Tools and Technology for Operational Automation

META GROUP

The State of Operational Automation

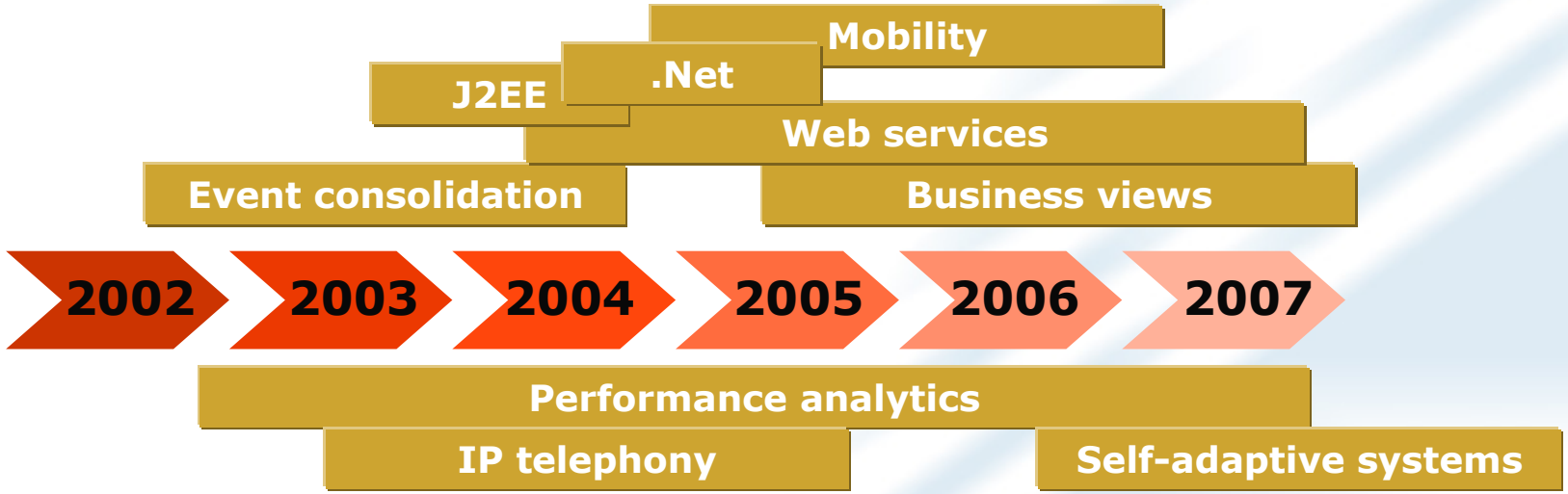
- IT organizations possess several infrastructure and application management (IAM) tools, but they are used in pockets of the operation
- Tools have done little to effectively automate broad operational processes
- Dependence on "heroics" by highly skilled staff continues to inhibit operational maturity
- Technology is emerging to automate IT operations in profound ways

Operational Automation Critical Issues

- The current state of management technology and evolving trends
- Management technology unification for process refinement
- The growing use of automation software

Management Technology Trends

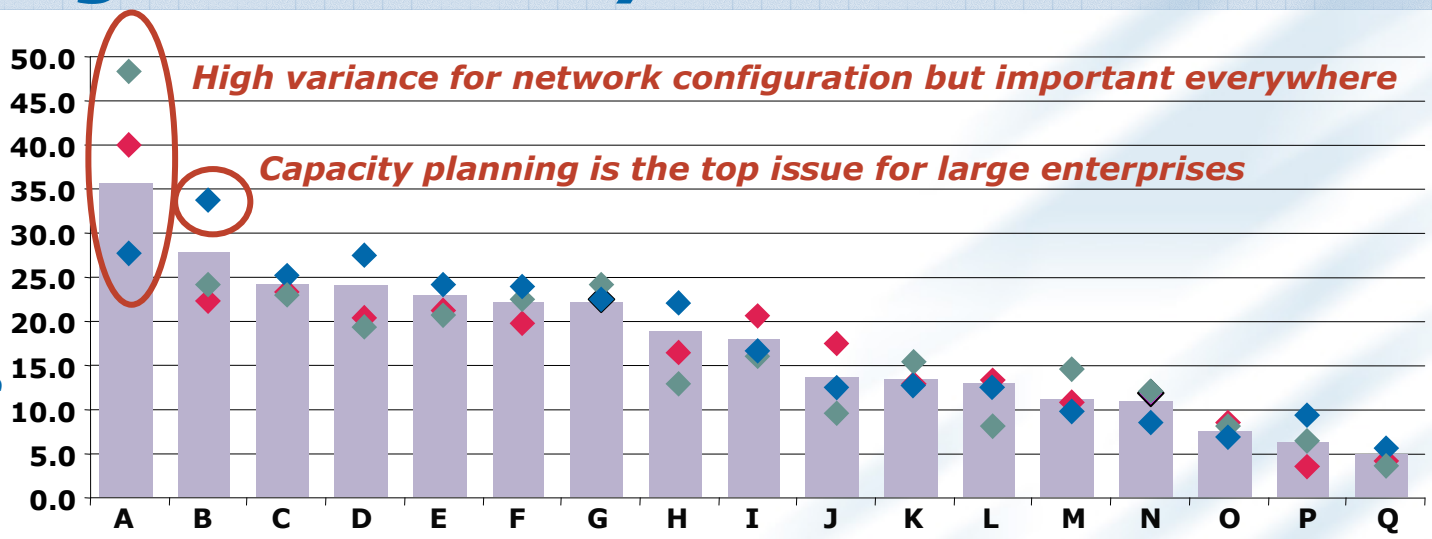
- 2003 management technology market study
- Enhanced technology relationship discovery
- Performance analytics
- Vendor landscape



Push vendors to drive effective automation products and integration standards

2003 Management Study

- *What are the TOP critical issues your organization plans to address in infrastructure and application management in the NEXT 12 months?*



Overall
Small
Mid-Size
Large

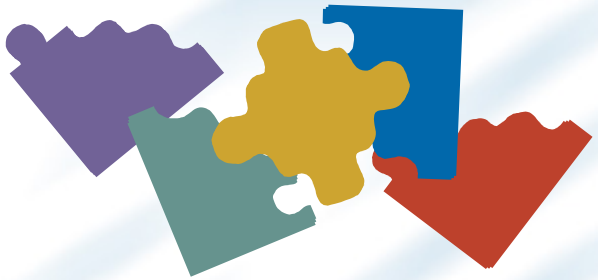
A. Network configuration and monitoring
B. Capacity management/planning
C. Asset management
D. Infrastructure monitoring
E. Application monitoring
F. Application deployment automation
G. Desktop/endpoint management
H. Service-level management
I. Server admin./deployment automation
J. Patch management
K. Service desk
L. Response-time management
M. Self-service
N. Microsoft .Net management
O. Business perspective (console)
P. Chargeback
Q. J2EE management

Exploit relationships in all management disciplines for more automated insight

Technology Relationship Autodiscovery

- Relationships define the structure that binds components into services
- Some can be automated
  - Network topology
- Full automation is fleeting
  - Expect next steps in software relationships
    - e.g., J2EE, middleware
  - Business intelligence tools offer business relationships

Relationships Complete the Puzzle



Without Relationships

With Relationships

Relationships form the context for more advanced analytics of IT information

Performance Analytics

- Simple performance monitoring is commodity
- Extract performance anomalies from normal fluctuations
  - Static thresholds are poor
- Apply statistics and other mathematical methods with roots in science and academia

Scientific Pursuits Are Helping IT Efficiency

Seek vendors with advanced performance analytics to augment or replace current tools

Vendor Landscape

- Large vendors are still struggling, but improving
- Tough market for small vendors, but they will remain as innovators
- M&A activity returning
  - Market consolidation
  - Expect new large players (challengers and other IT vendors)

Partial Vendor List

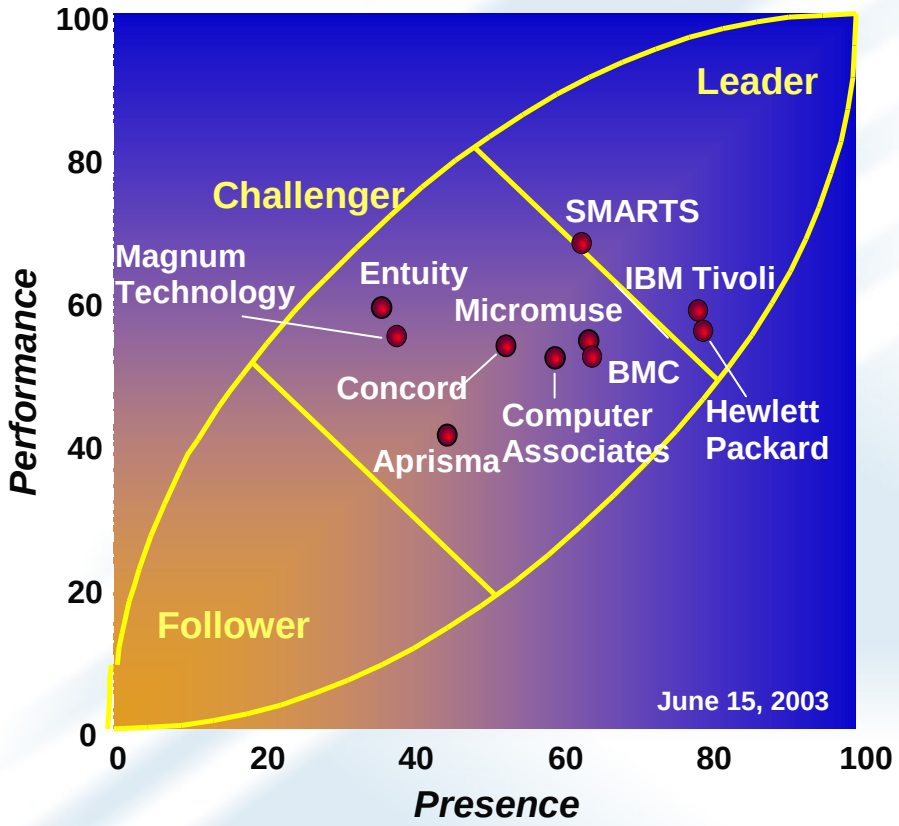
Behemoths	IBM Tivoli, HP OpenView, CA, BMC
Challengers	Mercury, Compuware, NetIQ, Micromuse, Concord, SMARTS, Quest
Small	OPNET, Marimba, Novadigm, Keynote, Wily, TeamQuest, Aprisma, NetScout, Gomez, InfoVista, Altiris, Ipswitch, Managed Objects
Emerging	Entuity, Relicore, Fidelia, Magnum Tech, Rendition, NetQoS, Troux, Quantiva, Silas, Configuresoft, Ecora, Gold Wire, Opsware, Voyence

Reduce vendors to consolidate and simplify operations, but do not sacrifice capability

Process-Driven Technology Consolidation

- Unify incumbent tools
  - Many tools, little value
- Business views of management information
- Workflow products gaining ground as processes mature
- Integration continues to be an issue

Event Management METAspectrum℠

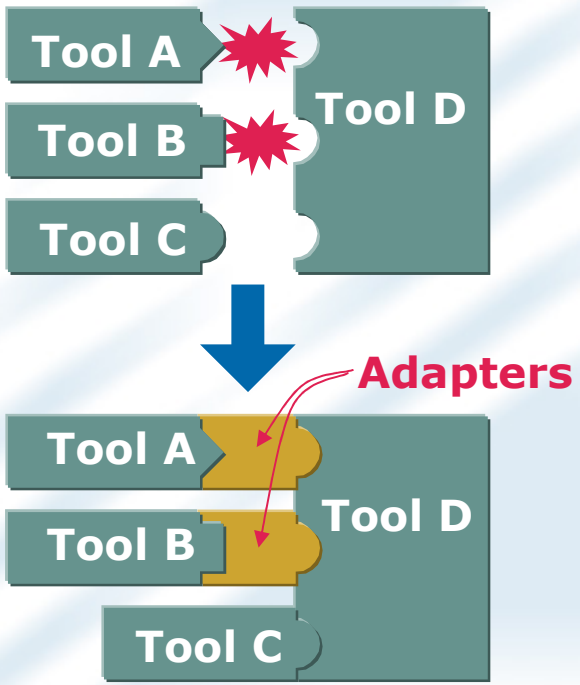


Begin consolidation with existing tools

Consolidating Incumbent Tools

- The existing glut of core tools must be merged and integrated
- Focus on processes, not tools
- Portfolio management
  - Keep what fits, discard or replace what does not, buy new where necessary
- Identify opportunities to leverage common functions

Integration Adapters May Be Necessary

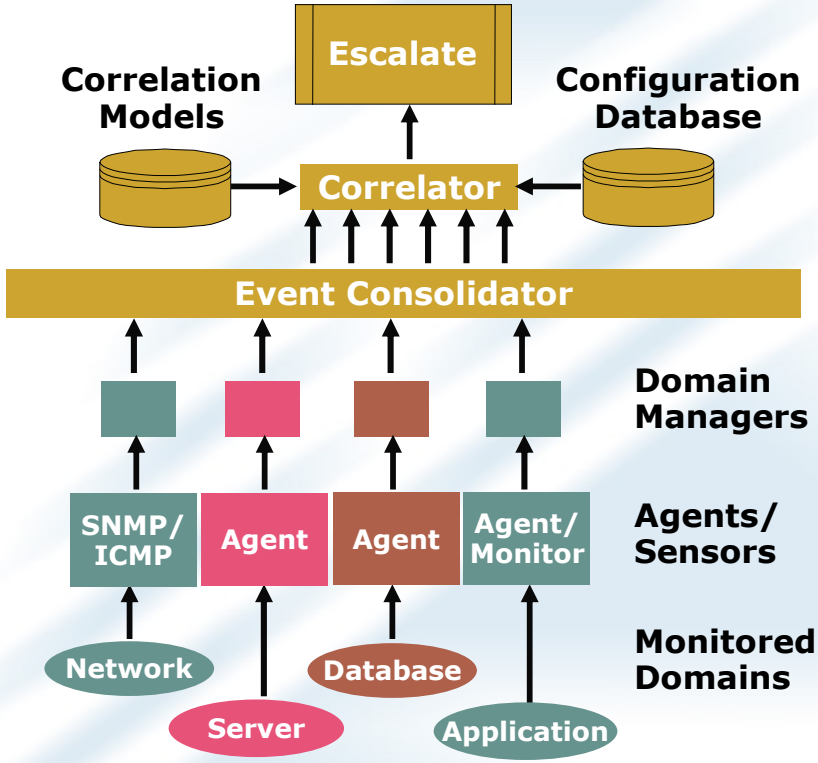


Consolidate tools and integrate them for optimum effectiveness and efficiency

Tool Integration

- Data sharing between applications is crucial
- Frameworks failed on easy integration promise
  - Expect a rebound of this concept, but be skeptical
- Standards like CIM hold promise, but vendor adoption is slow
  - Little incentive to adopt

Event-Level Integration Is Often Sufficient



Integrate management technologies to offer business views for higher business value

Business Views

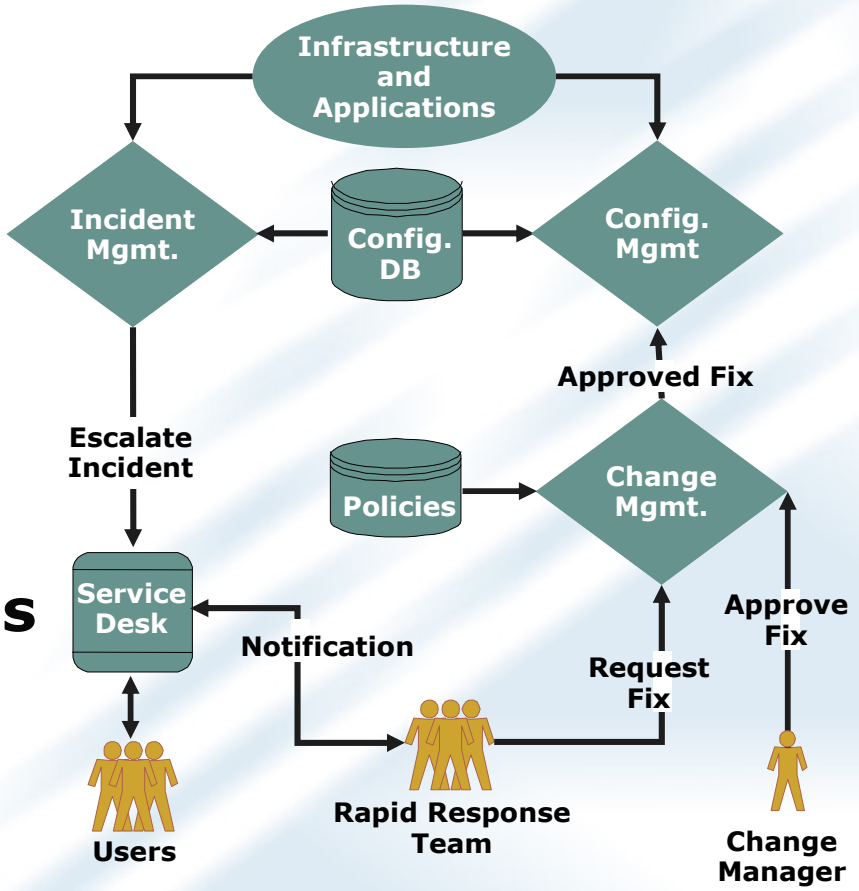
- Business leaders are demanding objective and measurable value from IT organizations
  - They want to understand the impact of IT on their business, not the "techie" details
- Emerging tools offer value, but are immature
  - Manual relationship mapping will improve soon
- Business intelligence can be gleaned from applications (e.g., SAP, PeopleSoft) and BI products (e.g., Cognos, Business Objects)
- BPMI is developing data exposure standards
  - Business-process instrumentation 3-4 years away

Tap into business process workflow and IT workflow for relationship autodiscovery

Workflow Automation Products

- Process automation requires workflow linkage between traditional tasks
  - Task sequences and data flow
  - Handoffs to other processes
  - Checks and balances
  - i.e., more relationships
- Vendors are addressing this
  - Adaptive organization
  - M&A: BMC buys Remedy, Mercury buys Kintana

Incident Workflow

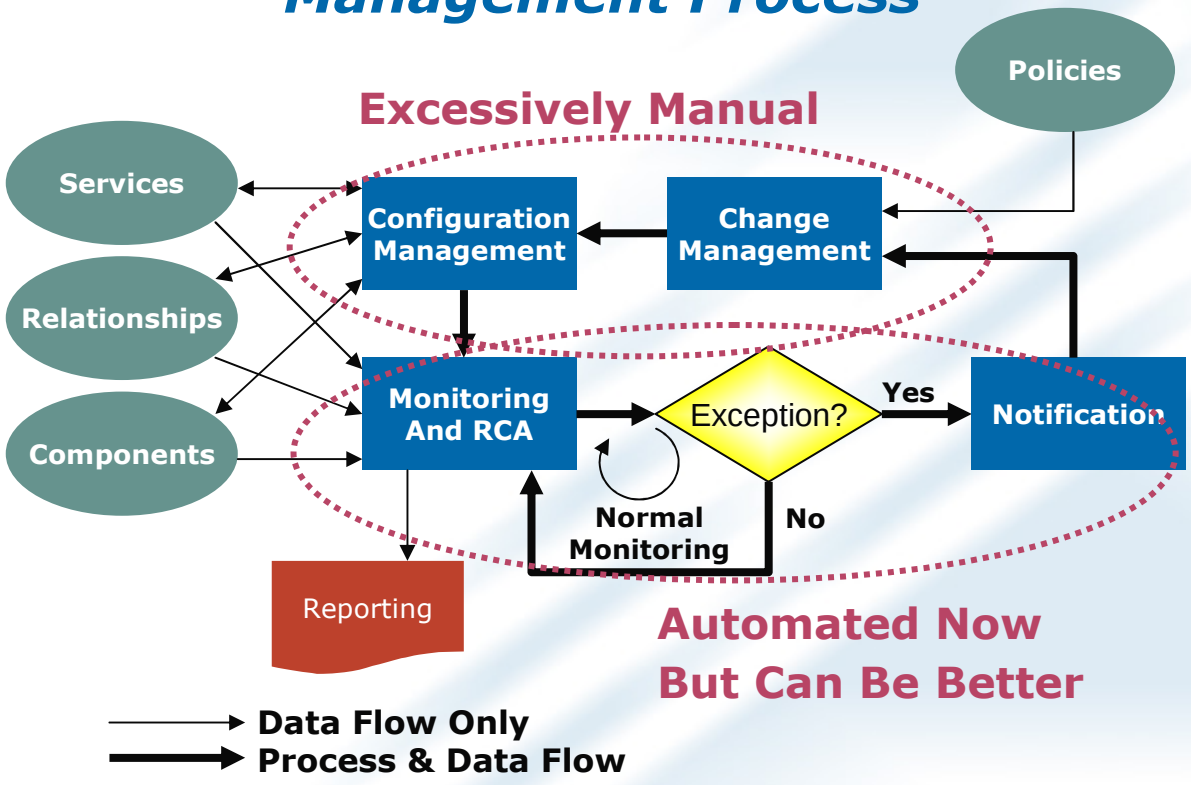


Implement workflow automation to bind other tools into cohesive IT automation

Operational Automation

- Business drivers for operational automation
- Configuration management
- Automation evolution
- Adaptive organization

State of Automation in the Management Process

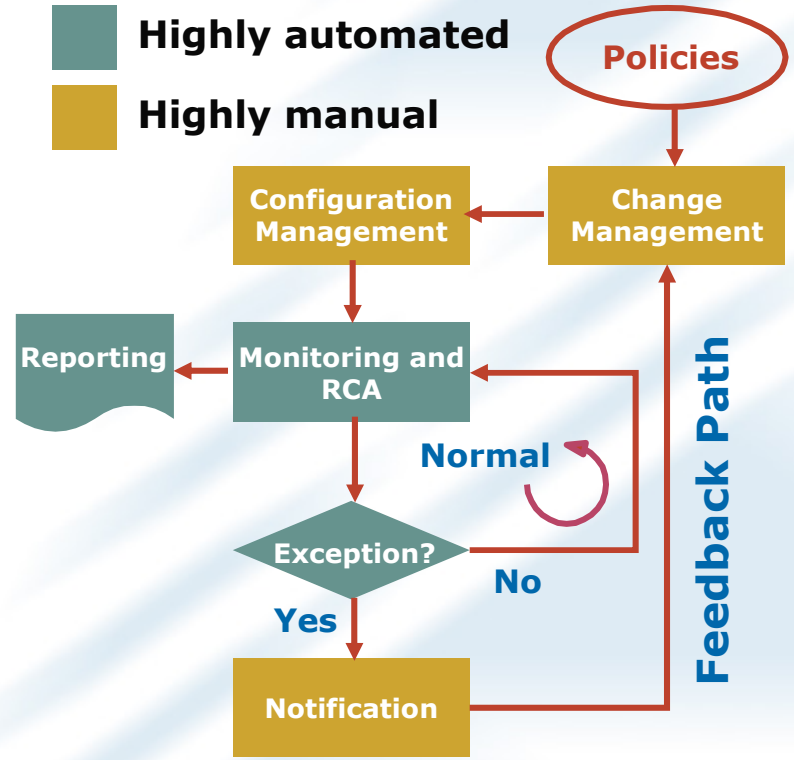


View automation as a business imperative, not an option

Operational Automation Business Drivers

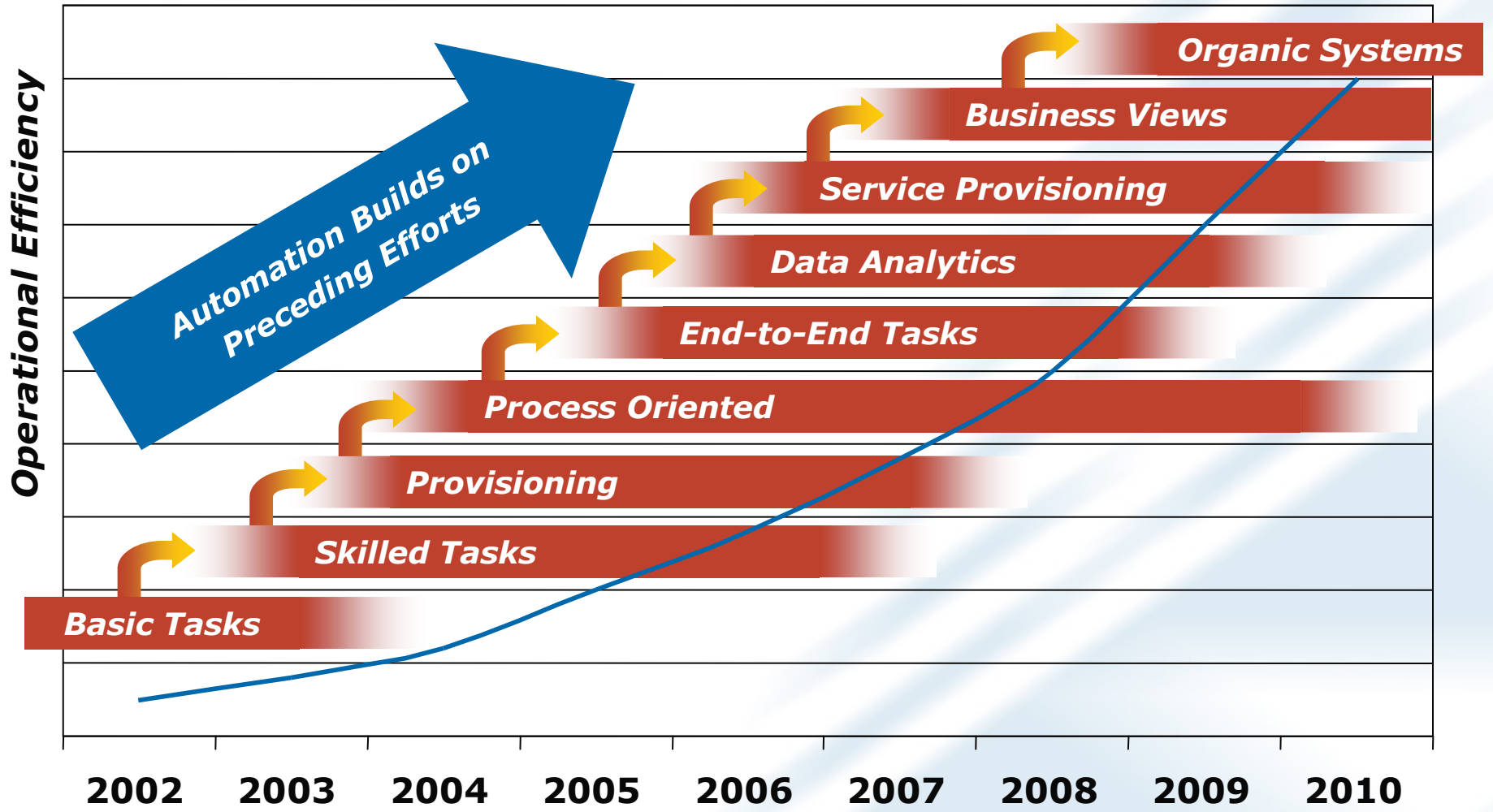
- IT operational expenses are too high
  - Highest single cost of IT
- Efficiency increases have high return on finances
- Commodity functions always end up automated
  - e.g., automotive, agriculture
- Automation is inevitable
  - Resistance is futile

Closed-Loop Management



Join the drive to automate IT operations to remain viable in the industry

Operational Automation Evolution



Intelligent Configuration Management

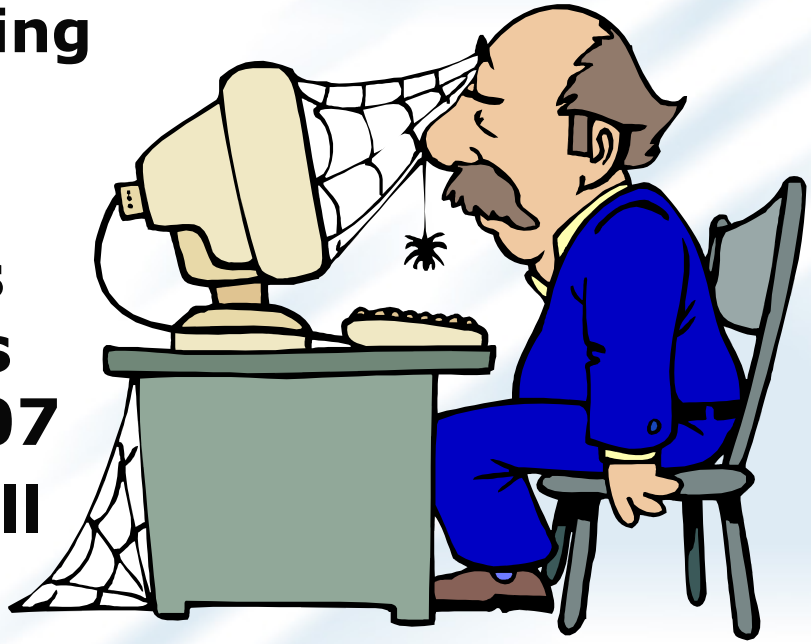
- Manual configuration is error-prone and costly
- Tools simplify the process
  - Configuration with fewer, less-skilled staff
  - Sanity checks minimize errors
  - Eliminate one-by-one configurations
- Patch management is hot
  - Security driven, but good for all software issues
- Products remain silo-centric
  - e.g., client, server, network, storage
- Good provisioning systems are emerging

Automate tasks where possible, with an ultimate goal of adaptive organization

Adaptive Organization

- IT vendors are touting bold automation visions
  - IBM: Autonomic Computing
  - HP: Adaptive Enterprise
  - Sun: N1
- Epitome of automation is years away, but progress will be rapid through 2007
- Entire IT organization will be impacted

Self-Adaptive Systems Will Be a Slow Evolution



Investigate incremental advances in adaptive organization, but vendor visions are futuristic

Tools and Technology for Operational Automation

- **Management trends**
  - **Implement tools to automatically discover relationships whenever possible**
  - **Seek performance tools using deeper analytics**
- **Consolidate management technologies**
  - **Attain business value with business-oriented event managers, but expect manual work**
  - **Automate processes with workflow tools**
- **Drive to maximize IT operational automation**
  - **Explore intelligent configuration management tools with a vision toward adaptive organization**