



# IBM Transformation: The Journey to Smarter Computing



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# IBM Transformation: *The Journey to Smarter Computing*



## ▪ **Foundation**

- IBM Transformation Strategy
  - IBM Roadmap to 2015
- 2011 CIO Study

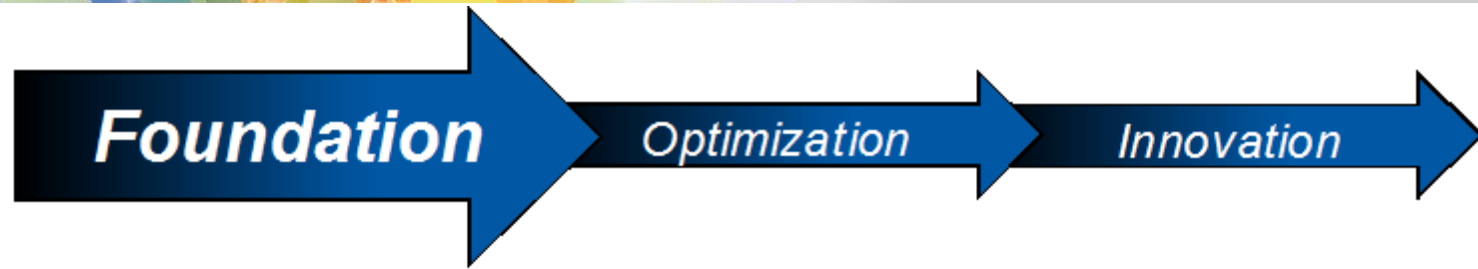
## ▪ **Optimization**

- Organization
- Consolidation and Virtualization
- Service Management
- Operational Excellence

## ▪ **Innovation**

- Cloud Computing





- As the IBM Globally Integrated Enterprise matures, it will benefit from smarter computing.
- The IBM 2015 Roadmap outlines a continued focus on end-to-end transformation, global integration and value services.
- The relationship between CIOs and IBM dates to the beginning of the CIO role, which means understanding the CIO needs is critical for IBM's success.

# IBM Strategy

*A decade ago we saw change coming and took decisive actions that have enabled IBM to turn today's disruption into opportunity.*

Changes in  
world  
markets



Become the  
premier Globally  
Integrated  
Enterprise

Changes in  
information  
technology



Focus on open  
technologies  
and high-value  
solutions

Changes in  
client needs



Deliver  
integration and  
innovation to  
clients

IBMers Value



Dedication to every client's success.  
Innovation that matters—for our company and for the world.  
Trust and personal responsibility in all relationships.

# IBM Transformation Maturation

*The “Smarter” phase of our transformation is beginning*

**2002**

Sharing & partnering



- Consistent set of processes worldwide
- Leverage best practices
- Standardize and reduce waste
- Governance and performance discipline

**2006**

Globally integrating

The Globally Integrated Enterprise

*Samuel J. Palmisano*

- Right skills, right place, right cost
- Rationalize support functions for greater efficiency
- Radically simplify processes

**2009**

CIO BT/IT BOLD Organization changes

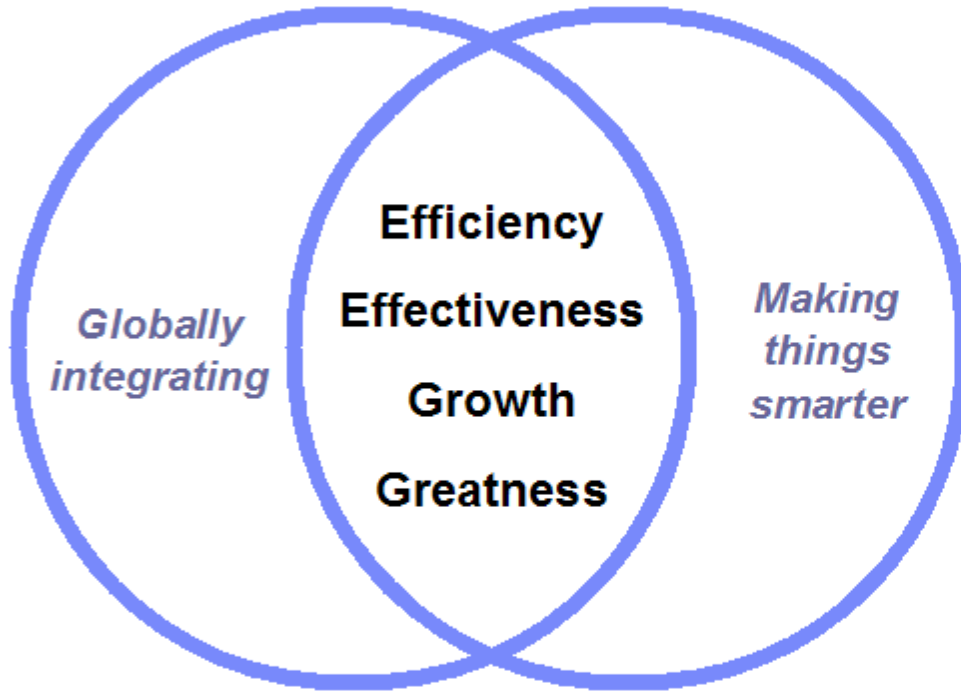
**2011**

Making things smarter



- Instrumented, interconnected, intelligent
- Enable growth and productivity
- Optimize the whole system

# IBM 2015 Roadmap – Value Services Continuous Improvement



- Focus on high value advisory activities
- Locate work to where it can best be performed
- Leverage business analytics
- Radically simplify

**Information  
Technology**

**Global Sales  
Operations**

**Integrated Supply  
Chain**

**Finance**

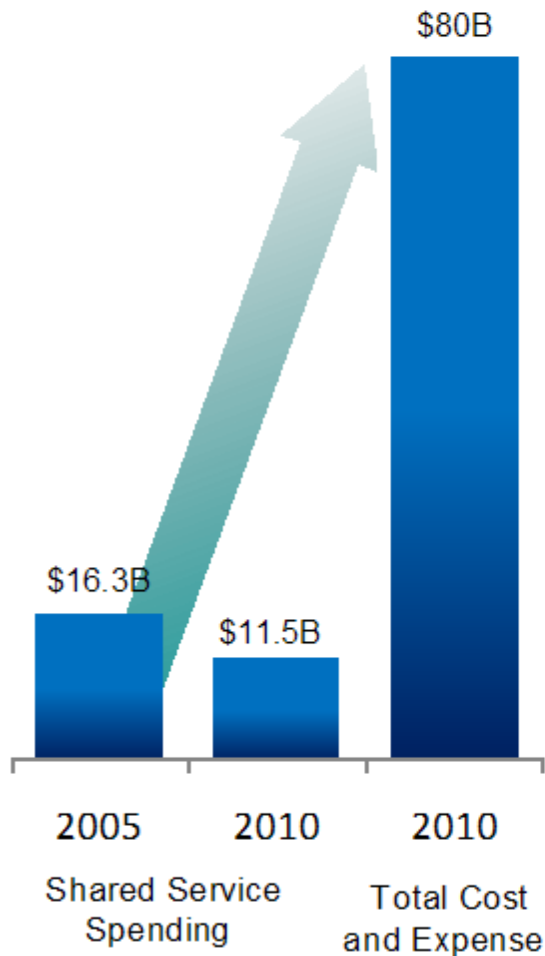
**Human Resources**

**Marketing &  
Communications**

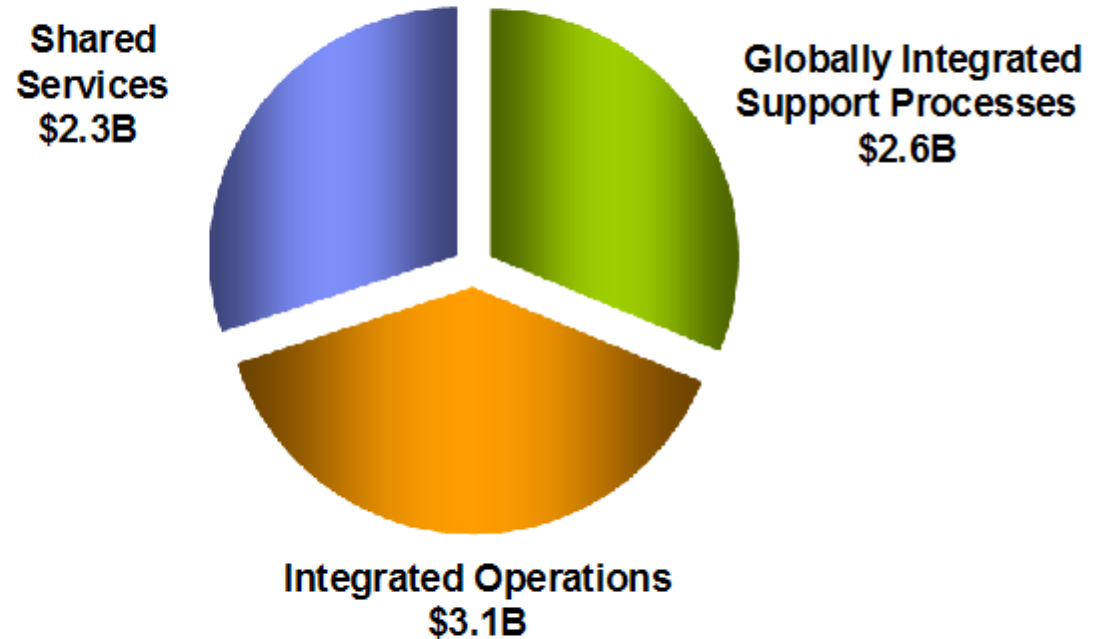
**Legal**

**Real Estate  
Operations**

# IBM 2015 Roadmap: Operating Leverage



Applying transformation principles to all of IBM's spending to drive \$8B in productivity benefits over the next 5 years

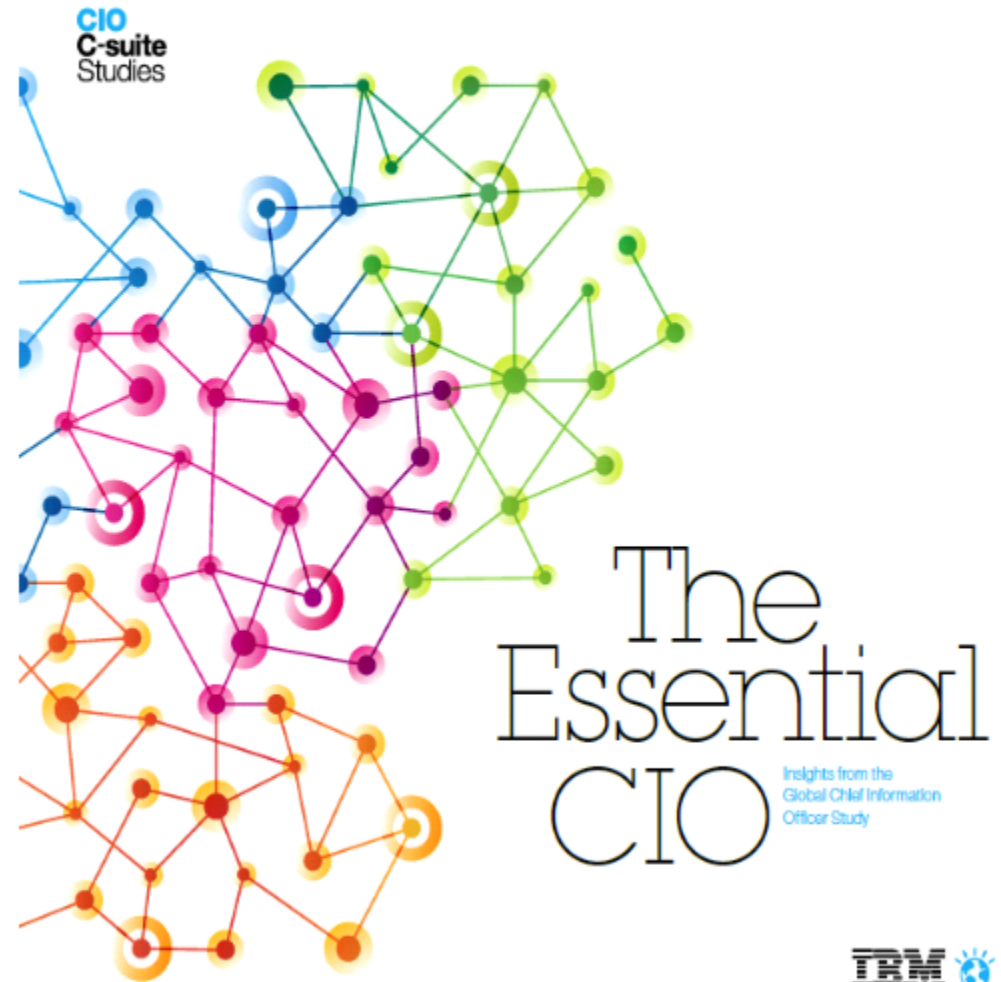


- **Radically simplify**
- **Integrate operations across units**
- **Drive differentiated innovation**
- **Enable growth and productivity**

## 2011 CIO Study: *The Essential CIO*

*Results from more than 3,000 face-to-face CIO interviews were compiled using state-of-the-art statistical and textual analysis.*

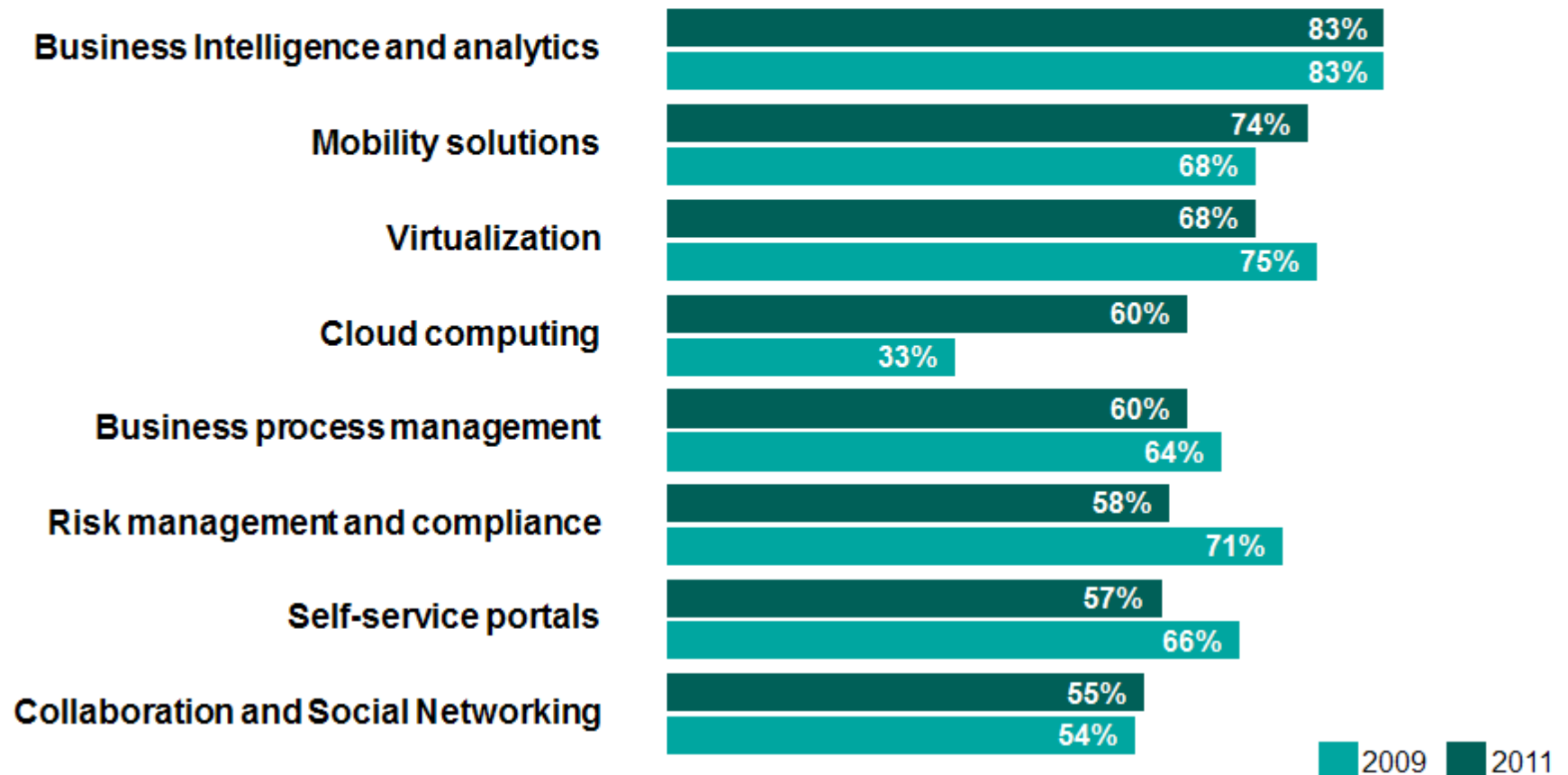
- ◆ The study represents a diverse group of organizations:
  - ◆ 71 countries
    - ◆ 43% Growth Market
    - ◆ 35% Europe
    - ◆ 16% North America
    - ◆ 6% Japan
  - ◆ 18 industries
    - ◆ 26% Distribution
    - ◆ 25% Industrial
    - ◆ 22% Financial Services
    - ◆ 15% Public
    - ◆ 12% Communications
  - ◆ 5 sectors
    - ◆ 39% 1,000 to 10,000 employees
    - ◆ 33% >10,000 employees
    - ◆ 28% < 1,000 employees





## CIO visionary plans are evolving: business intelligence and analytics remain at the top, with cloud computing moving into the top four

Which visionary plans do you have to increase competitiveness over the next 3 to 5 years?



Source: 2011 CIO Study, Q12: "Which visionary plans do you have to increase competitiveness over the next 3 to 5 years?" (n=3,018)

# CIO mandates come with distinct characteristics that line up with the organization's goals and strategy

## Expand mandate

*Improve competitive differentiation*

- Outsourcing
- Internal communication & collaboration
- Business process management
- Review and update legacy environment

## Leverage mandate

*Standardization*

- Standard infrastructure & processes
- Control of legacy costs
- Collaboration tools
- Gradual introduction of technology



## Transform mandate

*Change the industry value chain*

- Use of "Big data" and real-time info
- Simplification for clients/partners
- Enhancement and expansion of the value chain
- Risk management frameworks

## Pioneer mandate

*Radically innovate products, markets, business models*

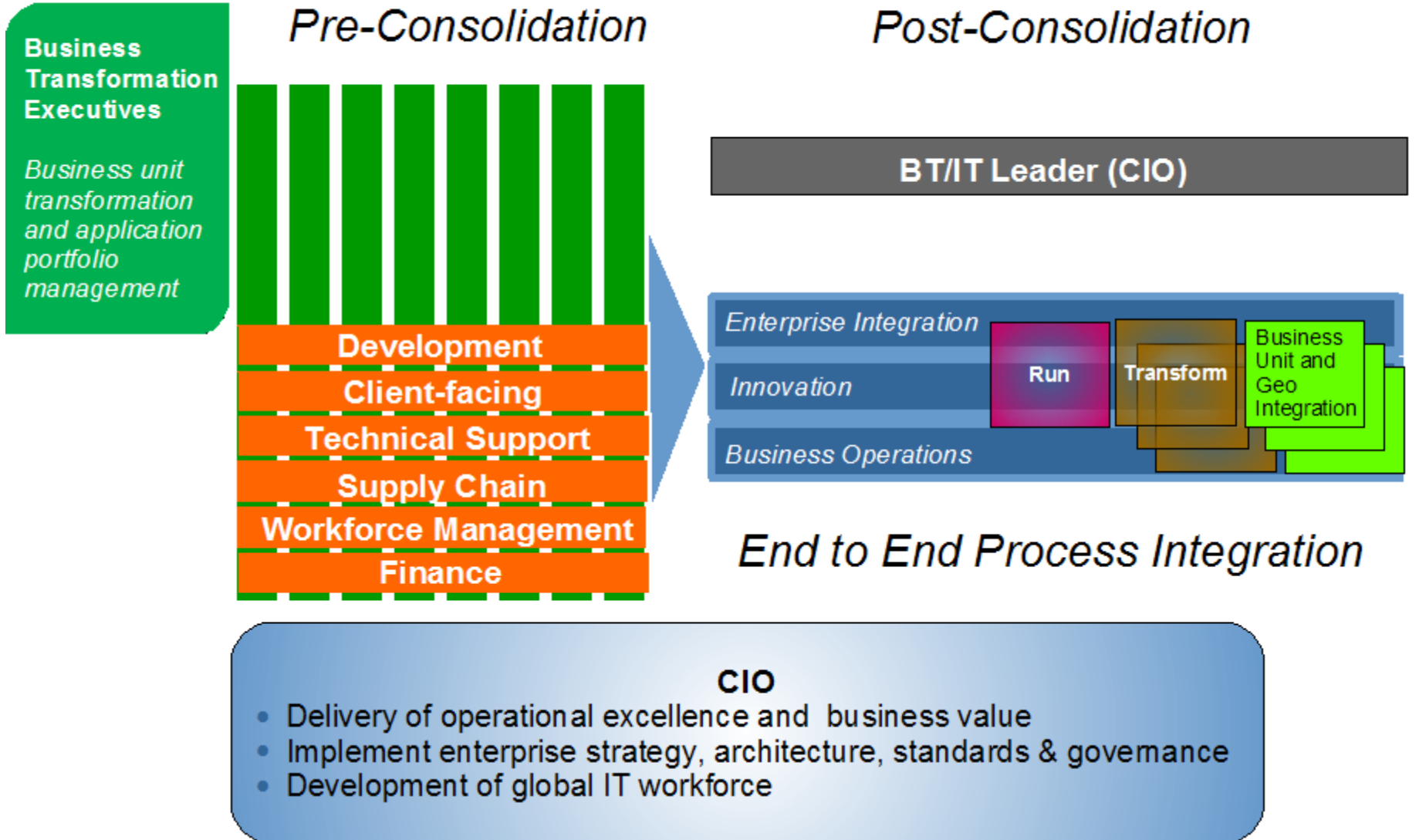
- Piloting technology for social value
- Explore new sources of revenue
- Enhance customer experience
- Non-stop growth

For additional information regarding the 2011 CIO Study, please visit: <http://www.ibm.com/ciostudy2011>

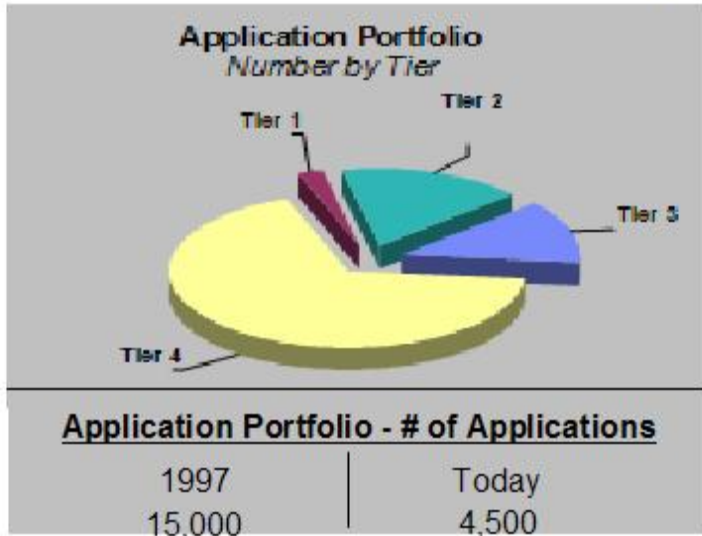


- Optimization benefits from an end-to-end, enterprise-level view
  - Organization consolidation
  - Virtualization of the infrastructure
  - Integrated service management
  - Delivering with excellence

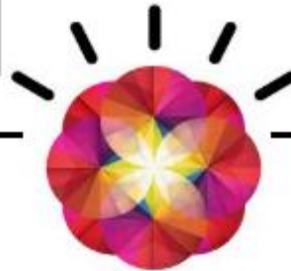
# IBM's BT/IT Transformation Model



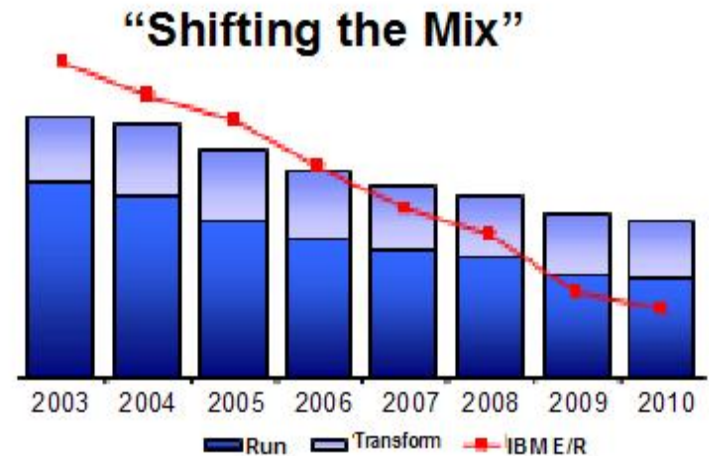
# CIO Run Portfolio – Composition and Trends



*Continued cost take-down requires transformational change*

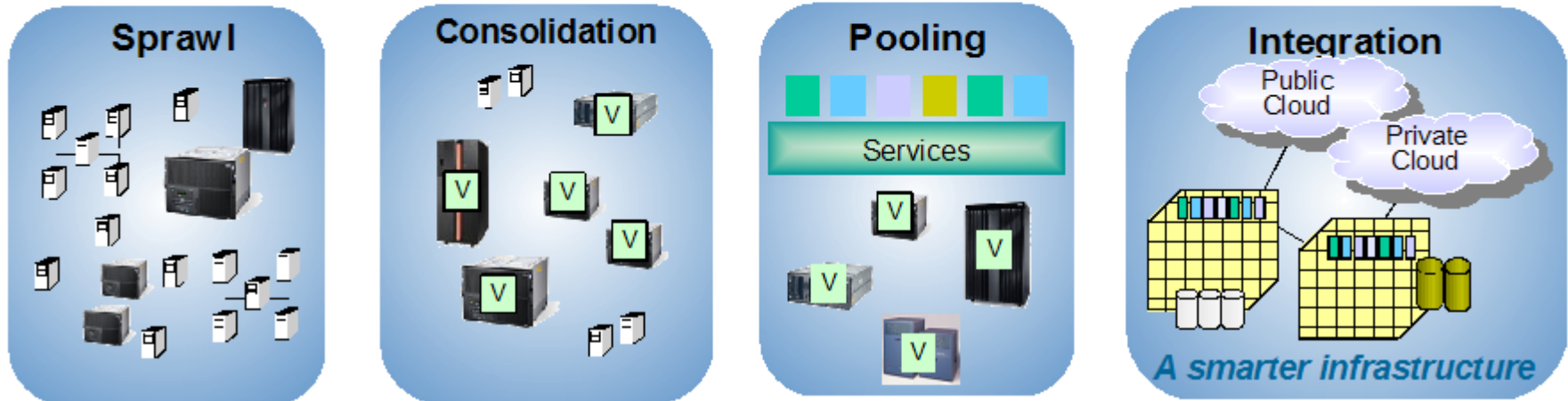


*Leveraging virtualization, standardization/automation and integrated service management*



# IT Infrastructure Evolution

Simplify IT Infrastructure



## Top IT Requirements

- *Agility*
- *Resiliency*
- *Security*
- *Greenness*
- *Low Cost*

## Key Technologies

- *Service oriented architecture*
- *End-to-end service mgmt*
- *Comprehensive virtualization*
- *Ensembles & scalable server*
- *Converged networks*
- *Cloud computing services*

# Project “Big Green” - Server Virtualization

*IBM’s Enterprise Computing Model program is yielding significant benefits for the corporation*

## Progress

Servers consolidated  
**over 5,700**

Current migration pace  
**2000 servers/year**

Energy savings –  
**>20k MWh saved**

Reduction in floor space -  
**47,000 square feet**

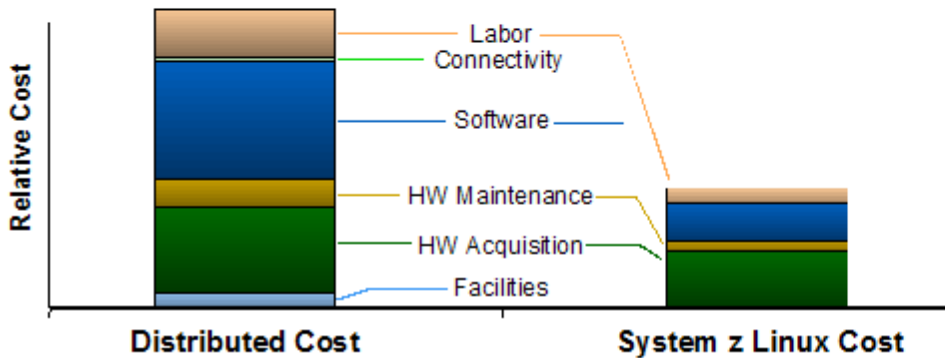
Dramatic Simplification  
**Software Licenses reduced by 93%**

**Physical Network Connections reduced by 55%**

	<b>Benefits Realized</b>
<b>Business Case</b> 	<ul style="list-style-type: none"> <li>• Energy savings</li> <li>• Reduced IT costs</li> <li>• Reduced capital req'ts</li> <li>• HW/SW refresh</li> </ul>
<b>Standards and Simplification</b> 	<ul style="list-style-type: none"> <li>• Inventory hygiene</li> <li>• Application mapping</li> <li>• Faster provisioning</li> </ul>
<b>Service Quality</b> 	<ul style="list-style-type: none"> <li>• Improved security</li> <li>• Increased resiliency</li> <li>• Simple, stable, available</li> </ul>

# Client View of TCO Comparison for Similar Distributed Workload vs. System z Linux results in Potential 60-75% Gross Cost Savings / 5 years

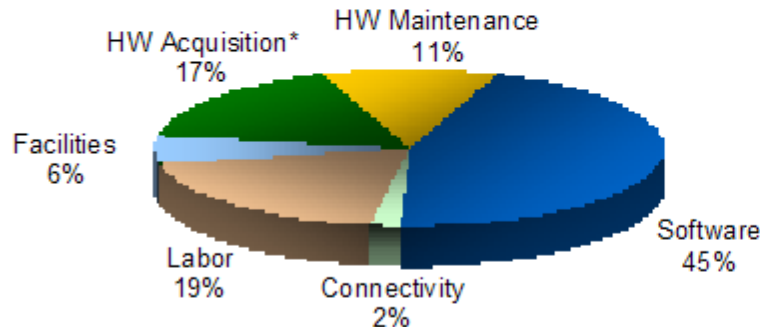
## Operating Cost: Distributed vs. Mainframe



## Dramatic Simplification

Unit	Distributed	System z Linux	% Reduction
Software Licenses	26,700	1,800	93%
Ports	31,300	960	97%
Cables	19,500	700	96%
Physical Network Connections	15,700	7,000	55%

## Potential Savings: Categories as a % of Gross Savings



\* HW Acquisition compares server/disk refresh of distributed environment to the cost of acquiring new mainframes/storage

Results will vary based on several factors including # of servers and work load types



## Moving Forward – *Investigating potential uses for zBx*



### Smart Analytics

- Long term: data consolidation
- Short term: application – level, hybrid operational data stores with high-speed query capability/report acceleration



Integrating People,  
Processes and Technology

### Blue Harmony (SAP Project Development and Deployment )

- New deployment provides an obvious use case for benefits
- Server migrations included in deployment plans
- Replace z10 servers with newer technology



### CIO Innovation Lab (Enterprise Computing Model CoE)

- Gain experience/skills/insight into zBx capabilities
- Accelerate production deployments
- Develop internal reference for zBx as part of GIDC – Green Innovation Data Center

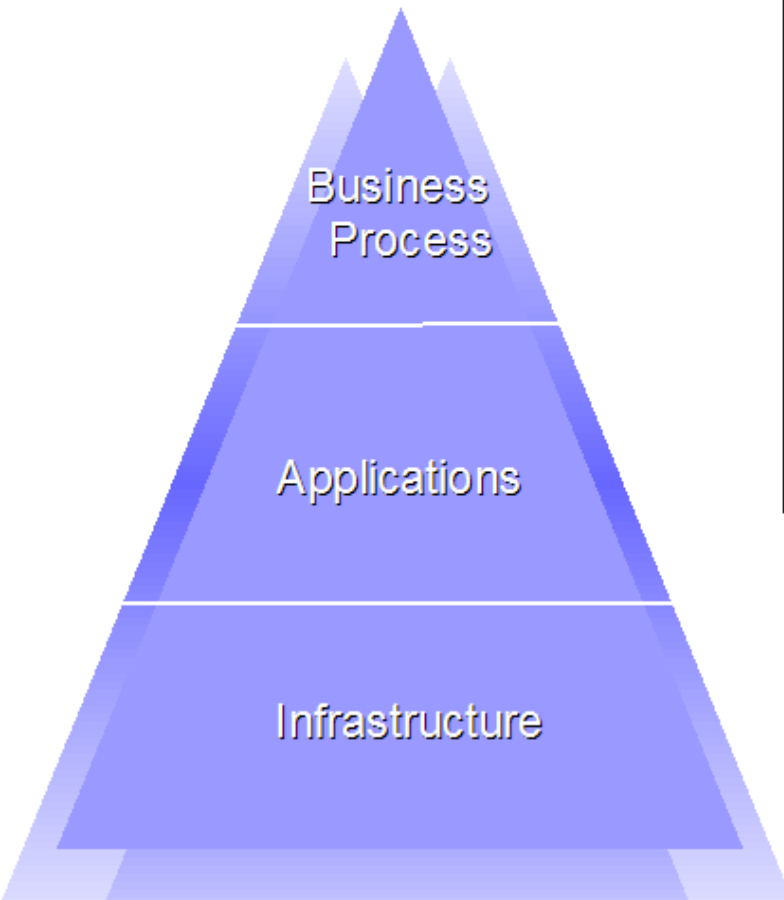
# IBM's Integrated Service Management Program

Key Program Elements		
	Business Drivers	Business Value
Standardize	<p><b>Service Catalog</b></p> <ul style="list-style-type: none"> <li>Align</li> <li>Drive consistency</li> <li>Standardize</li> </ul>	<ul style="list-style-type: none"> <li>Minimize spending</li> <li>Lower costs</li> <li>Increase coverage</li> </ul>
Centralize	<p><b>Supply/Demand Optimization</b></p> <ul style="list-style-type: none"> <li>Priority-driven</li> <li>Planned</li> <li>Simplified</li> </ul>	<ul style="list-style-type: none"> <li>Address highest priorities</li> <li>Drive by forecast</li> <li>Reduce wait times</li> </ul>
Streamline	<p><b>Business Process Management</b></p> <ul style="list-style-type: none"> <li>Process-driven</li> <li>Focused</li> <li>Automated</li> </ul>	<ul style="list-style-type: none"> <li>Provide faster service</li> <li>Deliver higher quality</li> <li>Reduce expense</li> </ul>



# Service Catalog Construct

## Dimensions of Service



## Service Classification

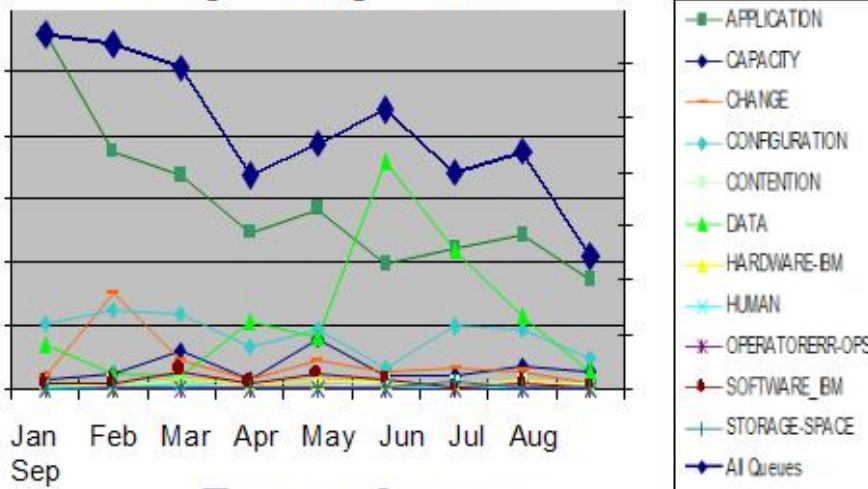
	Tier 1	Tier 2	Tier 3	Tier 4
Applications	Key – Gold / Silver	Gold/ Silver - Multi- country	Bronze/ Silver – single country	Blue
Portfolio Coverage	4%	29%	23%	44%
Severity 1 Problems	24 x7	24 x 7	M-F – Primary 12 hours	Limited
Business Continuity	Very High	High	Limited	Limited

### Example: Tier 1 Selection Criteria

- Supports >\$1B revenue/year
- Critical for Financial close at quarter end.
- Supports >80% global employees
- Critical to enable external Clients
- Part of ibm.com web presence

# Operational Excellence – A Continuous Improvement Program

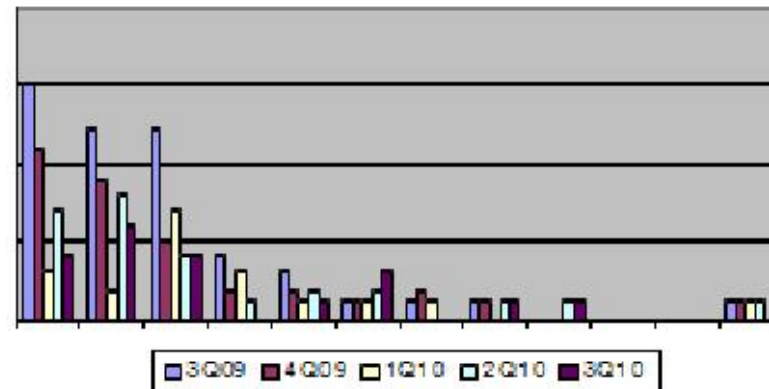
Average Outage Duration



## Focus Areas

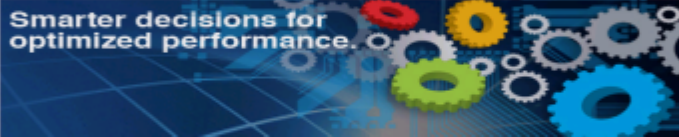
- E2E availability of key/critical applications
- Stable quarter/year end close processes
- Improvements in E2E quality of service and associated metrics
- Deployment to production - acceptance criteria, guidelines, standards and execution

Mean Time to Recover

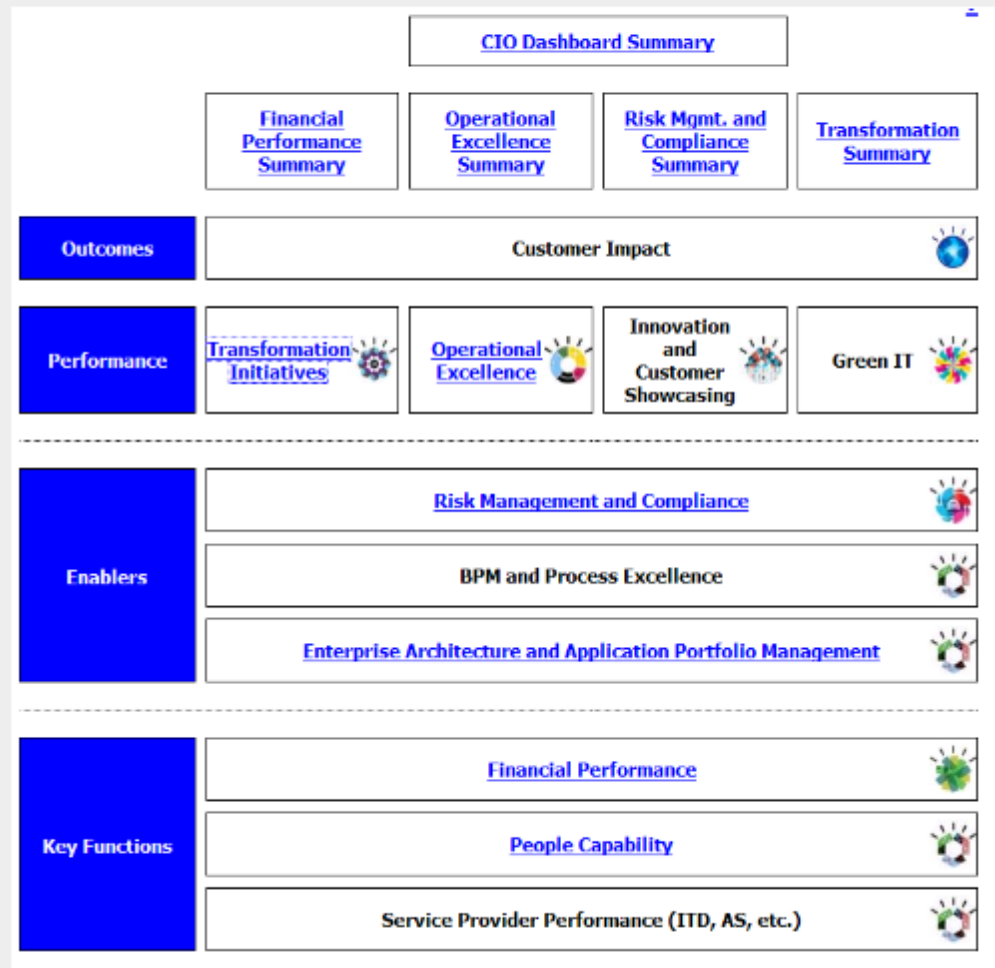


# CIO Dashboard

Supports the strategic and operational agenda of the IBM CIO - instrumentation, priority setting, communication, target definition, progress measurement/transparency and business analytics.

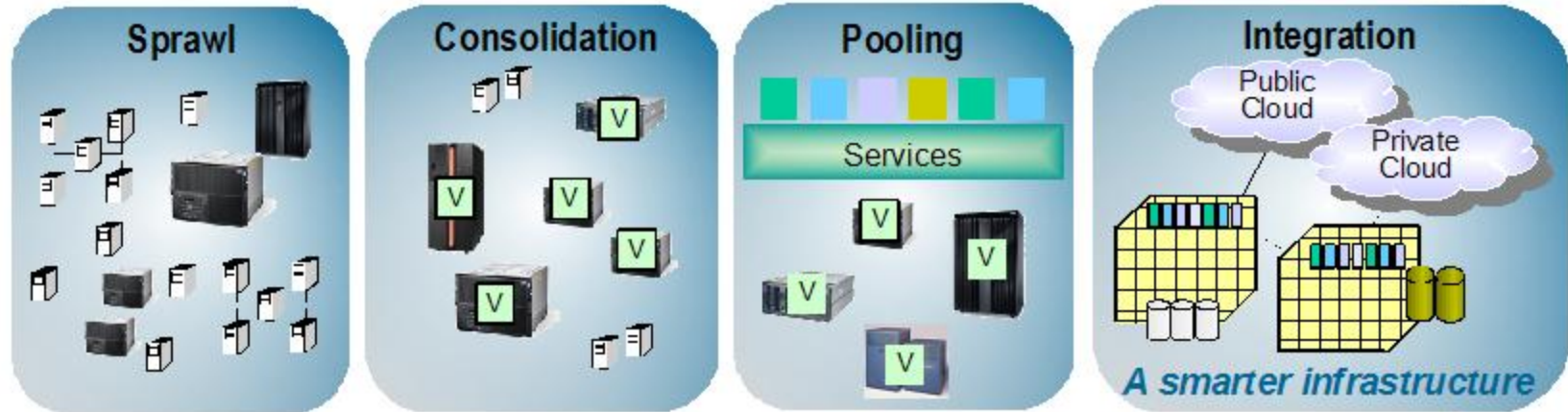


- ✓ Establish *top to bottom management system*
- ✓ Provide *drill down capability*
- ✓ *Balance between run and transform*
- ✓ Enable *optimization, streamlining and automation of CIO operations*
- ✓ Ensure *clear outcomes and targets*
- ✓ Provide *reference point* to drive Business Analytics

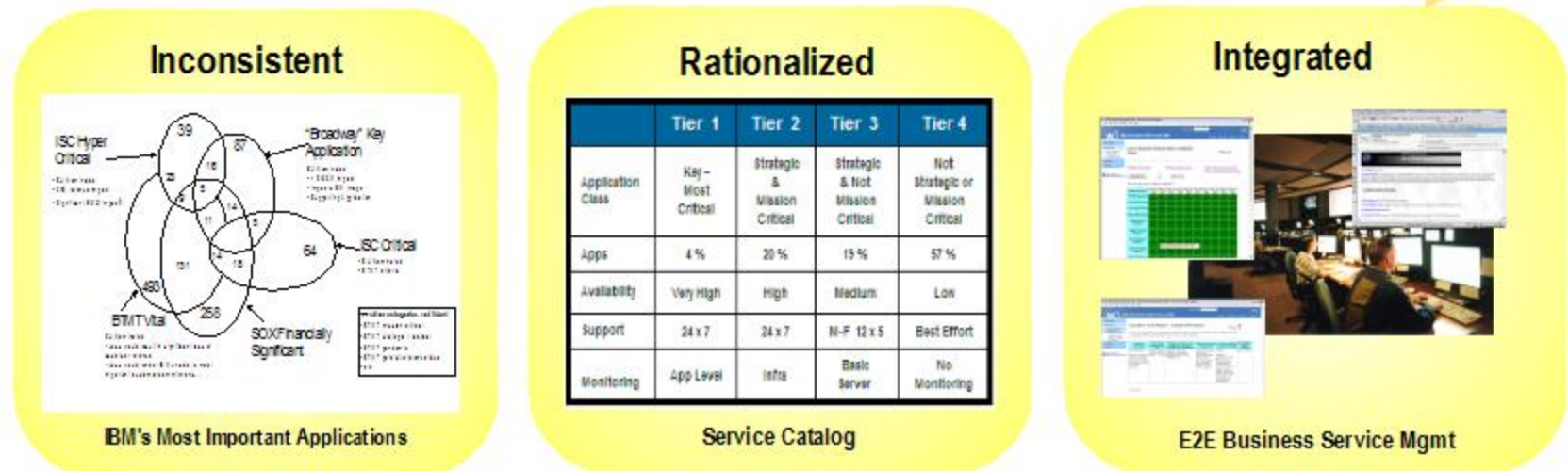


# Evolution to smarter computing

## Simplify IT Infrastructure



## Manage IT Services





- Smarter computing for the enterprise is designed for data, tuned to the task and managed in the cloud.
- Optimized systems and processes set the stage for innovation.
- Cloud Computing is not rocket science, but it is computer science.

# IBM is applying Cloud across several key domains

*IBM's internal Cloud implementations move resources to more agile, cost effective platforms*

Analytics	Collaboration	Develop/Test	Desktop	Storage	Prod Support
					
<p><b>Blue Insight</b></p>	<p><b>LotusLive</b></p>	<p><b>Develop/Test Cloud</b></p>	<p><b>Workplace Cloud</b></p>	<p><b>Storage Cloud</b></p>	<p><b>Production Cloud</b></p>
<ul style="list-style-type: none"> <li>• Large, private analytics cloud powered by Cognos</li> <li>• Expanded insight; cost savings</li> </ul>	<ul style="list-style-type: none"> <li>• Collaboration tools—web conferencing</li> <li>• Standard platform supporting global virtual workforce</li> </ul>	<ul style="list-style-type: none"> <li>• Self-service computing capacity for development</li> <li>• Rapid provisioning; increased agility and flexibility; standard platform</li> </ul>	<ul style="list-style-type: none"> <li>• Roles-based, virtual work environments</li> <li>• Greater agility; increased security</li> </ul>	<ul style="list-style-type: none"> <li>• File storage cloud in place; block storage cloud in progress</li> <li>• Maximized utilization through automated provisioning and tiering</li> </ul>	<ul style="list-style-type: none"> <li>• Cloud supported environment for production applications</li> <li>• Standardized services by tier; lower labor costs for support; optimized</li> </ul>



## Journey to Smarter Computing – *Lessons Learned*



- ***Enterprise view and sponsorship***
- ***Strategic investment***
- ***Clear goals with a dedicated team***
- ***Inclusive leadership***
- ***Continuity of leadership***
- ***Leverage talent and capability to drive results***





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AIX*	IBM	System p System x	WebSphere*
DB2*	IBM Business Partner Logo*	System z	z10
Db2 Universal Database	IBM Logo*	System z9	z/OS*
Domino*	POWER5	System z10	zSeries*
GARS	Power Systems	Tivoli*	z/VM*
Hiper Sockets	System I		

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