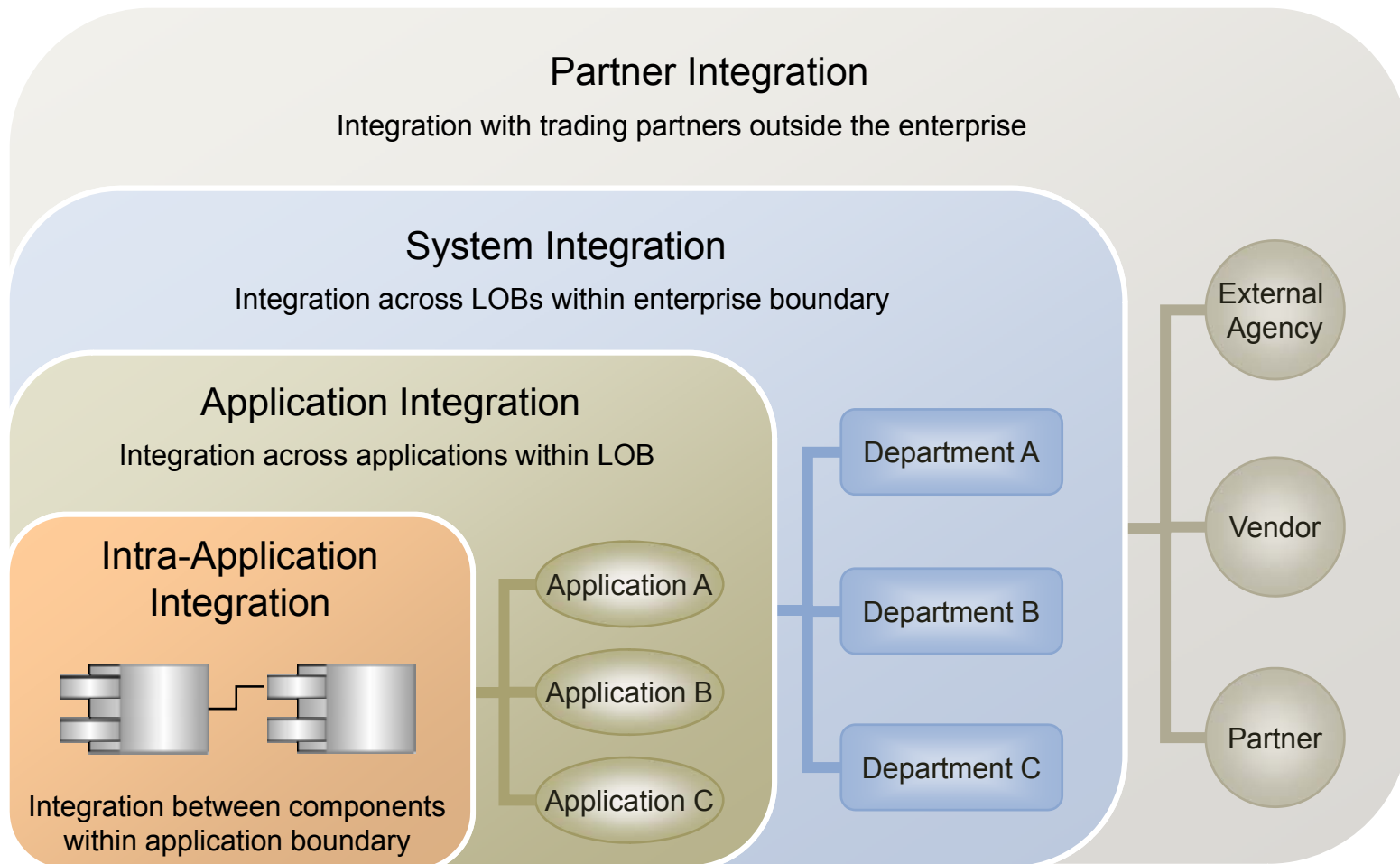
Functionally Driven

- Roles and responsibilities are aligned by functional area.
- Business leaders have little process visibility beyond their functional area.
- Business rule changes rely on IT department to schedule changes to application code.
- Handoffs are implicit.
- Risk analysis is led by business leader experience, intuition and data analysis.

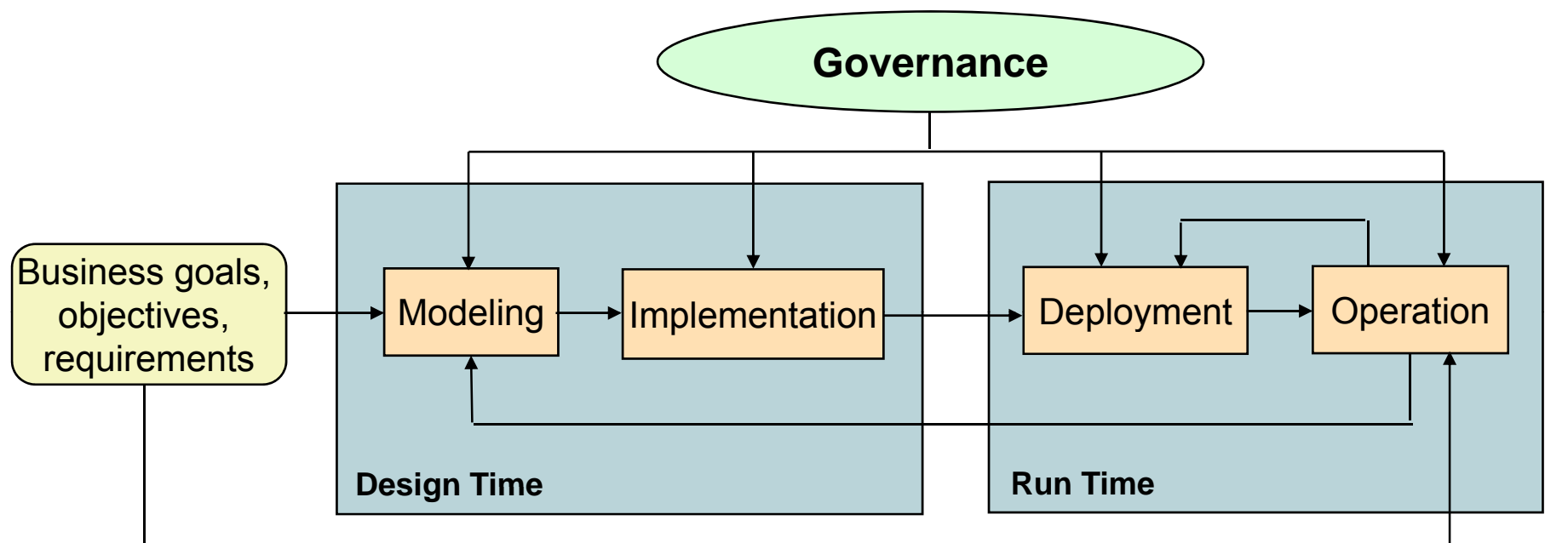
Process-Driven

- Roles and responsibilities are aligned by business process.
- Business leaders have broad visibility of the end-to-end business process.
- Business rules and process steps are changed by business process owners.
- Handoffs are explicit.
- Risk analysis is led by simulations based on current operational conditions.

Service Integration Models



Enterprise SOA Service Life Cycle



- Business Process Modeling
- Business Service Modeling

- Infrastructure implementation
- Policy and control-points implementation
- Services and workflow implementation
- User interface implementation

- Service packaging
- Service change management
- Services configuration
- Service provision and orchestration
- Identity and security management
- Data integration

- Event correlation
- Service monitoring
- Operation analysis and improvement
- Business process management
- Workload and policy management

SOA Governance

- The nature of a trust in an SOA raises the bar in terms of quality in service offerings
 - ▬ Services are used by clients/partners, and implicit in their use is a trust
 - ▬ A trust that the service will be stable and always work as expected
 - ▬ That trust is the foundation of the relationship between the business and their client/partner

Governance is key to delivering on this requirement

SOA Governance – Why is it Needed?

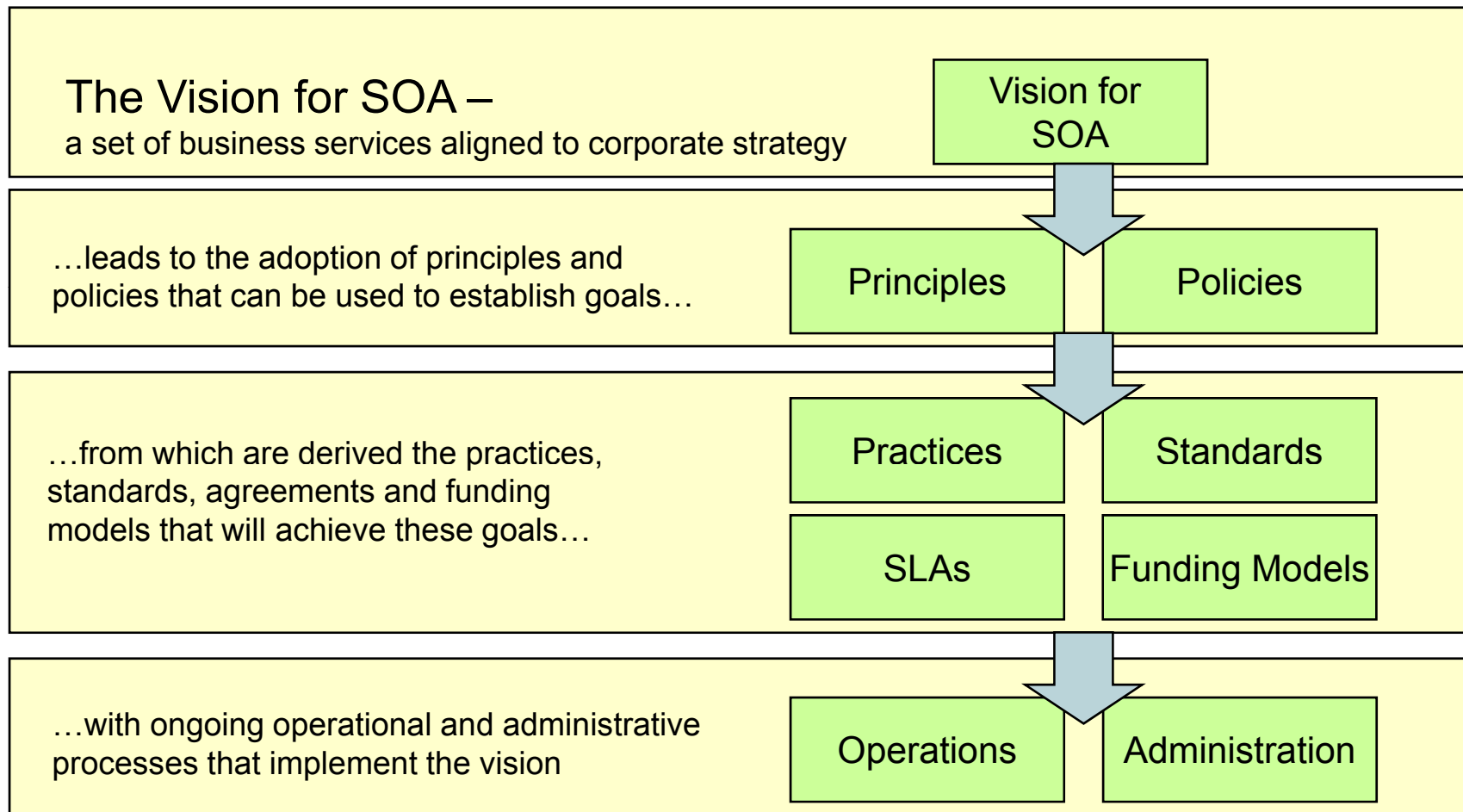
- An SOA introduces a number of elements that demand a stronger need for governance
 - = A new operational entity – the “service”
 - = A diversity of new participants (service authors and consumers)
 - _ The ability to easily make changes
 - = A dynamic environment
 - = New technology
 - = The need for new forms of contract and trust
 - = Increased complexity, increased number of decisions to be made
 - _ Dangers of service stove piping
 - = Diversity of financial and human motivations

SOA Governance – What is it?

- SOA governance is a management architecture
 - _ A decision framework
 - = An accountability framework
- Governance represents the rules, i.e. the processes and practices for how decisions get made
- It is composed of People, Processes and Tools

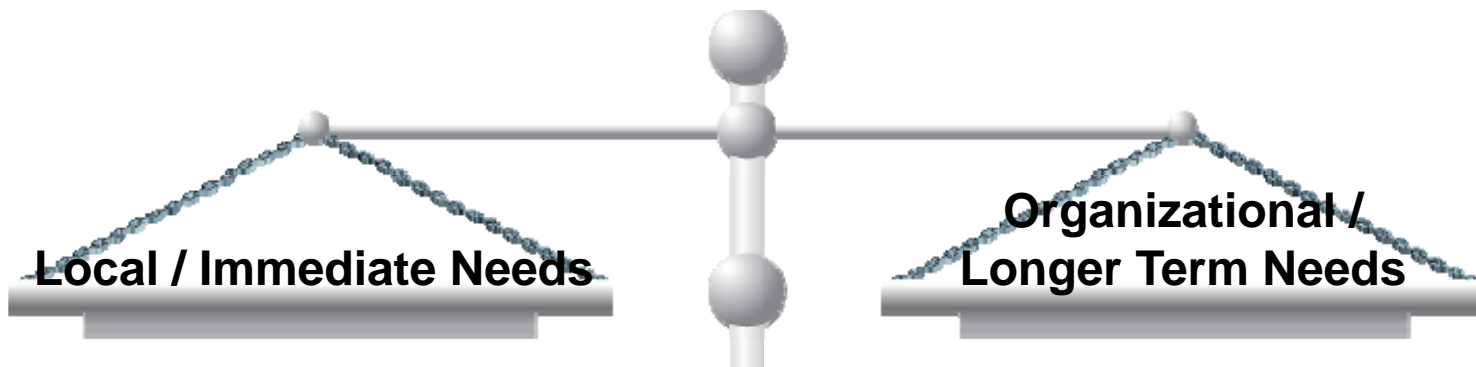
Governance is what promotes the correct behavior from the SOA participants

SOA Governance – Connected to Vision



SOA Governance – A Balance

Governance must strike the balance between the competing requirements of:



Local / Short Term

- Meet immediate business need
- Fast implementation
- Low cost

Organizational / Longer Term

- Align to SOA principles
- Design for re-use
- Design for agility
- Adherence to standards
- Total cost of ownership
- Aligning to organizational strategy

SOA Governance – Funding

- Who pays for infrastructure and common services in this new environment - this is a difficult question
- There are a number of approaches:
 - Core funding from a central authority
 - First user of core or common capability pays
 - Usage based billing for common services
 - Tax based billing for common services
 - Free market to allow best services to survive
 - Forced monopoly to minimize overall costs



Funding Model will Impact Behavior

SOA Governance - Establish Metrics

- Define and put in place good success metrics
- Metrics should be at a business level of abstraction
- Metrics should be tied to business processes that use SOA
- Establish formal process for monitoring metrics and responding to them
- Link metrics with governance processes

Measure for business success

SOA Governance – Final Thoughts

- Change is a constant in a loosely coupled world
- The Internet is an example of what SOA might look like
– WITHOUT GOVERNANCE!
- Governance is difficult
- It won't be long before we have to deal with legacy web services
(avoid the problem now, with proper governance)

Governance is the balance between

**Absolute
Control**



Agility

Agenda

1. Why SOA And Why Now?

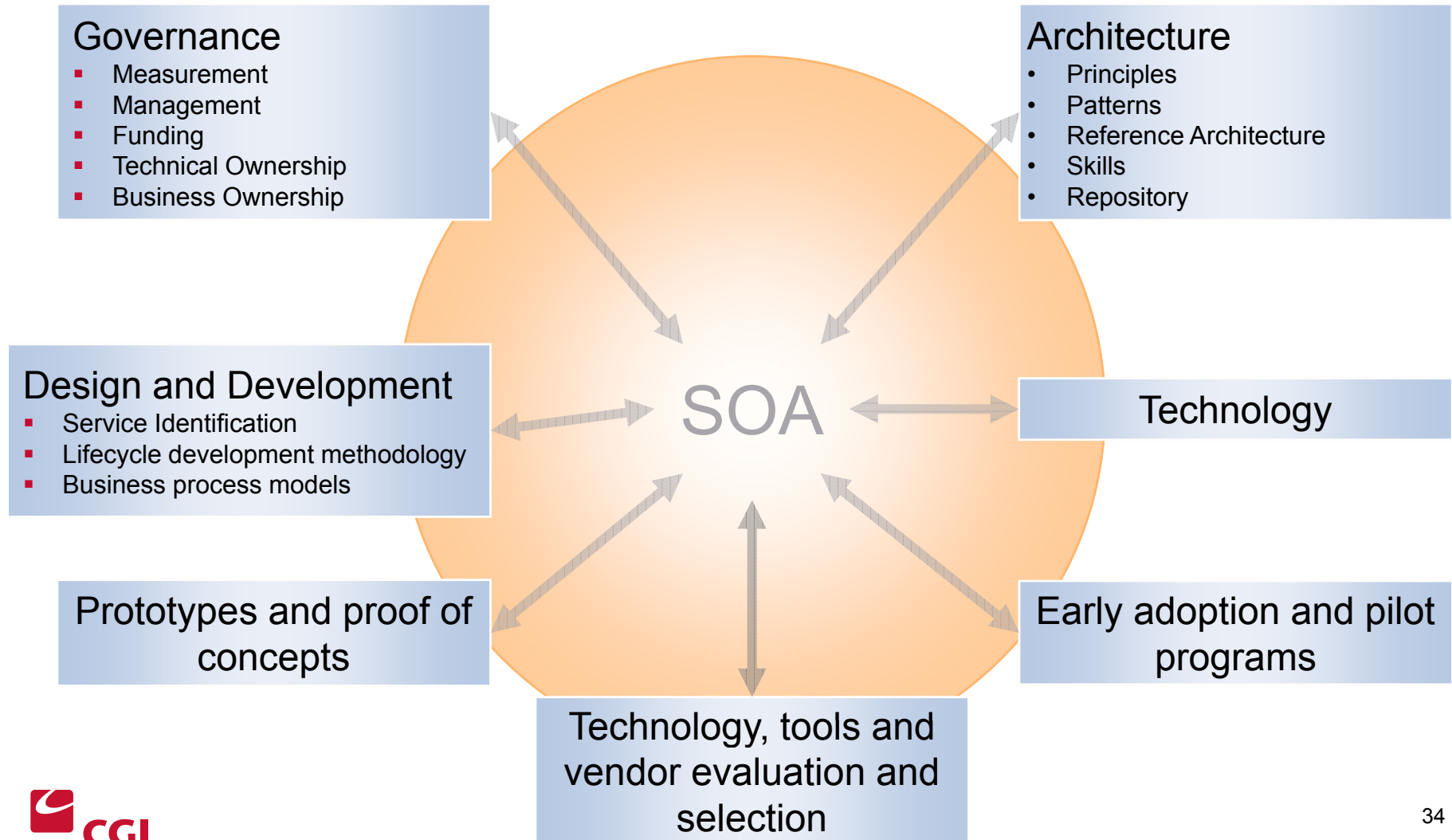
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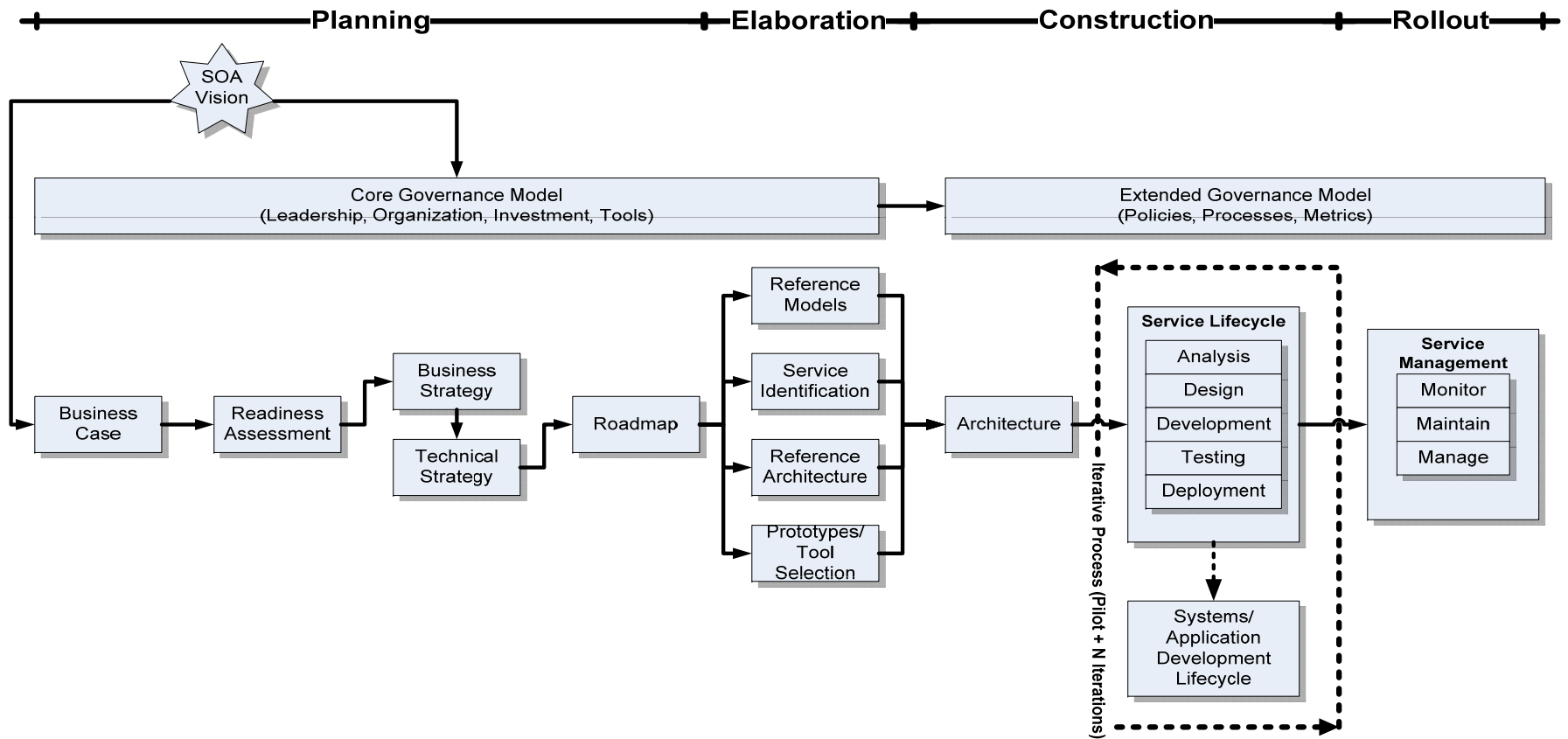
4. Final Thoughts

*The architecture of our future is not only unfinished;
the scaffolding has hardly gone up
- George Lamming*

Factors Influencing Enterprise SOA



CGI SOA Implementation Methodology

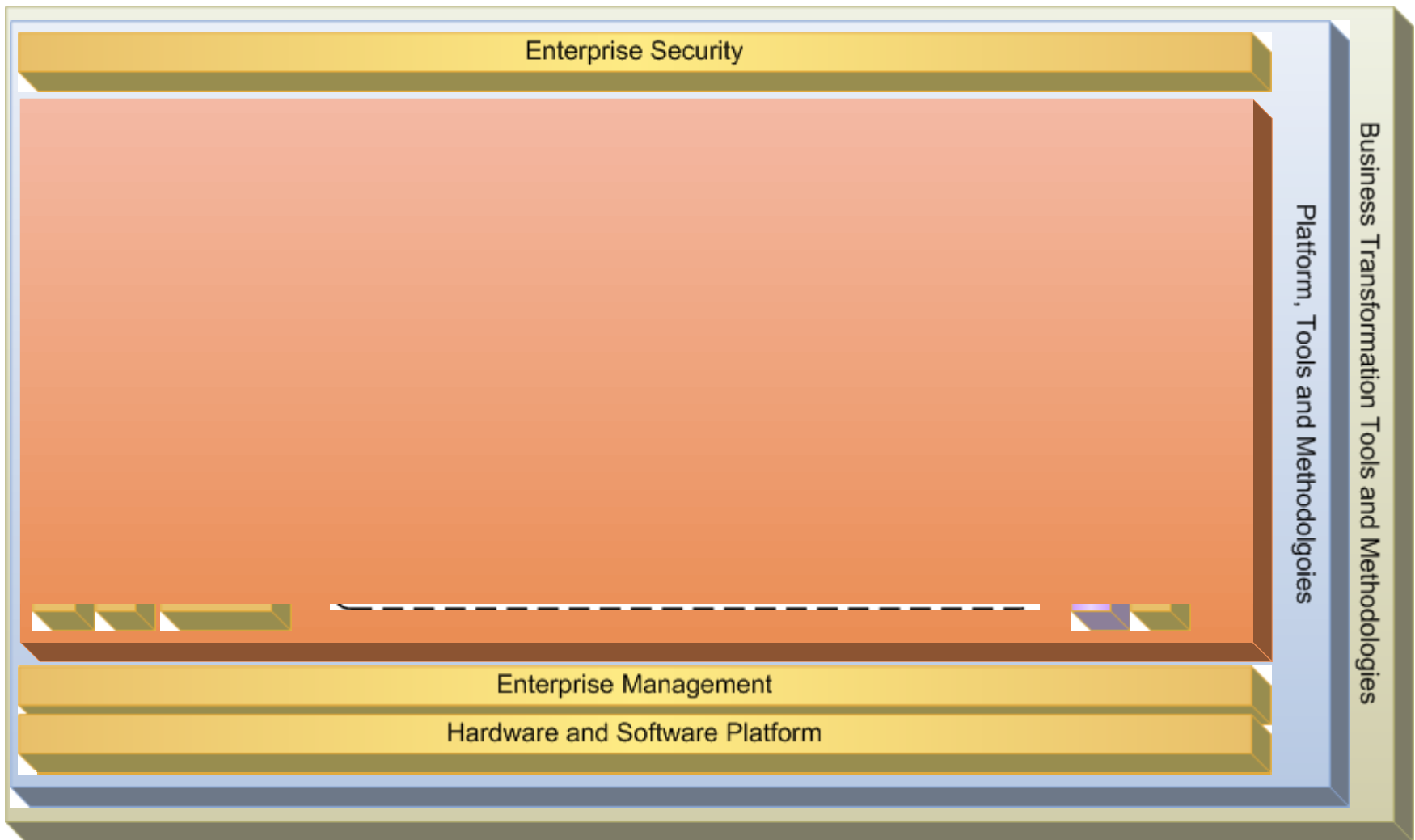


SOA is a Journey – Not a Project

- At some point it will not be called SOA, it will be called Normal
- Plan the transition to normal operations from the start
- Include key players from the business and operational groups
- Integrate into the normal program and budget planning processes (vs. a separately funded project)
- Selecting the right speed for your journey is key to success

SOA transforms to “Normal Business”

CGI Government Reference Model



Why You Should Care?

- Agility

- Separation of business process logic and business rules from applications
- = Business processes can be changed easily
- Shorter time-to-market for changed processes

- Opportunistic

- = Existing services can be used to create newer (value add) services and business processes

- Higher Quality

- Eliminating redundancy reduces inconsistent data and inconsistent behavior
- = Use of open standards and well-defined architectural constructs leads to better understanding

Why You Should Care? (contd.)

- Efficiency

- Reduced cost and risk through “black box” reuse
- = Increased IT productivity through reuse
- = Leverage best-of-breed COTS components for increasingly larger areas of the IT infrastructure

- Vendor and Platform Independence

- = Service implementations can be replaced as long as interfaces stay the same
- = Services can be relocated from one platform to another

- Reduced Cost

- = Consolidation of infrastructure leads to fewer components and hence reduced initial cost and license
- Simpler infrastructure management

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1. Why SOA And Why Now?

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3. Moving to ESOA

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Key Takeaways

- SOA and its technical implementation are being used to solve a business problem
- Account for impact on existing organizational structure, processes, and IT policies/procedures
- Requires executive sponsorship and commitment
- Services and application integration must be addressed during application design time—not after the system is completed
- Adopt a phased approach to SOA
 - = Start by creating a simple set of services for existing applications
 - = Evolve catalog of services by adding new services and through service aggregation (service composition)
 - = Add orchestration to service interactions

Key Takeaways (contd.)

- Encourage shift in thinking from application-centric to process-centric
- Recognize that technology and technical implementations are not the hard part
 - Do not select technology before understanding your requirements
- Build partnerships with industry leaders and technology vendors
- Establish/leverage technical and interoperability standards
- Develop service taxonomies
- Develop prototypes to experiment with newer tools and technologies
- Accept mistakes made, backup, and try again

The Future and Its New Realities

- Today business users trail technology, in the future we believe that the business user will drive innovation and technology will simply be the strategic lever used to accomplish business objectives
- Adopt SOA and adapt to empower your business
- Target solutions to assembling components and services
- The rhythm of convergence has accelerated, making new innovations necessary each time
- To succeed, IT organizations must evolve and adapt with increased agility
- SOA can make your business agile

Today

An information society centered on processing information

Tomorrow

A knowledge society centered on using information



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our commitment to you
We approach every engagement
with one objective in mind:
to help clients win and grow.