Application Management: The Hub of Consolidated Operational Management

Center of Excellence Approach
Towards Consolidated
Operational Management
for J2EE and .NET Applications

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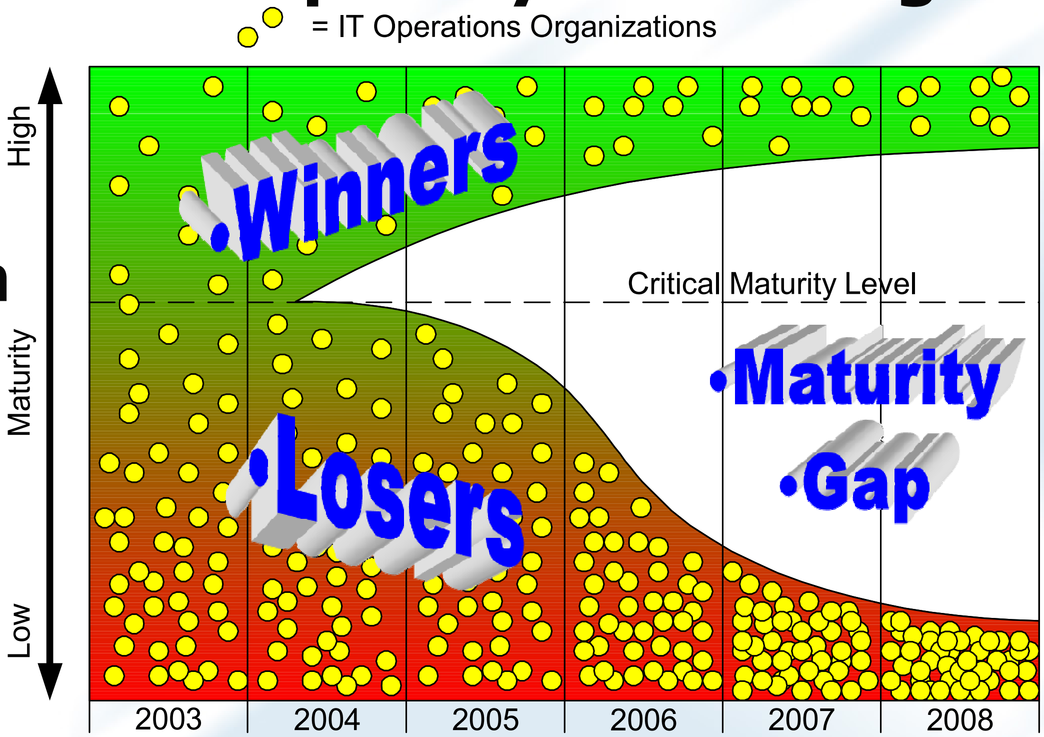
The Challenges for IT Organizations

- A disruptive and irreversible shift is upon us
  - Those caught unprepared for the changes will become irrelevant
- The need to respond to complexity and change is paramount
- Business leaders generally do not perceive value from IT investments
- Chaotic operations and a lack of discipline threaten IT viability



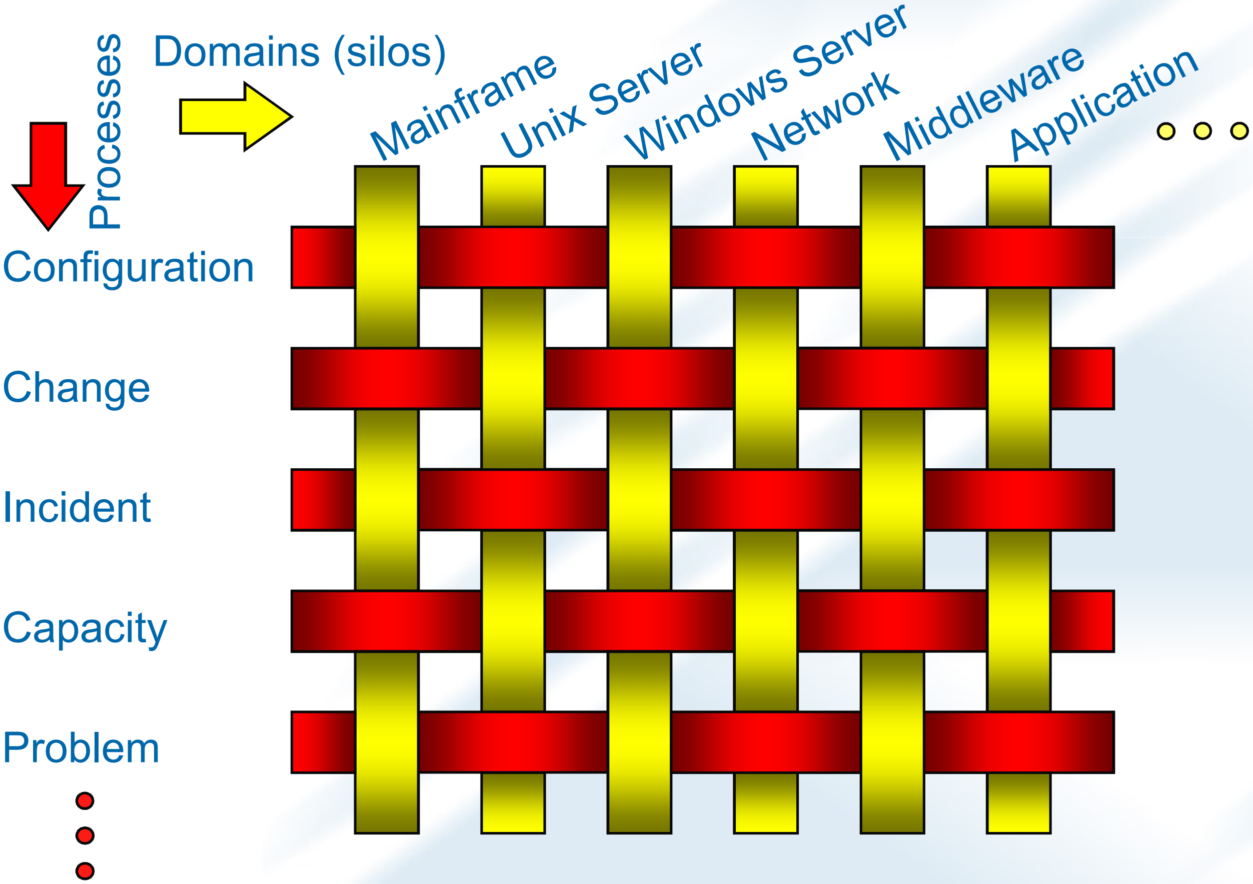
Failure CAN be Avoided

- **Adopt structured processes (dismantle silos)**
- **Implement appropriate automation technologies (consolidate around processes)**
- **Employ advanced analytics to drive automation**
- **Use configuration and change management to foster discipline**
- **Shift a service focus toward applications**
- **CHANGE harmful cultural habits and org structure**

> "In the struggle for survival, the fittest win out at the expense of their rivals because they succeed in adapting themselves best to their environment."
>
> *- Charles Darwin -*

Process Discipline

- The processes define the operational methods used and all must span silos to be effective
- ITIL is a good start, but it is incomplete
  - Provisions for maturity models lacking
  - Use ITIL as a foundation not the final solution



Processes

Domains (silos)

Mainframe

Unix Server

Windows Server

Network

Middleware

Application

○ ○ ○

Configuration

Change

Incident

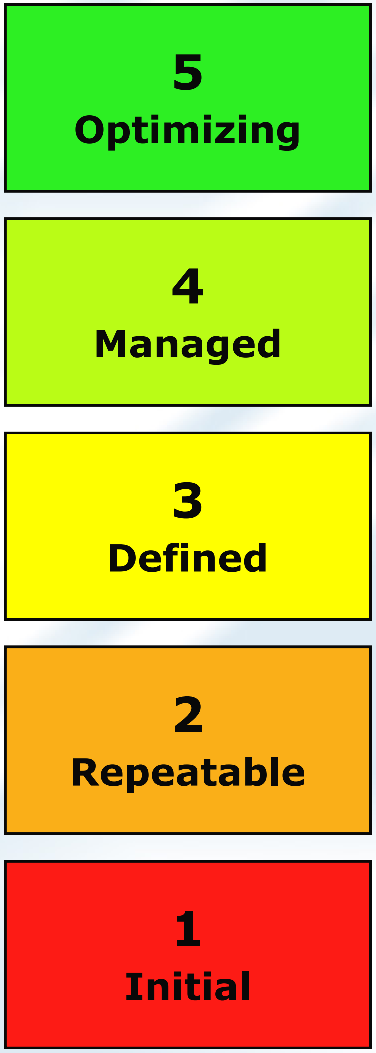
Capacity

Problem

⋮

Process Maturity

- Process capability varies within IT organizations
- Assess your level for each process and then formulate a plan to move to the next level
- Maturity is a continuum
  - Nobody jumps right from 1 to 5
- Most can start with incident and then configuration and change
  - Capacity, asset, etc. follow
  - Incident management can leverage existing monitoring technology



5 Optimizing

4 Managed

3 Defined

2 Repeatable

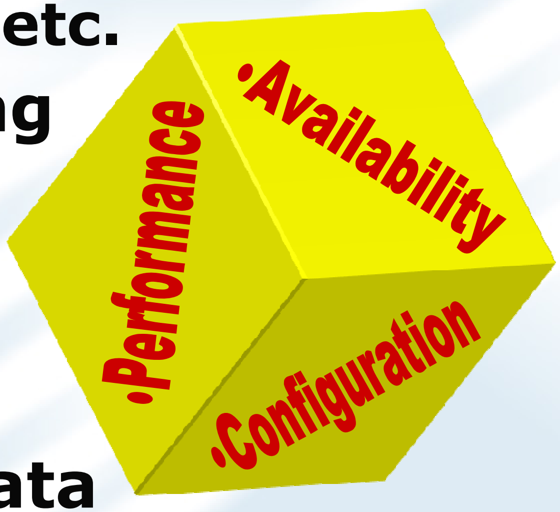
1 Initial

A Shift from Infrastructure to Applications

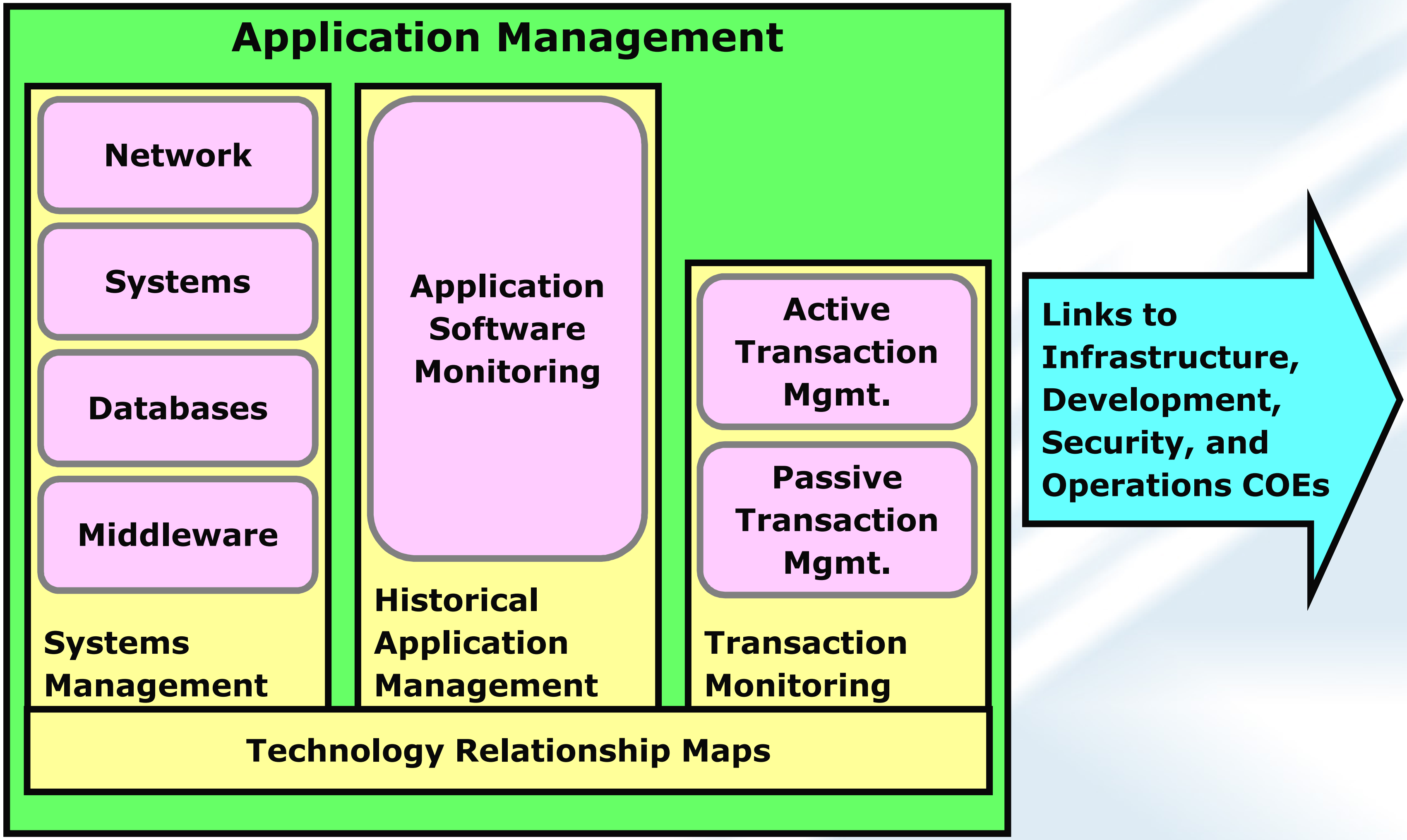
- We have focused too heavily on individual infrastructure technologies without consideration on the entire ecosystem
- A shift to applications and processes is finally gaining momentum
  - Infrastructure is now quite reliable
  - Applications are tangible end user services
  - Application performance continues to plague us
- Infrastructure management remains critical for operations, but not as a service level focus
- Understanding and exploiting internal application structure and behavior is the key to providing valued business services

Many Facets of Application Management

- More than just monitoring
  - Includes configuration discovery, software distribution, performance tuning, etc.
- Must leverage existing & emerging process best practices
  - e.g., ITIL's incident management applies to applications just as it does to infrastructure
- Application monitoring collects data on end-to-end transactions, server-side software components, and relationships
- Develop an application management strategy to span all operational processes and the entire IT organization

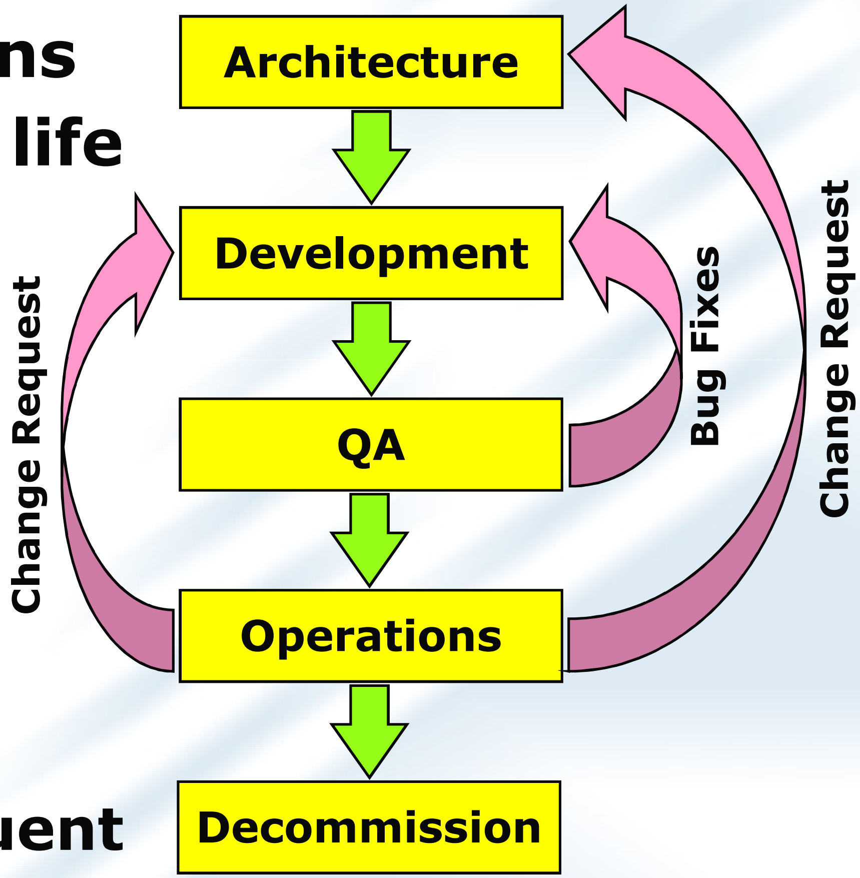


Application Management Employs a Hybrid of Management Technologies


Application Management
Network
Systems
Databases
Middleware
Systems Management
Application Software Monitoring
Historical Application Management
Active Transaction Mgmt.
Passive Transaction Mgmt.
Transaction Monitoring
Technology Relationship Maps
Links to Infrastructure, Development, Security, and Operations COEs

Management in the Application Lifecycle

- Design applications for management & operations
- Information flow across life cycle stages instills cooperation and results in more robust services
  - Better applications equal better services
- Preserve configuration information developed along with applications
  - Enhances every subsequent stage in the life cycle



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Application Management Maturity Model

5 Optimized	Applications are well understood by automation tools, with real-time reconfiguration of resources and adaptation of application characteristics to adhere to business service commitments.
4 Stable	Development and Operations work in harmony to maintain solid application performance and availability. Automated analytics, strong capacity planning, and configuration and change control are common.
3 Improved	Application performance is well monitored and root-cause analysis is becoming automated. Limited capacity planning is in place. Configuration is understood and change management is manual.
2 Basic	Simple performance monitoring is in place to measure response time. Little is truly known about application behavior. Configuration is limited to simple client distribution.
1 Chaotic	Application behavior is not understood. Performance is erratic. Configurations are inconsistent and manual updates, patches, and releases are the norm.

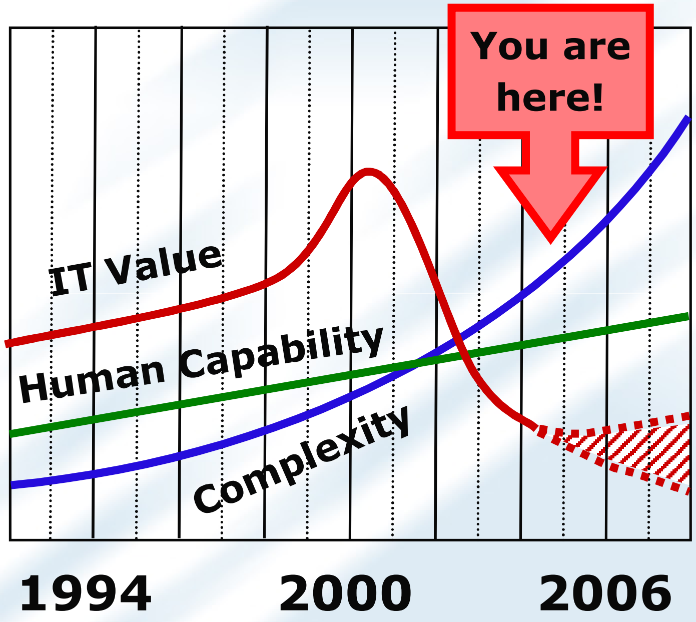
Special Issues for J2EE and .NET

- **These platforms are the foundation for web services**
- **Both offer unprecedented power and flexibility, but also unprecedented complexity**
- **Prospects for managing such applications without knowing the structural details is bleak**
  - **Increased complexity presents more potential failure points and impedes troubleshooting**
  - **Special tools are necessary to gain insight**
- **Both have built-in management services ☺**
  - **Configuration discovery tools still needed**

Configuration and Change Management: The Key to Operational Discipline

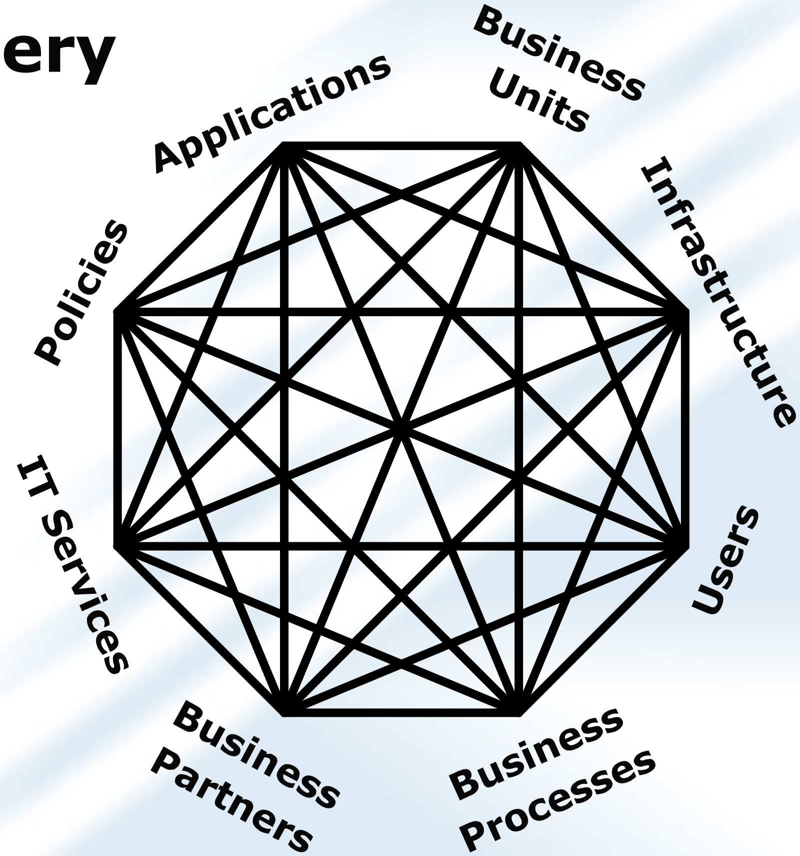
- **Manual configuration is wasteful and error-prone**
- **Most IT organizations lack adequate change management and almost none have automated enforcement controls in place**
- **New architectures, technologies and business demands exacerbate complexity**
- **Compliance is a major driver**

Visibility and Control are the Enemies of Complexity

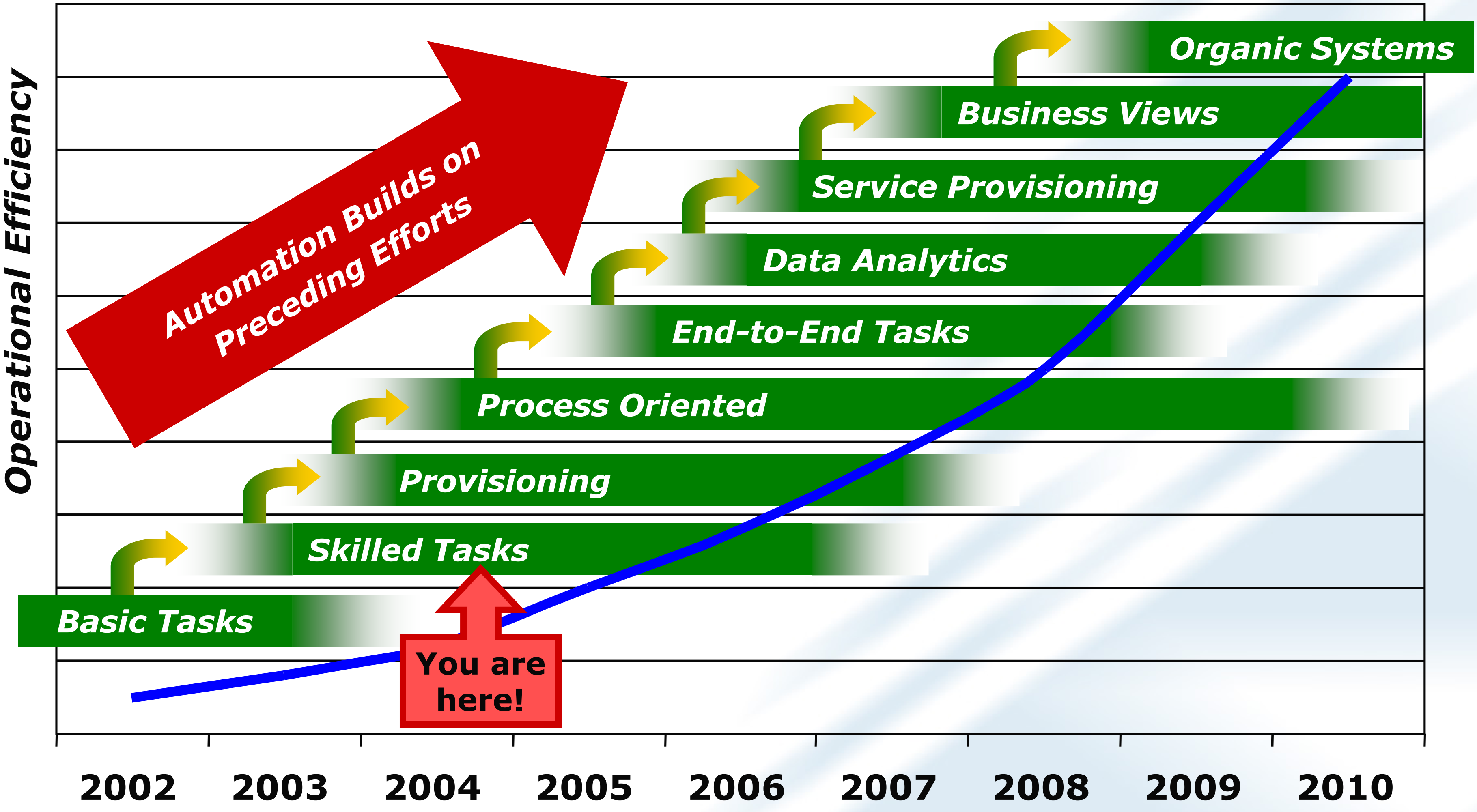


Relationships: The Binding Force

- Relationships define the structure that binds components into services
- Some relationship discovery can be automated
  - e.g., network topology is easy, emerging application discovery products fill a huge void
- Full automation will remain elusive
- Leverage relationships built early in the development process



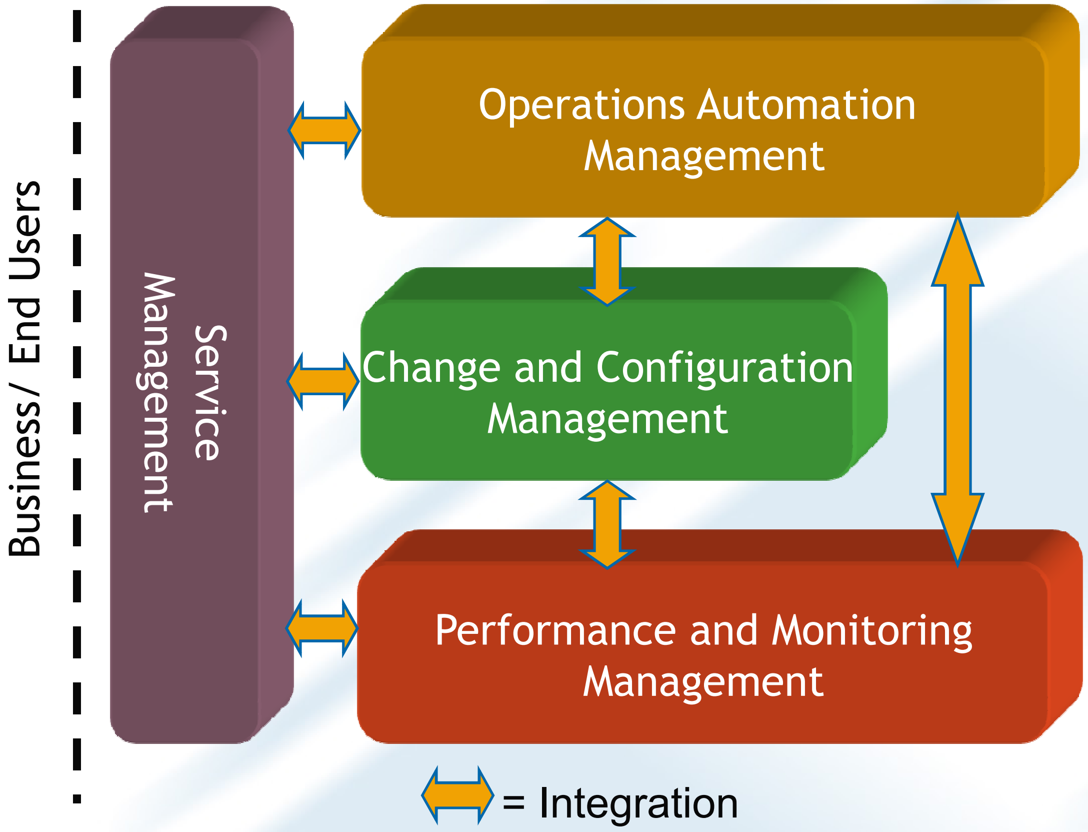
Automate to Accelerate Process Execution



Consolidate Management Tools into a Unified Operational Automation System

- Classify management tools
- Tools do not necessarily align with processes
- Understand the integration points to unify functions
- Seamless integration remains elusive
  - Standards are badly needed but not likely soon

META Group Management Model


Business/ End Users
Service Management
Operations Automation Management
Change and Configuration Management
Performance and Monitoring Management
⟺ = Integration

Portfolio Management as a Means to Management Technology Consolidation

- Seek an “anchor” vendor as a default partner
  - Large, broad vendors fit
  - Main supplier of commodity tools such as server monitoring, network monitoring, etc.
- Augment the anchor with specialized tools
  - Especially when the anchor’s solution is inferior or missing
  - Everybody wants best-of-breed tools but sometimes good enough is good enough
- Minimize redundancy
  - e.g., only one server agent

Keep what works
Discard what doesn’t
Buy what’s missing

Ensure Success with Application Management

- Begin with performance monitoring
- Expand with application discovery tools and map components using relationships
  - This will align with a broader configuration management process development effort
  - J2EE and .NET applications are a good starting point because of their inherent visibility
- Use this configuration information to benefit incident management (root cause) and performance optimization among other needs
- Involve every single IT staff member in application management
  - Management needs to be a consideration throughout the entire development life cycle