Cloud Strategy Brief

IT Value Transformation Road Map

Vision, Value, and Virtualization

This cloud computing strategy brief presents a virtualization- and private-cloud-centric model for IT value transformation. It combines key findings from several primary research studies into a three-stage transformation road map.

The road map outlines a set of evolving objectives, challenges, required competencies, and success measures needed to transform IT from a cost center to a strategic value driver. It is designed to address key success factors at the executive sponsorship level and at the infrastructure level. Attention at both levels is needed to ensure successful transformation.

Use this paper and three other related cloud computing strategy briefs to develop a transformation vision, gauge current state, measure progress, and communicate results.

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Advancing the Science of IT Management

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Executive Summary

Many IT organizations are stuck in a constraint-focused spiral. Business executives don't see value generated in proportion to the amount of IT spending. As a result, they view IT as a department that needs to be constrained. Unfortunately, a primary focus on cost reduction minimizes IT's ability to deliver strategic value, which erodes business confidence in IT management. For IT executives who see the transformative power and strategic value of IT, this lack of confidence from the business prevents them from elevating the value discussion above a cost focus.

Research from multiple sources suggests a common pattern of activity at firms where IT executives have led the transformation of IT from cost center to strategic value driver. Shifting the strategies for IT executive communication is one key success factor needed to rebuild confidence. Having an IT infrastructure that can simultaneously achieve cost, service quality, and agility objectives is another. Virtualization and cloud computing solutions are uniquely suited to support the requirements for IT value transformation.

Analysis of attributes common to those organizations that have transformed IT value suggest a set of incremental and evolving objectives, competencies, and value measures that can be used to drive a successful transformation at other organizations. This paper combines key findings from several primary research studies into a three-stage virtualization- and private-cloud-centric road map for IT value transformation. The IT Value Transformation Roadmap highlights the objectives, challenges, required competencies, and success measures at each stage. It is designed to address key success factors at the executive communication level and at the infrastructure level.

About the Author

Kurt Milne is the Managing Director of the IT Process Institute, and primary author of five major IT management research studies. He has 20 years of experience at leading technology companies including Hewlett Packard and BMC Software. His main areas of expertise include IT service management and IT controls, inventory and supply chain management, and computer integrated manufacturing.

About the IT Process Institute

The IT Process Institute is an independent research organization that exists to advance IT management science through independent research, benchmarking, and development of prescriptive guidance. Our vision is to identify practices that are proven to improve the performance of IT organizations. www.itpi.org

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The IT Constraint Spiral

Business executives want IT to deliver strategic value. They know that if they aren't leveraging technology to achieve competitive advantage, their competitors likely are. And, for almost every strategic business decision that involves a transition from the current state to some future state, the path includes investing in information technology.

However, business executives may be anxious about spending more money on IT, even as part of a strategic initiative. They often don't see business value generated in proportion to the large capital and operating expenses in the IT organization. The ongoing cost of managing systems already in place accounts for an average of 65% of every dollar spent on IT, which limits the resources available to support new business initiatives.[1] And because IT usually doesn't report costs in terms of services and outcomes in business terms, business executives lose confidence in the ability of IT executives to deliver.

As a result, business executives tend to view IT as a department that needs to be controlled and constrained. Unfortunately, a primary focus on cost reduction puts business and IT executives in a self-defeating spiral. The spiral is set up when IT resources are cut, which can lead to IT organizations having to support the business with less stable infrastructures, which limits IT's ability to respond to emerging business opportunities. A diminished ability to respond reduces perceived business value, which further erodes business confidence in IT management.

IT executives who see opportunities to leverage technology to drive strategic value are frustrated by the constraint-focused spiral. Showing value is key to delivering more value. And without a track record of success, IT executives cannot shift the focus from cost containment to strategic IT value.

What is strategic IT value? Strategic IT value is demonstrated when IT plays a key role in a company's achievement of overall business strategy. In other words, when IT is keenly focused on business outcomes and plays a significant role in optimizing and improving core value-chain processes. Or, when the IT organization drives innovation that enables new technology-enabled product and service revenue streams. When IT is effective, results can be measured by improved customer satisfaction and market share gains.

Research Reveals a Path for Transformation

It is the IT executive's responsibility to break the constraint-focused spiral. Those working to drive the greatest value from IT often encounter obstacles that appear to be beyond their control. However, IT executives who have created IT organizations that drive strategic value have done so by making systematic improvements that enable a transformation from IT as a cost center to IT as a strategic value driver. And, those organizations that have achieved IT value transformation allocate 15% more of their overall IT budget to new projects, than do those organizations that are focused primarily on managing shared information technology services and common infrastructure.[2]

Recent research from Gartner and the MIT Center for Information Systems Research at the MIT Sloan School of Management shows that successful CIOs have demonstrated their ability to break the constraint cycle and deliver strategic value that enables business success.[3] This research identifies a strikingly similar pattern of activity across organizations that have successfully shifted from a cost focus to delivering strategic value for the business. The analysis of common activities reveals a specific set of transformation steps as shown in Figure 1 that include avoiding value traps, showing value for money, focusing on business outcomes, and then responding to new opportunities to extend strategic value.[4]

Successful IT leaders communicate value in a particular way and in a particular order

New thinking

Value for money

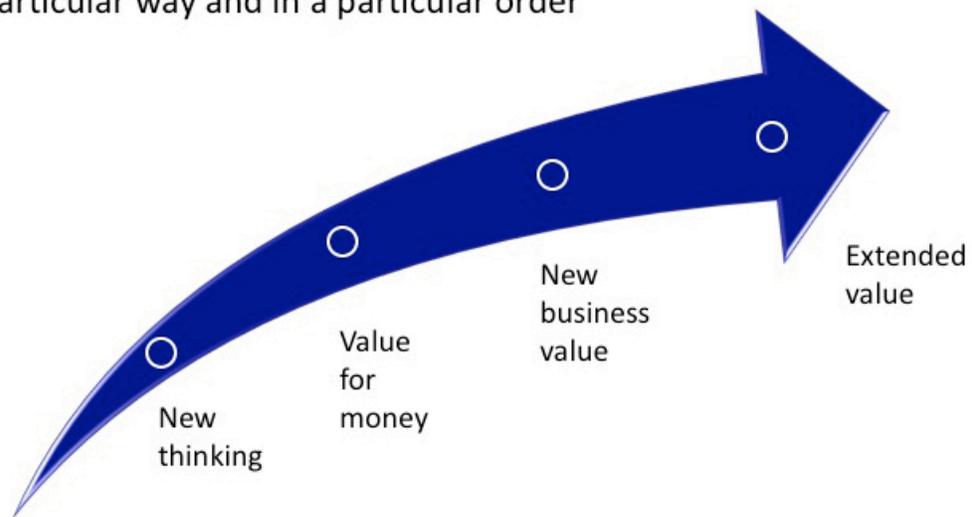New business value

Extended value

Figure 1 – Path to IT Value

The transformative mechanism revealed by the researchers is that the IT executives transform their communication with evolving IT priorities and value measures. Successful IT executives need to reshape their communications in order to earn their

seat at the executive table. Only after they demonstrate and communicate value in terms of business outcomes, and earn the trust of business leaders, can CIOs have conversations about how IT can add strategic value.[5]

Research from the IT Process Institute (ITPI) on IT strategic alignment also indicates that the primary way IT delivers business value can evolve. The research identifies different IT value archetypes, including those organizations that are primarily focused on shared information management services, those that also support business process optimization, and those that technology enable revenue producing products and services.[6] In addition to supporting the Gartner and MIT notion of the evolution of priorities and success measures, the ITPI research also suggests that evolving competencies are additive. At the endpoint of this transformation, IT is tightly integrated with the business and effectively identifying and driving strategic value. To achieve and maintain this endpoint, IT must focus on cost management, actively participate in business process optimization, and identify revenue-generating innovation—all simultaneously. IT must build and demonstrate competencies in multiple domains to reach a state where IT is driving strategic value.
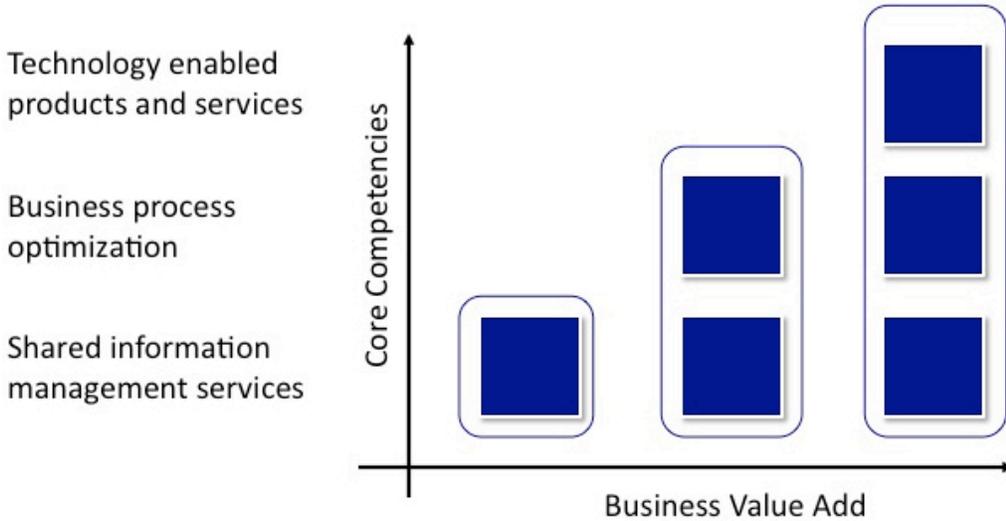

Figure 2 – Value competency building blocks

The findings from both studies suggest that following an ordered set of specific incremental improvements can transform IT from a cost center to a strategic value driver.

Transformation Key Success Factors

Two primary success factors allow IT to successfully transform IT value delivery. One is related to communicating IT value in terms that matter to business executives. The other is having a flexible IT infrastructure architected to meet the simultaneous objectives of cost transparency and reduction, service quality, and agility.

Key success factor: Business-focused communication

To engineer a successful transformation, IT executives need to change their communication strategy. Transformation requires evolving through several specific stages. Working through those stages incrementally builds business confidence in IT, to the point that IT can discuss strategic value and directly impact and transform business strategy.

Many IT organizations are doing great work, and IT executives often see the potential strategic value that IT can deliver to the business. However, when communication from IT isn't business focused, it creates doubts about IT's ability to manage resources under their control. Those doubts erode business executives' confidence in IT, which limits an IT executive's ability to even discuss IT support for strategic business initiatives.

The Gartner and MIT research suggests that top-performing IT executives start their transformation by knowing their cost numbers and communicating IT capabilities in a way that can be easily understood by business executives.[7] By increasing the visibility of the linkage between IT spending and specific outcomes, IT executives can give business executives information that helps them make decisions about spending priorities. Costs that are not allocated at the user level or the service consumption level prevent decision makers from determining whether IT is delivering the right services at the right cost and service level. Unit costing gives IT funders the data needed to compare alternatives and prioritize spending.

The next step in building business confidence occurs when IT demonstrates a clear understanding of business objectives and links IT spending to business outcomes. ITPI research suggests that IT executives who are actively engaged in business process optimization efforts have a clear understanding of business strategy and key success factors.[8]

IT executives who have an inward view of IT capabilities might conclude that IT is successful when the technology is implemented. Business executives, however, view IT projects as a means to an end, and they gauge investment success when business results are achieved. There really are no IT projects when IT executives anchor their communication focus to business outcomes. There are only business projects and business outcomes.

Gaps between IT and business executive's perspectives and definitions inhibit confidence building communication

	IT Executive	Business Executive
IT investment success	Project complete	Business results achieved
Communications focus	Talk technology	Talk their numbers
Spending linkage	IT service or business unit	Business Results

Figure 3 – Gaps inhibit executive communication

Once IT executives focus on and communicate IT investment strategy and accomplishments in terms of business outcomes, business executives are more comfortable that IT understands their objectives and can help them achieve strategic outcomes. Only then can IT have constructive discussions about how technology innovation can support or even transform business strategy.

At top-performing IT organizations that effectively enable revenue-generating products and services, staff-level IT employees have a visceral understanding of the unique value proposition of the business.[9] In other words, IT organizations that have transformed and are driving strategic value understand both the business objectives and the organization's competitive differentiation.

Based on the Gartner and MIT research, CIOs that don't transform their communications encounter predictable problems. When IT leaders fail to create transparent mechanisms for business oversight, IT is regarded with suspicion by business leaders who have no way to know whether they are paying the right price for the right performance. When IT leaders can't discuss business in terms used by other executives,

> **When IT leaders don't link IT investments to business performance improvements, the executive team looks elsewhere for competitive advantage.**

they are doomed to be outsiders and miss opportunities to discuss how technology can drive strategic value. When IT leaders don't link IT investments to business performance improvements, the executive team looks elsewhere for competitive advantage.[10]

Effective business-focused communication is a prerequisite for building confidence and breaking the constraint cycle. Transformation is fueled by increasing levels of business confidence in IT. Transforming IT communication is what builds business executive confidence.

Key success factor: Flexible infrastructure

Improved communication is not enough to enable transformation, however. IT needs an infrastructure and value delivery systems that meet multiple business-focused requirements. A traditional static infrastructure, managed in technology-siloed organizations, following traditional IT service management processes—this approach doesn't meet the concurrent set of cost, service quality, and agility requirements that enable transformation.

Contained within the traditional static infrastructure approach is an inherent trade-off. The infrastructure side of IT generally achieves cost-effective service delivery through standardization and stability. Production achieves efficiency by implementing high-quality, stable solutions from the outset. However, the application development side of the house responds to business needs by making changes. Application groups practice agile development that is more iterative in nature.

Tradeoffs between agile development and traditional production infrastructure approaches sub-optimize cost, quality or agility
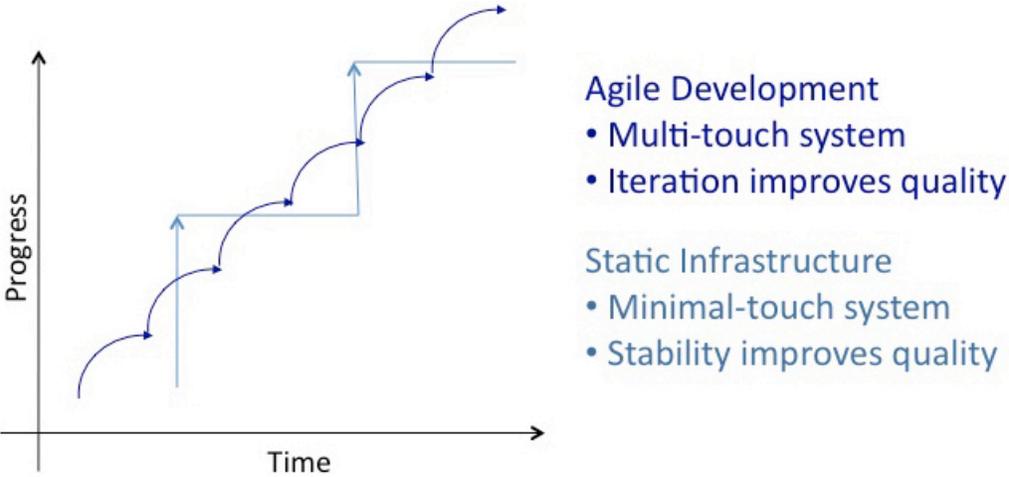

Figure 4 – Static infrastructure sub-optimizes various benefits

This core trade-off typically sub-optimizes cost, service quality, or agility. However, for IT executives to transform IT from a cost center to a strategic value enabler, they must simultaneous achieve cost, service quality, and agility requirements.

Cost. IT should be on an ongoing quest to drive down the unit cost of IT. Each new system implemented includes a commitment to ongoing support and maintenance. Unless IT retires old systems at the same rate it adds new systems, then IT must reduce ongoing maintenance costs.

A focus on cost reduction helps demonstrate operational competence. But transformation requires cost visibility. Instead of IT taking on the full burden of making cost trade-off decisions, IT should link both capital expenses and operating expenses to service consumption and ideally business outcomes in order to allow business executives to make decisions about different spending alternatives.

Service quality. Reducing costs and improving visibility are not enough to achieve IT value transformation. IT must also deliver a level of service quality that matches business requirements. A focus on business outcomes requires high availability of business-critical systems at a service level that is fit for use, and it also requires that service support is responsive when service interruptions occur.

Agility. Organizations that are driving strategic value build on a foundation of cost transparency and service quality. However, the differentiating trait of business-value-focused IT organizations is their ability to innovate and respond to business opportunities. Whether an IT organization is enabling a new business venture or launching a new product or service, the key differentiator is how fast IT can produce so that the business can realize the opportunity.

ITPI research on IT governance practices suggests that top-performing IT organizations have published processes in place that allow business managers to request both tactical and strategic IT services.[11] However, the data center infrastructure must be architected in a way that allows IT to "say yes" to those requests.

IT needs an architecture and infrastructure that can simultaneously facilitate a focus on cost, service quality, and agility. Organizations that have achieved value transformation possess an underpinning of operational excellence as measured by cost and service quality. But for IT to engage in strategy conversations and drive business value through technology innovation, agility as measured by time to capability becomes the most important requirement.

Virtualization-Based Cloud Computing Supports Transformation

The good news is that virtualization technology and private cloud computing models are helping IT executives transform their communication and deploy infrastructure solutions that simultaneously meet cost, service quality, and agility requirements.

Virtualization, as a cornerstone of the enterprise technology stack, drives down the unit cost of IT and improves cost transparency. It enables higher availability and service levels tied directly to business-critical applications. The evolution of

virtualization into a private cloud solution also leads to significant improvements in agility and scalability. Virtualization and private cloud computing uniquely address cost, service quality, and agility priorities simultaneously.

A recent VMware study of how dozens of customers have deployed and expanded their use of server virtualization technology suggests a common pattern of adoption. The resulting *VMware Customer Value Journey Framework* includes three stages of adoption that largely align with the transformation steps suggested by Gartner and MIT. [12]

As shown in Figure 5, the VMware research indicates that IT organizations typically begin in the IT Production phase by virtualizing servers in domains controlled by IT to achieve significant capital and operating expense cost efficiencies. Then they expand their use of virtualization in the Business Production phase to include business application domains—improving critical-business-system uptime and service levels— and they put more systems under the domain of disaster recovery. Finally, as organizations deploy private cloud solutions that pool computing resources into a shared and agile infrastructure, they can deploy an IT-as-a-service model that allows IT to quickly respond to emerging business opportunities.

Virtualization drives multiple benefits that vary by stage of adoption

Stage	IT Production	Business Production	ITaaS
Focus Area	Cost Efficiency	Quality of Service	Business Agility
Benefits	CAPEX OPEX	CAPEX OPEX Availability Responsiveness	CAPEX OPEX Availability Responsiveness Compliance Time-to-market
Key Capabilities	• Shared resource pools • Elastic capacity	• Zero-touch infrastructure • Increased control + service assurance	• Service Definition • Self-service • Chargeback

Figure 5 – Summary of VMware Customer Value Journey Framework

A recent ITPI study of server virtualization practices suggests that IT organizations also shift their virtualization objectives. Many organizations start with a focus on consolidation and cost-savings objectives. Some commonly implemented virtualization management practices minimize risk and optimize operational processes for consolidation. However, as organizations shift their focus to high-availability and disaster-recovery objectives, additional management practices can optimize

performance. Organizations that use virtualization to achieve IT-as-a-service and agility objectives in a private cloud model have the highest operational maturity and the greatest use of service management and automation tools. [13]

Both the VMware study and the ITPI virtualization maturity study show that the progression from cost center to strategic value driver requires additive competencies. Progression through the three phases of the virtualization journey supports increased levels of confidence in virtualization solutions, improved service support process effectiveness, and increased IT executive sponsorship of virtualization expansion.

Both studies suggest that the server virtualization-based private cloud strategy helps IT organizations achieve the simultaneous cost, service quality, and agility objectives required to achieve IT value transformation.

IT Value Transformation Road Map

Key findings from several primary research studies have been combined to create a three-stage IT value transformation road map. The road map, as shown in Figure 6, leverages what has been shown to work at other organizations to create an actionable model for transformation.

The road map is designed to address key success factors at the executive communication level and at the infrastructure level. Attention to both is needed to ensure successful transformation.

The road map highlights the objectives, challenges, required capabilities, and key measures at each stage. IT executives can use this road map to develop a transformation vision, gauge current state, measure progress, and communicate results.

IT Value Transformation Roadmap
Designed to address key success factors at the executive communication level and the infrastructure value level

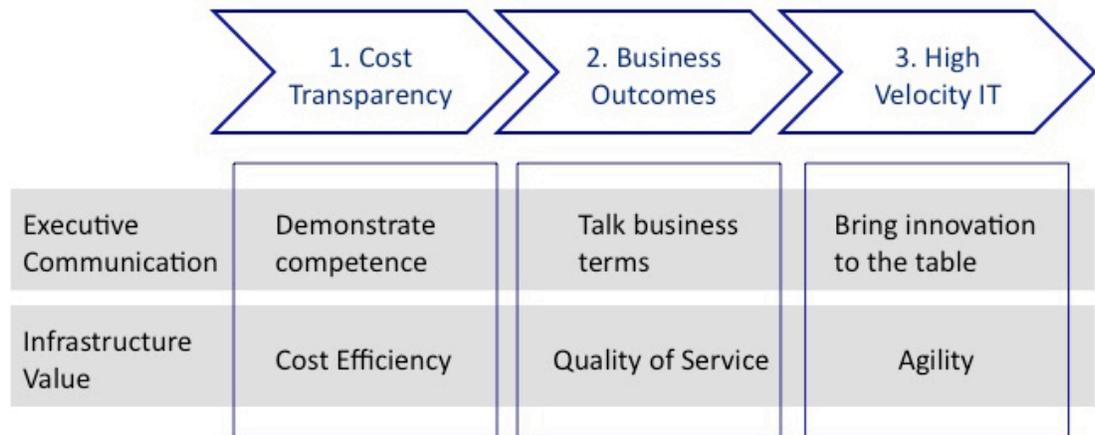|	1. Cost Transparency	2. Business Outcomes	3. High Velocity IT
Executive Communication	Demonstrate competence	Talk business terms	Bring innovation to the table
Infrastructure Value	Cost Efficiency	Quality of Service	Agility

Figure 6 – IT Value Transformation Roadmap

Each stage is catalytic in that it returns more resources to the organization thus fueling the next stage. Each stage is ordered to address pre-requisites that are required for success at the next stage. And, each stage is sustaining, creating enough value to the organization to remain in place even after the focus shifts to the next stage.

Several considerations that help ensure IT value transformation success include:

Focus on business outcomes. IT value transformation isn't about IT. It is about focusing IT efforts on business objectives. IT teams whose contributions are positioned solely in terms of low-cost IT operations are perceived as having little value.[14] Communicating IT efforts in business terms is critical for raising business confidence in IT and elevating IT's perceived value.

Evolve objectives and measure. Transformation steps have evolving objectives and desired outcomes that build business confidence in IT. The key measures used to gauge transformation progress and to communicate cost, service quality, and agility results also evolve.

Do not skip steps. Research studies used to develop this transformation road map indicate that transformation steps occur in a specific order. Executive-level communication evolves in a specific order to build confidence. Virtualization and cloud deployment also evolve in a logical progression. By taking transformation steps in order and building specific competencies, IT executives can lead the organization to higher levels of business value.

Increase business integration. Increased levels of business value delivery require increased levels of business integration. This road map should include increasing levels of IT resources allocated to business unit participation and researching game-changing innovation. A better understanding of desired business outcomes should not be limited to the IT executive level, however. To best identify opportunities for technology innovation, IT manager and staff-level resources should participate in business improvement efforts.

Establish processes for response. IT should develop and publish mechanisms so business managers can make both tactical and strategic IT resource requests. IT should optimize processes to respond effectively to those requests. Infrastructure should also be architected to allocate resources in response to changing demands.

The remaining sections of this paper detail three stages of the IT value transformation road map.

Transformation Stage 1: Cost Transparency

The objective of the first transformation stage is to improve the cost transparency of IT spending. At this stage, IT drives value primarily by supplying cost-competitive infrastructure and information management services. Virtualization technology is deployed in IT-controlled domains to build skills and demonstrate success. Virtualization reduces capital and operational expenses through consolidation and improved operational efficiency. Virtualization also helps improve service and cost visibility. Fixed cost, allocation and utilization based costing models can be used to tie infrastructure costs to specific applications and business processes. Through increased visibility of service delivery related to costs, IT can benchmark its cost and service levels, and can earn its role as the preferred service provider to the business. At this stage, IT gains confidence in its virtualization skills and technology, and business executives gain confidence in IT.

Transformation objective: Demonstrate that IT is delivering value for money

Business executives' low confidence in IT often starts with lack of visibility of the linkage between spending and services delivered. To earn the role as the preferred service provider to the business, IT must demonstrate that it provides the right services, at the right level of quality, at a competitive price. At this stage, IT needs to communicate unit-level cost information related to the services delivered. Enabling an apples-to-apples cost comparison gives business funders of IT the information they can use to make decisions about priorities. Without clear unit-level cost visibility, IT funders are skeptical about IT's ability to manage the organization. Providing business-relevant unit-cost information is a prerequisite for building confidence.

CIO communication challenge: Demonstrate business competence

The key communication challenge is to use business-relevant terms to demonstrate that IT can effectively manage the resources in IT's domain of control. As one business executive skeptically noted, "You can't run your own business, why would I let you touch mine?"[15] Top performers know their cost and service delivery numbers, and they demonstrate that they are effectively managing IT resources.

> **"You can't run your own business, why would I let you touch mine?"**
>
> **—Business executive to IT executive**

Key capabilities: Establish virtualization foundation

In this phase, the IT department is the main driver for virtualization. Assets typically virtualized and consolidated are file and print servers, domain controllers, and Web servers. Test and development servers not in the production environment are also primary candidates for consolidation. By virtualizing systems that are within IT's domain of control, the organization can gain skills and confidence during initial deployments.[16] The use of virtualization technology directly and significantly improves IT's ability to demonstrate cost efficiency and visibility.

Virtualization value: Cost efficiency and transparency

The cost savings associated with initial server consolidation efforts are significant. IT can dramatically increase datacenter capacity, delay capital investments, and reduce energy costs. IDC estimates indicate that a simple consolidated infrastructure reduces total cost per user by 35%.[17] In addition, staff efficiency can increase by as much as 20%.[18] Virtualization also improves service visibility because the deployment of virtual servers easily can be tracked, and resource usage information can be consolidated at the service level. Accounting for service usage is a prerequisite for breaking aggregated cost data into unit-cost information.

Key measures: Cost efficiency and visibility

Key measures at this transformation stage are related to hardware and operational cost savings as well as cost visibility:

- Hardware replacement cost
- Power and cooling costs
- Server to system administrator ratio
- Service usage transparency

Virtualization sponsorship: Director level

Sponsorship for this stage of virtualization typically comes from the IT manager or director level. However, because virtualized assets at this stage are infrastructure related, sponsors often are those who have responsibility for virtualized systems. CIOs can use virtualization cost savings and service usage data to help demonstrate operational excellence in their organization.

CIO Story: Better resource management

Although the sponsor of virtualization technology is at the director level, the CIO can have a business level conversation about how virtualization is being used to improve the management of IT. Translating cost efficiency gains into changes in unit cost data help demonstrate how IT is proactively improving resource management. Highlighting availability and service level gains sets up conversation about virtualizing business critical applications.

Transformation Stage 2: Business Outcomes

The transformation objective at this stage is to link IT spending to business outcomes. In addition to managing shared information management services, IT also focuses on business process optimization and business application availability. Virtualization deployment is extended to business-critical applications. Virtualization at this stage helps speed the development-to-release cycle, increases critical application uptime, improves service management response time, and puts more business systems under disaster recovery control. Service and cost visibility further improves the linkage of IT spending to specific business outcomes that result from optimized business processes. Operational efficiencies further reduce the unit cost of IT and reduce the budget spent on running what is in place, freeing resources to drive specific business outcomes.

Transformation objective: Link spending to business outcomes

In the first stage, the objective was to provide transparency of IT spending. In this stage, the objective is to link IT spending to business outcomes. Effective IT management of IT resources increases business executives' confidence in IT, and they then give IT permission to get directly involved in improving key value-chain business activities. IT should seek opportunities to participate in business process improvement projects. Business executives should be invited to help set IT priorities and allocate IT resources.[19]

CIO communication challenge: Show that IT spending is making the business better

The communication challenge is to shift all communications to an external business perspective. As Stuart McGuigan, CIO at CVS Caremark explains, "IT doesn't do anything magical; it merely enables the business to do things it already does—or could do—faster, better, and cheaper.[20] Top performers have an external view of IT and present IT initiatives in terms of business outcomes. CIOs may expand their role as business manager and add functional responsibility in addition to IT.[21]

> "IT doesn't do anything magical; it merely enables the business to do things it already does—or could do—faster, better, and cheaper."
>
> —Stuart McGuigan
> CIO, CVS Caremark

Key capabilities: Virtualize business-critical applications

Demonstrating proficiency with virtualization in stage 1 builds confidence that IT can effectively manage virtual environments. In stage 2, the virtualization footprint is expanded to include core business applications such as Microsoft Exchange, financial applications, supply chain applications, and database servers. In addition, many organizations adopt a "virtualization first" policy requiring all new deployments to be provisioned in a virtual environment if possible. The ability to enforce this policy with business application owners is dependent on business confidence in IT.[22] Efficiency gains free up IT resources to participate in business process improvement efforts to better support business outcomes.

Virtualization value: Business application service quality

The virtualization value proposition at this stage shifts from a cost reduction and visibility focus to a business outcome focus. Virtualization value is focused on quality of service and business continuity. Deploying business-critical applications in a virtual environment reduces unplanned downtime. IDC estimates that organizations with more than 25% of servers virtualized can achieve a 50% reduction in downtime for virtualized systems.[23] In addition, business-critical applications can be easily moved without service interruption during maintenance activities, further reducing service interruption. EMA analysis of operating expense improvements suggest that rebuild-versus-repair policies can reduce virtualized system mean time to repair by 10% on average.[24] In addition, virtualization provides a cost-effective means for putting more systems under disaster recovery control.

Cost visibility is extended to business systems, allowing IT to link spending to business outcomes affected by virtualized applications. Virtualization operational efficiency gains further free IT resources to participate in process optimization efforts. The speed of release to production deployment is significantly increased; new systems are deployed on average 24 times faster, and new applications are deployed on average twice as fast as in a dedicated server environment.[25] These combined benefits directly affect the management of business-critical systems and support business outcomes. Virtualizing key business applications at this stage has a direct impact on the objective of linking IT spending to business outcomes.

Key measures: Quality of service

Key measures at this transformation stage are related to business system service quality and the speed of development to production deployment:

- Availability (uptime)
- Mean time to repair
- Planned downtime
- Number of systems under disaster recovery control
- Application deployment speed
- Percentage of resources running what is in place

Operational cost savings achieved at the 1st transformation stage are extended at this stage, as more systems are virtualized further improving service management and service support efficiencies.

Virtualization sponsorship: Vice president

In this stage, virtualization sponsorship shifts to the vice president level. IT needs to sell the value of virtualization to business funders and application owners. Business funders care about the impact of virtualization on shared resource funding models and the risk to business outcomes. Application owners care about the performance, quality of service, and time to market for applications. An executive-level sponsor who has broad responsibility and accountability is needed to broker these conversations.

CIO Story: Better business outcomes

Although the sponsor of virtualization technology is at the vice president level, the CIO can have a business level conversation about how virtualization is improving Its ability to enable business outcomes. Virtualization increases availability, service support efficiency, and puts more systems under disaster recovery control. That provides a compelling story for business executives.

Transformation Stage 3: High-Velocity IT

The transformation objective at this stage is to identify new sources of IT-enabled value to the organization. IT drives strategic value by helping to identify new IT-enabled products and services. Virtualization and private cloud deployments help increase the agility of computing environments through shared resource pools and high levels of process automation. As a result, IT can say "yes" to more business opportunities and then quickly scale high-quality IT services on demand. IT executives have demonstrated a fundamental shift in IT focus from technology to driving business results. IT executives earn a place at the executive table, and they offer ideas about new ways IT can transform business strategy.

Transformation objective: Identify IT-enabled business opportunities

In the second stage, the focus was on supporting business outcomes by optimizing business processes. In this third stage, the focus shifts to IT participating in strategy discussions and identifying new sources of IT value. Business executives have high confidence in IT's ability to focus on business outcomes. In effect, IT gains permission to offer new ideas about how technology can be used for competitive advantage. One new source of strategic value is further innovation and transformation of key value-chain processes. Another is identifying new technology-enabled product and service revenue streams that would not be possible without technology.

CIO communication challenge: Bring something to the table

The communication challenge is to bring to the executive table new ideas about how IT innovation can help the business create advantage. As Rebecca Jacoby, CIO at Cisco Systems, indicates, "John Chambers [CEO] says to me: 'Your job is to think of what I think before I think of it, and have it ready to go when I think of it.'"[26] Top performers allocate IT resources to studying competitors' use of technology and research game-changing innovation. CIOs often move away from operations roles to spend more time with customers and industry visionaries.[27]

> **"John Chambers says to me: 'Your job is to think of what I think before I think of it, and have it ready to go when I think of it.'"**
>
> **—Rebecca Jacoby CIO, Cisco Systems**

Key capabilities: Private cloud

At this stage, virtualization forms the backbone of IT infrastructure management. The extension of virtualization to a private cloud infrastructure allows IT to rapidly address changing business requirements by tapping on-demand scalable resources. Everything new is deployed in a virtual environment. Integrated service management tools and a high degree of automation further improve the quality of IT services. At this stage, virtualization and private cloud resources meet all three requirements of the high-velocity, low-cost IT transformation.[28] Efficiency gains free up IT resources that can be allocated to benchmarking competitors' use of technology and researching the feasibility of potential game-changing innovation.

Virtualization value: On-demand resources

In the first two stages, virtualization enables cost reduction, better cost visibility, and higher service quality for business-critical applications. In this stage, virtualization technology makes IT nimble. Many refer to their use of virtualization to manage dynamic pools of computing resources that can be accessed on demand as a private cloud. Infrastructure is architected to gain significant agility and scalability. Private cloud technology establishes a respond-and-scale infrastructure that can provision new capacity in near-real time. IT can centralize resources to enable new business models where IT is an internal service provider. Costs are further reduced by reaching the highest levels of resource utilization and by optimizing process efficiency through high degrees of automation. Top performers with advanced use of change and configuration tools, capacity planning, and inventory management can achieve a 20% staffing efficiency gain.[29]

Key measures: Deployment agility and scalability

Key measures at this transformation stage include the following:

- Time to capability
- Dynamic resource scaling
- Reduced process variability through automation
- System utilization

Virtualization sponsorship: CIO

At this stage, sponsorship for the private cloud computing model is at the highest level within IT. Private cloud technology directly enables new IT value creation and supports executive-level strategic initiatives.

CIO Story: Improved agility

The CIO can highlight how they directly sponsor private cloud initiatives in order to accelerate time to capability and drive technology innovation. Private cloud strategies create the opportunities for CIOs to help identify and quickly respond to new business opportunities.

Summary

 The IT value transformation road-map is designed to transform IT from a cost center to a strategic value driver. It addresses key success factors at both the executive communication and dynamic infrastructure levels. Each stage is catalytic in that it returns more resources to the organization thus fueling the next stage. Each stage is ordered to address pre-requisites that are required for success at the next stage. And, each stage is sustaining, creating enough value to the organization to remain in place even after the focus shifts to the next stage.

IT Value Transformation Road Map			
	Stage 1: Cost Transparency	Stage 2: Business Outcomes	Stage 3: High-Velocity IT
Transformation Objective	• Increase visibility of IT spending • IT earns role as company's preferred service provider	• Link IT spending to business outcomes • IT gains business executive confidence	• Identify new value drivers • IT and business executives discuss strategic value
CIO Communication Challenge	• Demonstrate that IT can effectively manage resources	• Shift communications to an external business perspective	• Identify and communicate game-changing innovation
Virtualization Value	• Cost efficiency and transparency	• Business application quality of service	• Agility and responsiveness
Key Capabilities	• Present unit cost information • Establish virtualization foundation	• Present cost information related to business outcomes • Virtualize business-critical applications • Allocate IT resource to support business process optimization	• Present game changing IT innovation • Deploy private cloud • Allocate IT resources to identify game-changing innovation
Key Measures	• Capital expenses • Operational expenses • Service and cost visibility	• Availability • Service support • Application release speed • % resources running what is in place	• Time to capability • Scalability • Process consistency • Resource utilization
Virtualization sponsorship	• Director—building competency and confidence	• Vice president—communicating value to business funders and application owners	• CIO—identifying strategic uses for IT
CIO Virtualization and Private Cloud Story	• Better resource management	• Better service levels for business critical applications	• Improved agility and ability to "say yes" to more opportunities • Anticipate high-value opportunities

Figure 7 – IT Value Transformation Roadmap – summary table

Additional Cloud Strategy Briefs

Evolving objectives — measuring the value of transformation

The IT value transformation requires sharp focus on key measures. Successfully working through the different priorities and objectives at varying stages of the transformation road map can be a challenge. Virtualization and private cloud solutions enable the additive competencies needed to meet evolving objectives. However, moving through transformation phases requires a series of key value measures that mark progress and help communicate results. Measures help focus resources on desired outcomes, and they help communicate progress and results to key stakeholders.

Situational awareness — identifying competencies and key success factors for the journey to private cloud computing

The IT value transformation road map is paved with expanding and additive competencies. People, process and technology based competencies are required for IT to drive strategic value. Situational awareness can highlight not only where the IT organization's competencies and focus currently are, but also to identify specific incremental areas of improvement that enable progress. Understanding best practices learned from other organizations can help identify key success factors considered to ensure transformation success. Specific triggers signal readiness to move to the next step.

Executive communication best practices — building confidence to ensure journey success

The IT value transformation requires IT executive sponsorship and commitment. However, optimized communication to multiple key stake holders is what will ensure transformation success. The IT organization, the executive team, business funders, and application owners have different concerns. As a result, IT executives should understand likely concerns that each may have at different stages of the transformation. Specific communication goals for each constituency and each transformation stage can help overcome objectives, convert skeptics to advocates, and demonstrate results.

End notes

[1] Kurt Milne, "Strategic Alignment Performance Study," IT Process Institute, September 2008. This ITPI study of 269 IT organizations found that, on average, 65% of total annual capital and operating expense is spent managing systems already in place.

[2] Ibid. In IT organizations focused primarily on providing utility information technology services, only 28% of total budget is available for new projects. However, those organizations enabling revenue-generating products and services have 43% of budget allocated to new projects. On average, 15% more of overall budget is spent on new projects at organizations that have achieved IT value transformation..

[3] Richard Hunter and George Westerman, *The Real Business of IT: How CIOs Create and Communicate Value* (Boston, MA: Harvard Business Press, 2009), xvi. This book highlights findings from a wide range of studies conducted by Gartner and MIT, including extensive interviews, surveys, and roundtables. "The path to success for these CIOs is not only clear, but astonishingly common—not in the sense of ordinary but in the sense that it is shared."

[4] Ibid., 6. The four steps include (1) change thinking to avoid value traps, (2) show that IT proves value for money, (3) show how IT improves business performance, and (4) show value beyond IT.

[5] Ibid., 12. Many CIOs lament that they never get the chance to engage the executive team in discussing IT's potential as a strategic weapon, or, when they do, no one listens. Success results from building perception of value step-by-step, laying each tier of the foundation before proceeding to the next.

[6] Kurt Milne, "Strategic Alignment Performance Study," IT Process Institute, September 2008. This study, built on the IT value archetype work of Forrester and McKinsey, identified three primary value archetypes for IT organizations.

[7] Richard Hunter and George Westerman, *The Real Business of IT: How CIOs Create and Communicate Value* (Boston, MA: Harvard Business Press, 2009), 43. "Top performers always know what their numbers are. To be perceived as a top performer, IT must know the score and communicate it to the rest of the business—just as the head of sales knows and communicates the sales figures for the latest quarter."

[8] Kurt Milne, "Strategic Alignment Performance Study," IT Process Institute, September 2008. For those IT organizations that actively participate in business process optimization efforts, having pervasive understanding of business needs at the IT executive and VP level was one of only four practices that had a statistically significant correlation with higher strategic alignment performance.

[9] Ibid. For those IT organizations that enable customer facing products and services, proactively educating everyone in IT about business objectives so that everyone understands how IT add value was the strongest predictor of top alignment performance.

[10] Richard Hunter and George Westerman, *The Real Business of IT: How CIOs Create and Communicate Value* (Boston, MA: Harvard Business Press, 2009), 14.

[11] Kurt Milne and Adrian Bowles, "Three tier IT governance maturity model," IT Process Institute, 2009. Of 66 practices tested, having a published process for making tactical and strategic service requests had a statistically significant impact on performance.

[12] Vittorio Viarengo, *Virtualization Journey*, www.journeytocloud.com.

[13] Kurt Milne, "Server virtualization maturity study," IT Process Institute, 2009. A key finding in this study was that virtualization management practices evolve as objectives evolve from consolidation, to

high availability, to dynamic resource management (private cloud).

[14]Richard Hunter and George Westerman, *The Real Business of IT: How CIOs Create and Communicate Value* (Boston, MA: Harvard Business Press, 2009), 21.

[15] Ibid, 41.

[16] Vittorio Viarengo, "IT Production Phase Drill Down", *Virtualization Journey*, www.journeytocloud.com.

[17]"Business Value of Virtualization: Realizing Benefits of Integrated Solutions," IDC,2008. Adopting a simple virtualized infrastructure can result in a reduction of up to 35% of total annual server costs per user compared with an unvirtualized static x86 server configuration.

[18] "Reducing Operational Expense (OpEx) with Virtualization and Virtual Systems Management," EMA November 2009, p. 4.

[19] Kurt Milne, "Strategic Alignment Performance Study," IT Process Institute, September 2008. For those IT organizations that enable customer-facing products and services, having IT and the business work together in setting IT strategy and priorities was the second most powerful alignment practice identified.

[20] Stuart McGuigan, "CVS CIO, Building a new business model," CIO Insight, (December 2009)

[21] Kurt Milne, "Strategic Alignment Performance Study," IT Process Institute, September 2008. The CIO role shifts as the organization transitions from a utility provider to a process optimizer role. Shift the CIO role from an operations focus to a business manager focus. Shift the CIO reporting structure from the COO or CFO to the CEO, or use a business-unit matrix reporting structure. Strengthen business executive relationships. Expand CIO business purview by expanding the role to include non-IT business functions such as facilities, and human resources.

[22] Vittorio Viarengo, "Virtualization Journey Stages," *Virtualization Journey*, www.journeytocloud.com

[23] Al Gillen, Tim Grieser, and Randy Perry, "Business value of virtualization: Realizing the benefits of integrated solutions," IDC, July 2008), 7.

[24] "Reducing Operational Expense (OpEx) with Virtualization and Virtual Systems Management," EMA, November 2009, p. 4.

[25] Ibid, 5.

[26] Rebecca Jacoby, "Cisco CIO: Communicating IT's Value," CIO Insight, (December 2009)

[27] Kurt Milne, "Strategic Alignment Performance Study," IT Process Institute, September 2008. The CIO role shifts as the organization transitions from a process optimizer to a revenue enabler role. The CIO most likely reports to the CEO or business unit executive, and primary roles of the CIO are business manager and corporate strategist. IT executives collaborate with business unit executives to set business goals and assess competitive and technology trends to help shape business strategy.

[28] Vittorio Viarengo, "Virtualization Journey Stages," *Virtualization Journey*, www.journeytocloud.com.

[29] "Reducing Operational Expense (OpEx) with Virtualization and Virtual Systems Management," EMA, November 2009, p. 4.