

vmware®

VMware Journey Adoption Insights

2011 REPORT

“To support the growing demands on our business, we realized we needed to undergo an IT transformation. Partnering with VMware, Qualcomm explored a value journey that has enabled us to improve IT agility with increased resiliency. We have been able to realign processes and improve self-service to such a degree that we have reduced new service delivery from weeks to days, with 99.9% uptime and a 70% reduction in capital expenditures.”

Brian Baker,
VP, Information Technology,
Qualcomm

VMware Journey Adoption Insights

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Executive Summary

Based on more than 10 years of customer experiences, the VMware® Journey is a proven and practical implementation roadmap for virtualization and cloud computing. It is designed to maximize benefits to organizations seeking to transform their IT environments to IT as a service. Each year, VMware conducts primary research with customers to measure the results of the VMware Journey and determine how new technologies and implementation approaches enable VMware customers to realize IT transformation goals.

The 2011 VMware Journey research reveals the following key adoption insights:

- **Savings** – VMware customers enjoy significant operational efficiencies and savings. Collectively, they report 30 percent reduction in CO₂ emissions and hardware maintenance, 27 percent savings in capital costs, and 18 percent overall reduction in datacenter costs.
- **Greater agility** – Customers are realizing greater business agility from virtualization. They are seeing 14 percent faster provisioning times and 25 percent faster application time to market compared with the 2010 results. They also report that agility is aided by cloud computing. In fact, the research shows that there is an opportunity cost for organizations that wait too long to adopt cloud computing.
- **Shifting ROI** – Customers indicate that they are receiving a 189 percent return on their total investment in virtualization. ROI rates are shifting compared with those reported in 2010, particularly in companies with <500 servers.
- **Mission-critical workloads** – Customers reveal that their mission-critical applications are between 40 and 60 percent virtualized—the two exceptions are Oracle databases on the low end of this spectrum (27 percent virtualized) and SharePoint on the high end (70 percent virtualized). All applications average 59 percent virtualized, with all mission-critical applications at 53 percent.
- **Stage advancement** – Customers state that their advancement to the next stage of the Journey is primarily motivated by economics, but those moving to IT as a service are also likely to be motivated by non-economic factors. Major stage advancement is seen every 24 months. From 2009 to 2011, customers report double-digit advancement while also predicting significant stage advancement in 2013.

Year-Over-Year Impact Comparison

VMware has been actively researching customer deployments for more than a decade. This is the second comprehensive report the company has issued outlining how customers are progressing on the VMware Journey.

Customers in 2011 place greater focus on applications as they strive for increased agility when compared with customers surveyed in 2010. The research also reveals that customers in 2011 incurred decreasing capital expenses (CapEx) compared with those surveyed in 2010.

As more hardware is running virtually in a hypervisor, the opportunity to decrease CapEx costs is shifting to opportunities to reduce operating expenses (OpEx). By automating infrastructure management and investing in application agility, customers are paying down the “maintenance debt” on their IT budgets.

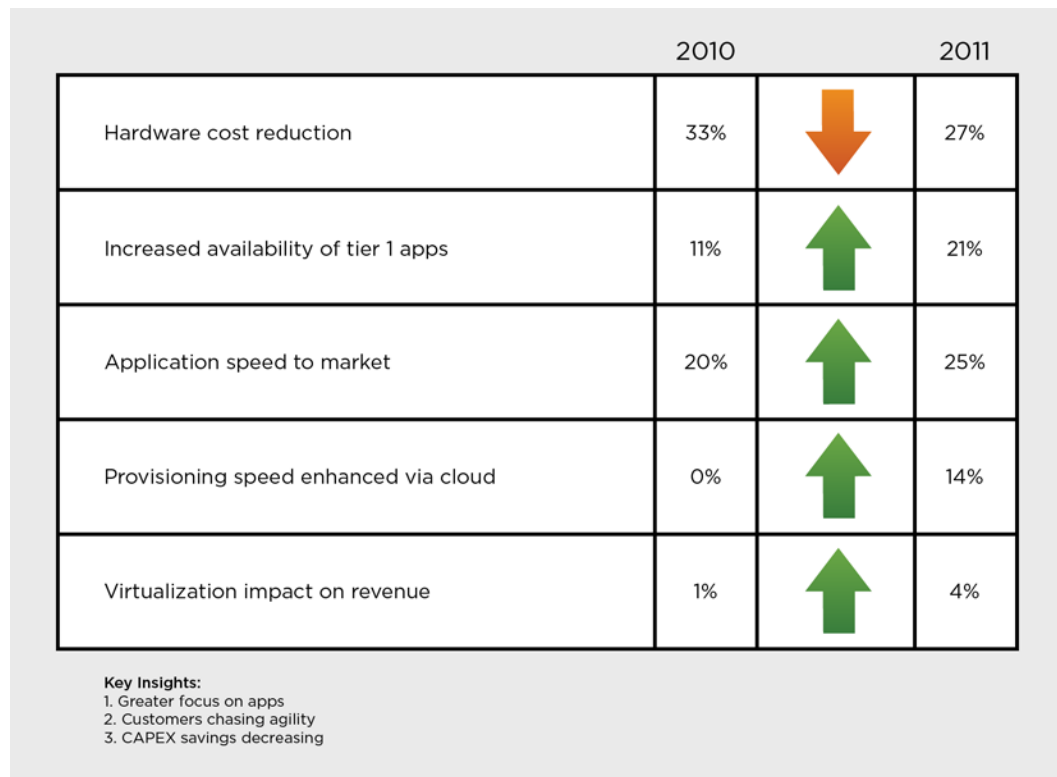


Figure 1: Comparison of customer focus, 2010 vs. 2011

Key Elements of Virtualization Adoption

Four elements must be present for an organization to successfully maximize its investment in virtualization and cloud computing, accelerate the adoption of VMware technologies, and amplify its return on investment.

These key elements are paramount to virtualization adoption success:

- Technical, business and operational triggers to catalyze initiatives by immediately and regularly matching IT strategy to business strategy
- Sponsorship and ownership of virtualization or cloud initiatives
- Confidence to virtualize or deploy any workload to the cloud
- Value measurement and broad reporting

A closer look into the natural progression of these elements reveals an ongoing cycle or pattern of triggers and action, resulting in value. Figure 2 outlines some of the technical, business and operational triggers that prompt organizations to consider virtualization and the cloud. These triggers catalyze initiatives by making it necessary for organizations to match IT strategy to business strategy, immediately and regularly.

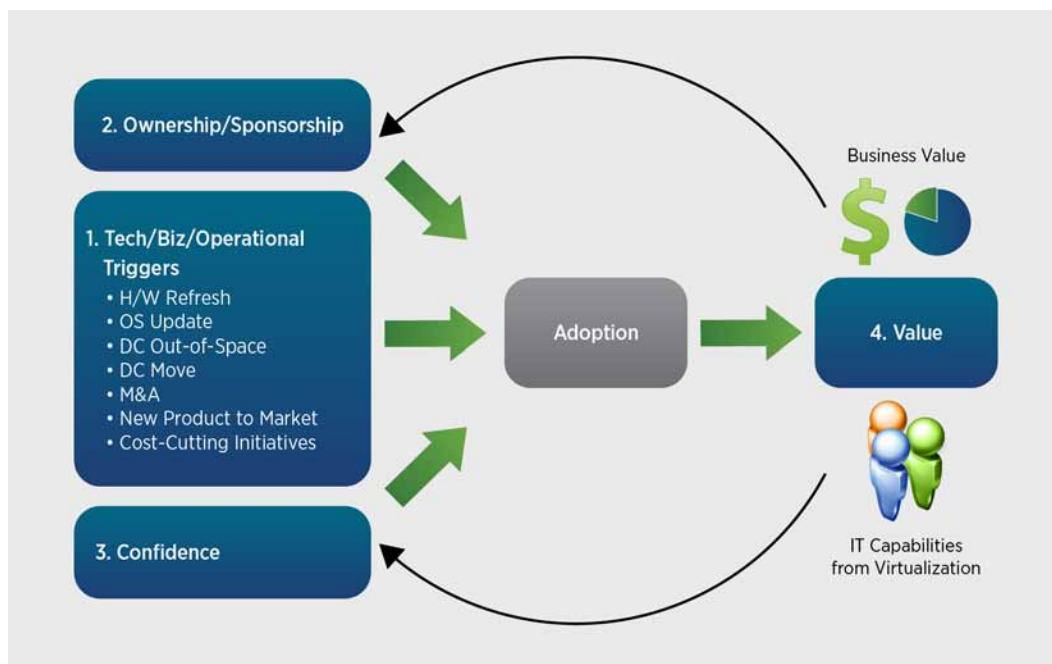


Figure 2: Elements necessary to successfully maximize investments in virtualization

For each new project, sponsorship and ownership are critical because they ensure that everyone is working toward the defined objective. In addition, sponsorship, as well as experience with previous virtualization initiatives, gives IT organizations the confidence to virtualize or deploy any workload to the cloud. Lastly, when organizations realize and measure value, and then report those gains broadly throughout the organization, they increase buy-in from key stakeholders, manage expectations more effectively and achieve even greater business benefits. With these four key drivers in place, organizations can most effectively align around those capabilities that enable IT to better meet business needs. For example, IT is positioned to accelerate the integration of acquired assets or more efficiently leverage existing capacity.

Who Participated in the Research?

To understand the global impact of virtualization and cloud computing, VMware conducted its research worldwide in two waves of quantitative and qualitative surveys by using the Web, dialog and focus groups. The results were compiled by Management Insight Technologies and analyzed by Neochange, Inc.¹ The following charts represent the organizations participating in the 2011 adoption findings.

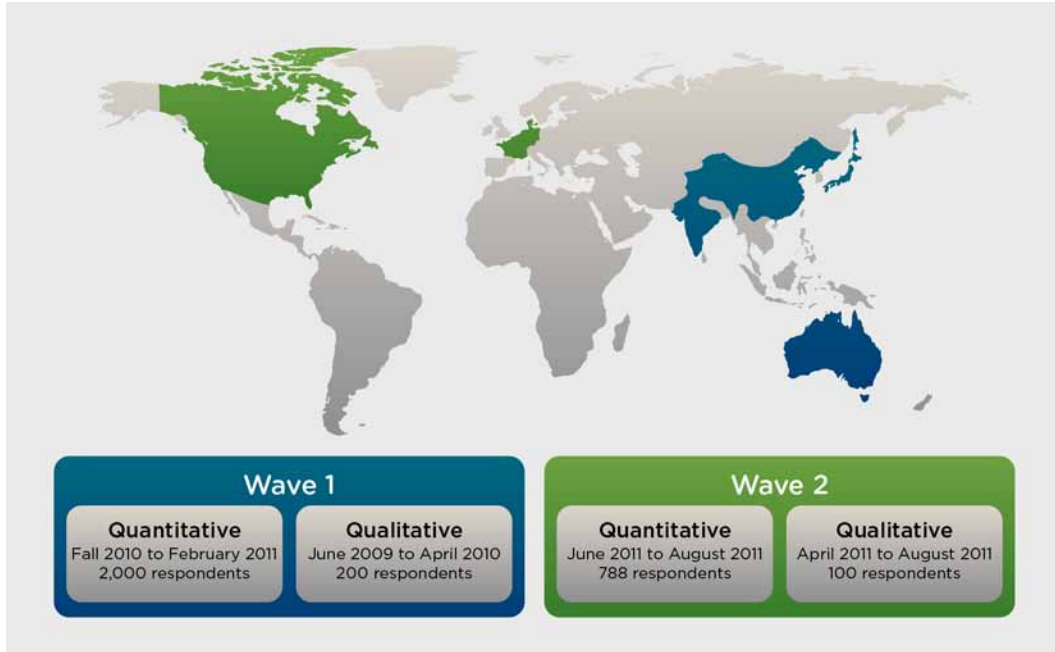


Figure 3: Primary research from hundreds of respondents worldwide

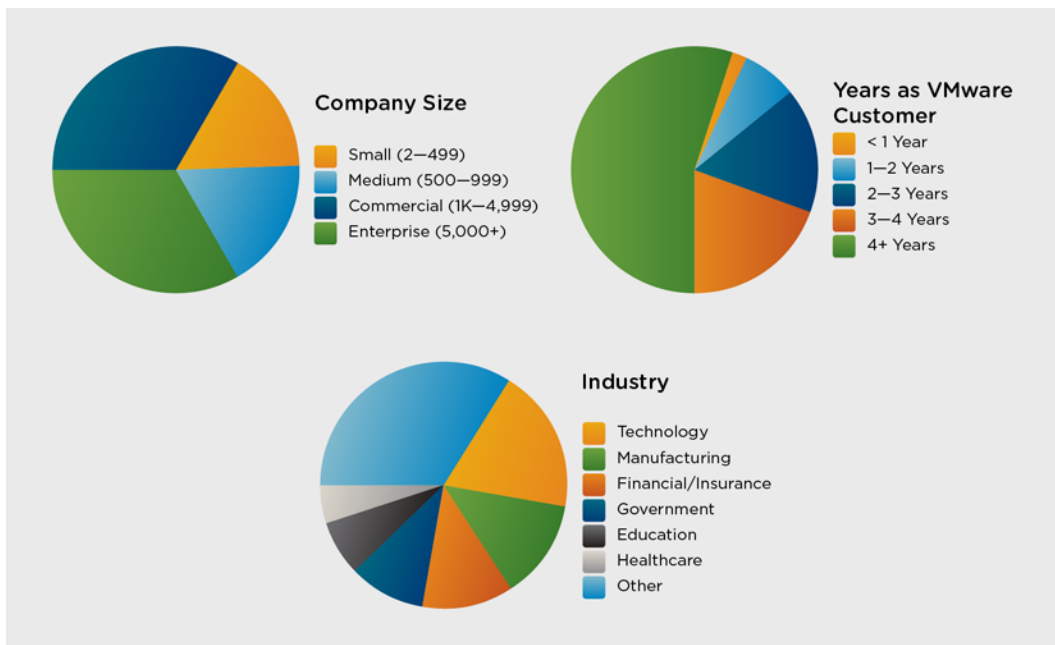


Figure 4: Participating company profiles

VMware Journey Defined

In 2009, VMware researched and thoroughly documented the typical steps hundreds of customers worldwide used to adopt VMware virtualization technologies over the prior decade. From that research, VMware developed the VMware Journey, which consists of three phases: IT Production, Business Production and IT as a Service.

The VMware Journey is the pragmatic approach that VMware customers follow to implement virtualization with cloud computing capabilities in order to transform IT and enable IT as a service. To properly describe and quantify the Journey, it is important to examine how customers adopt VMware technologies.

VMware Journey Phases

Customers begin the VMware Journey by virtualizing infrastructure, development and test environments for mission-critical applications. Virtualizing these low-governance workloads provides IT teams with the confidence to virtualize more-sophisticated workloads later in their journey.

As confidence, sponsorship and the value derived from virtualization extend across the organization, IT shifts its focus to virtualizing mission-critical, multitier applications in production environments. This shift in focus increases the availability of all workloads and improves service-level agreements (SLAs) with the business. This continuous and measured evolution of the IT environment represents a pragmatic approach to virtualization and cloud computing.

Next, IT leverages its focus on applications to drive pervasive changes to outbound IT service levels, including the performance of high-governance workloads. This focus on the business fosters better communication and partnership between IT and lines of business, and results in better overall business agility.

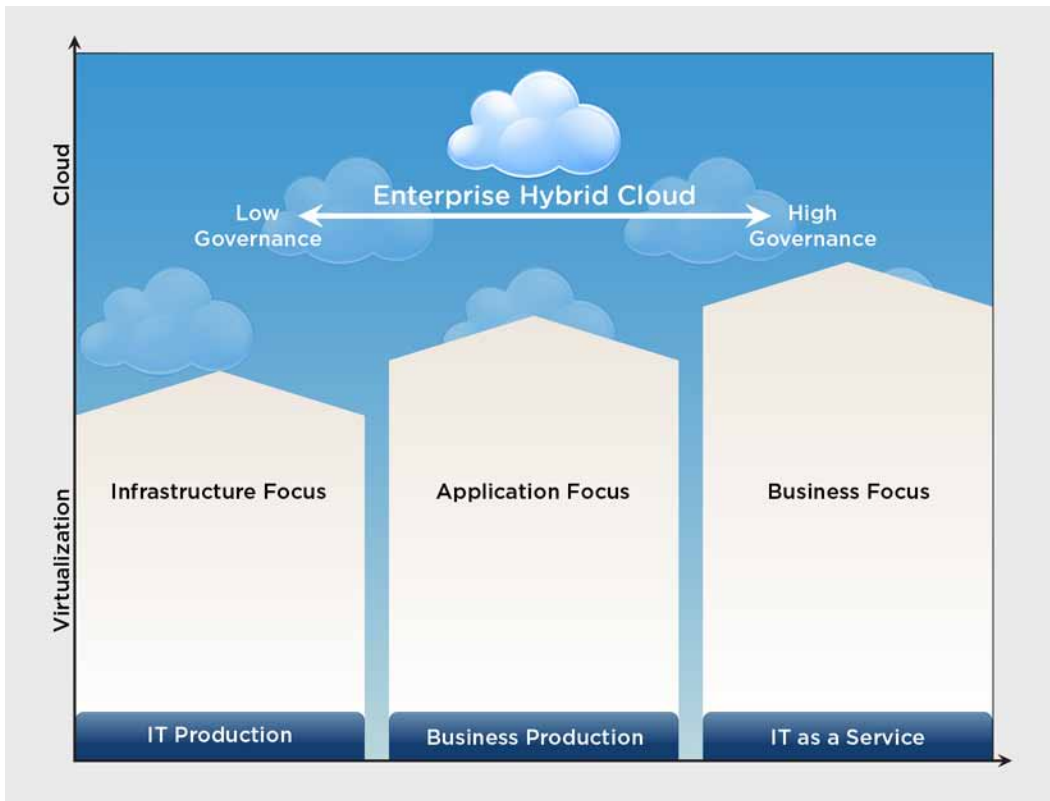


Figure 5: Three-phased Journey drives IT transformation, enables IT as a service

While all Chief Information Officers (CIOs) optimize their approach to transforming the IT organization based on the needs of the business, VMware research now shows that CIOs can use the cloud as a strategic hedge against the less dramatic results netted by the more incremental approach to virtualization. Since IT efficiency gains become less pronounced in later phases of the Journey, CIOs who make early investments in cloud computing demonstrate even more dramatic results and realize greater value. The delta in the area under the two curves represents the additional value that could be realized by adopting cloud earlier in the Journey rather than waiting until phase 2.

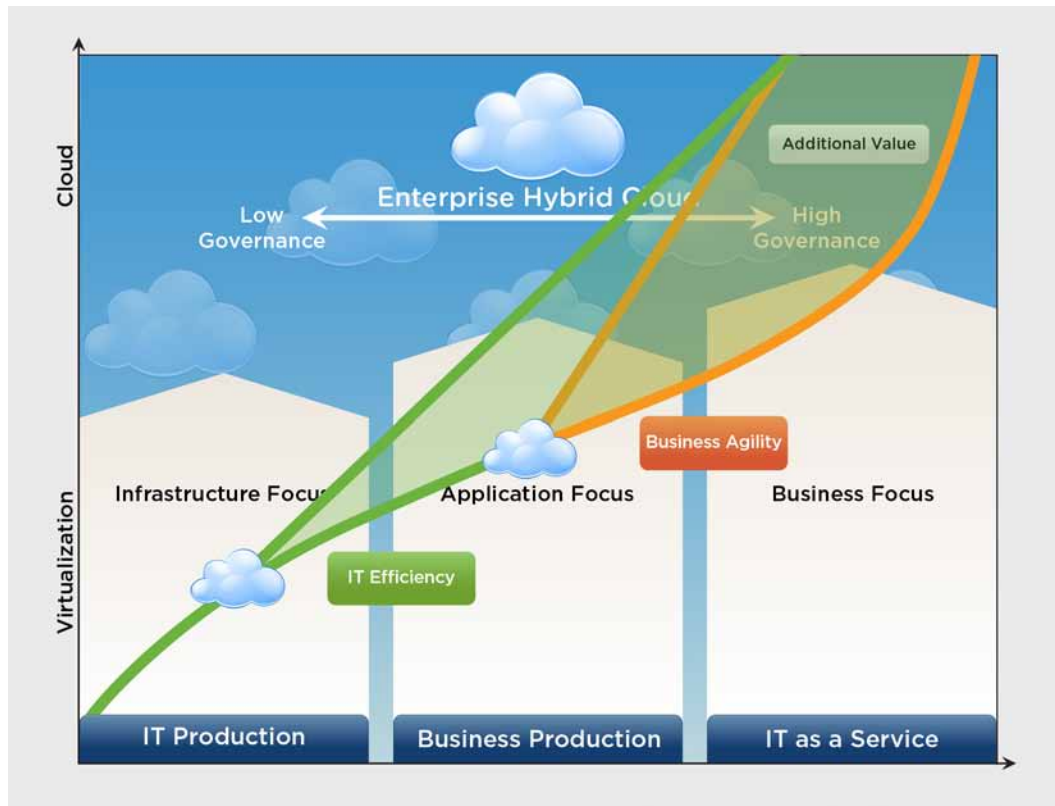


Figure 6: Organizations that adopt cloud computing earlier accelerate and amplify value

Based on this new insight, the clear call to action for CIOs is to continue to virtualize mission-critical workloads on VMware technologies, but also to invest now in cloud computing to increase business agility. This strategy builds on the value they have already achieved through increasing IT efficiency.

By investing in cloud computing earlier, organizations amplify the value they have already received from existing virtual infrastructure. When organizations invest in cloud and business agility later, they still reap the benefits of cloud computing, but there is an opportunity cost to delaying the investment. For those customers that focus on agility earlier (at about 25 percent virtualized), breakthrough results—including OpEx and CapEx reductions and greater agility—are achieved earlier and about six times faster when compared with counterparts that focus on agility later in the IT transformation journey.

Cloud computing is a strategic opportunity to amplify current returns from investment in VMware technology. If an organization is 50 percent virtualized or more and not invested in cloud computing, it is leaving significant value untapped.

VMware Journey Phases by Company

VMware refreshes the research behind the VMware Journey every year to understand how innovation enables VMware customers to realize their IT transformation goals. This report, which encompasses the knowledge and experience of hundreds of VMware customers through late summer 2011, includes companies worldwide in the Journey phases illustrated in Figures 7 and 8.

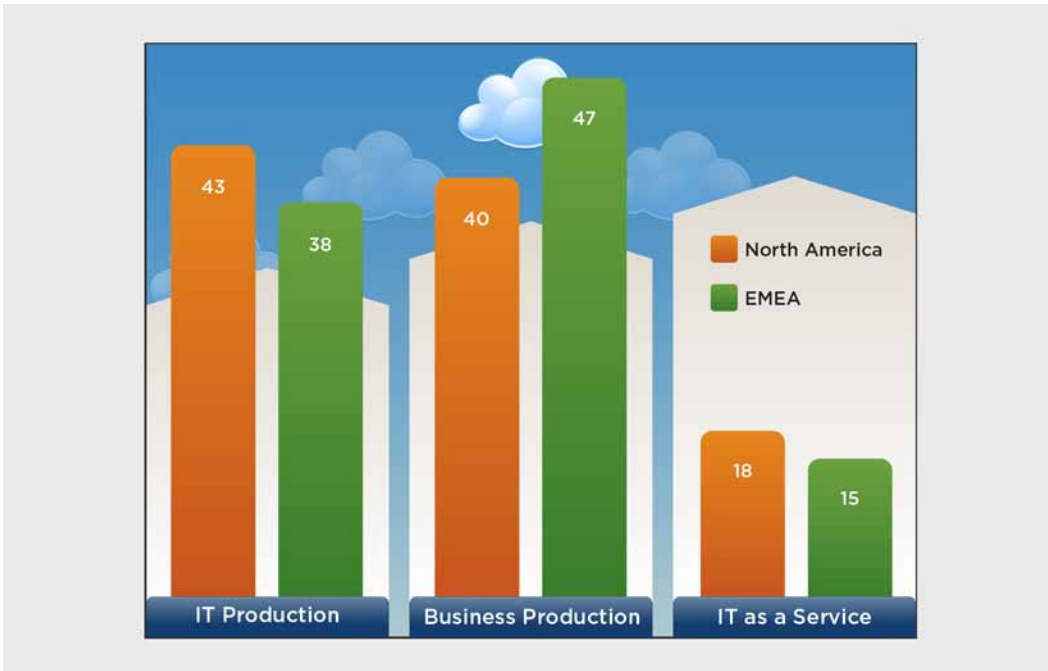


Figure 7: Companies in specific VMware Journey phases by region



Figure 8: Size of companies participating in the Journey research

“When we started, we thought the greatest benefit of virtualization would be the hardware cost savings. We have definitely saved there. But we’ve also seen tremendous operational savings in the form of increased efficiency and agility. In fact, we expect to save hundreds of thousands of dollars. With VMware virtualization and cloud infrastructure in place, we can now more easily transition to a cloud computing approach, which will enable us to optimize IT service delivery even further.”

Juergen E. Mueller,
VP, Head of Cloud Computing Program, IT Solutions and Services,
Siemens

Journey Snapshot Highlights

VMware Journey Highlights

The following pages outline adoption highlights in aggregate, as well by key metrics.

Modernization of Business-Critical Applications Pays Off

Organizations are benefiting from virtualizing mission-critical business applications, which include production databases, financial systems and customer-facing business applications.

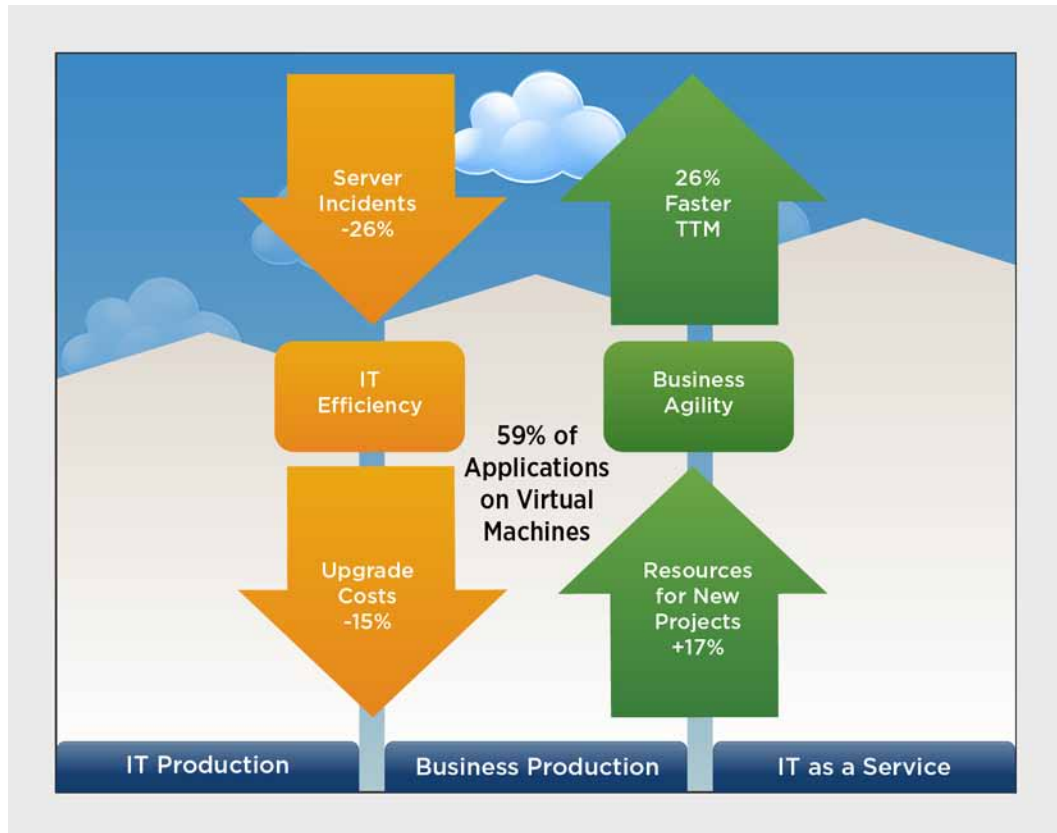


Figure 9: Companies that virtualize applications early gain significant cost and agility benefits faster

Key Metrics: Operational Virtualization Benefits (2011)

Survey participants report improvements of up to 30 percent in several operational areas, including server incidents, system downtime, application time to market, and downtime for tier 1, 2 and 3 applications because of virtualization. Reduction in provisioning time in the external cloud has become a strong benefit since 2010.

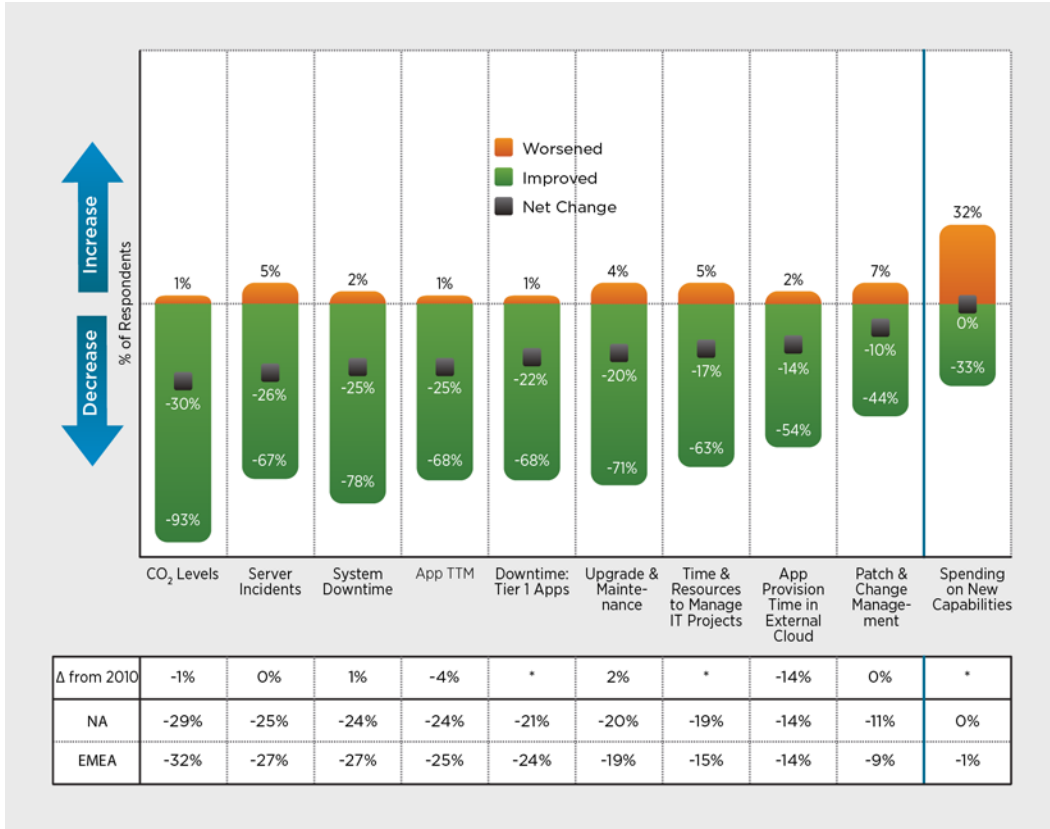


Figure 10: Virtualization delivered operational benefits in both 2010 and 2011

Key Metrics: Financial Virtualization Benefits (2011)

Survey participants have seen reductions of approximately 30 percent in infrastructure testing, maintenance and capital hardware costs through implementing virtualization. In addition, survey participants are realizing increased total revenue through virtualization adoption.

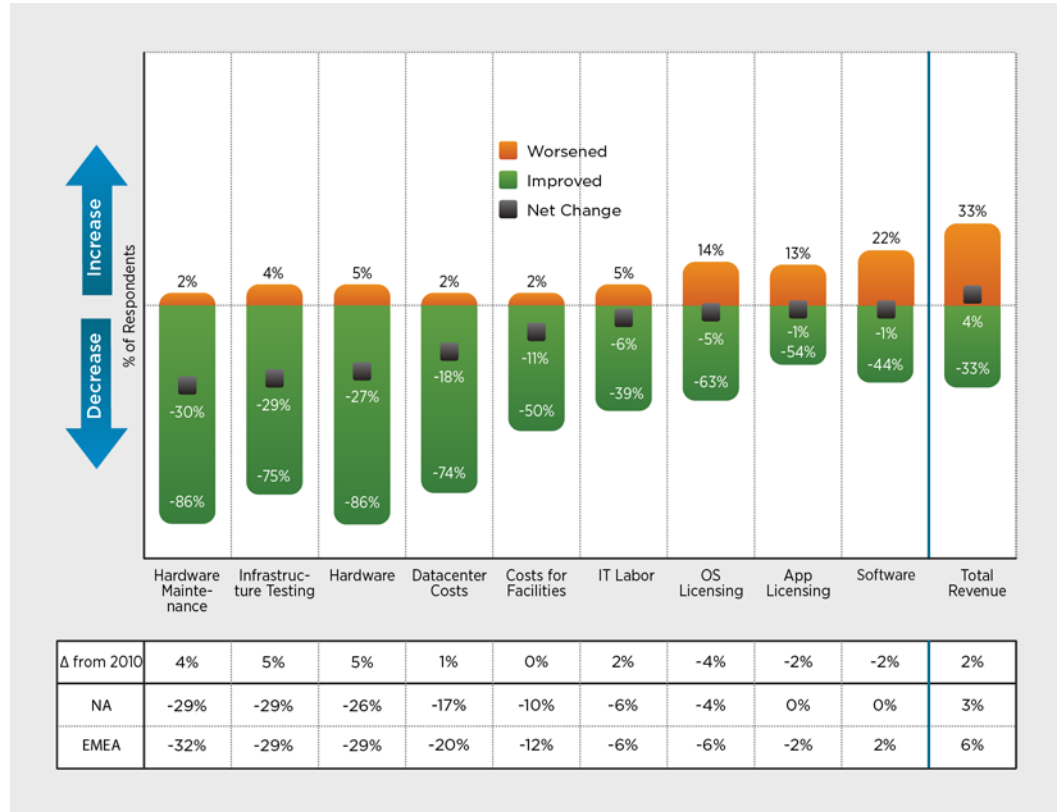


Figure 11: Virtualization delivered financial benefits in both 2010 and 2011

Segmentation of Participating Organizations

To appropriately categorize virtualization and cloud adoption, analysts segmented participating organizations into categories that reflect their intent and maturity. The first distinction focuses on the velocity of an organization's virtualization efforts in relation to its infrastructure refresh cycle. In this categorization, Figure 12 represents intent.

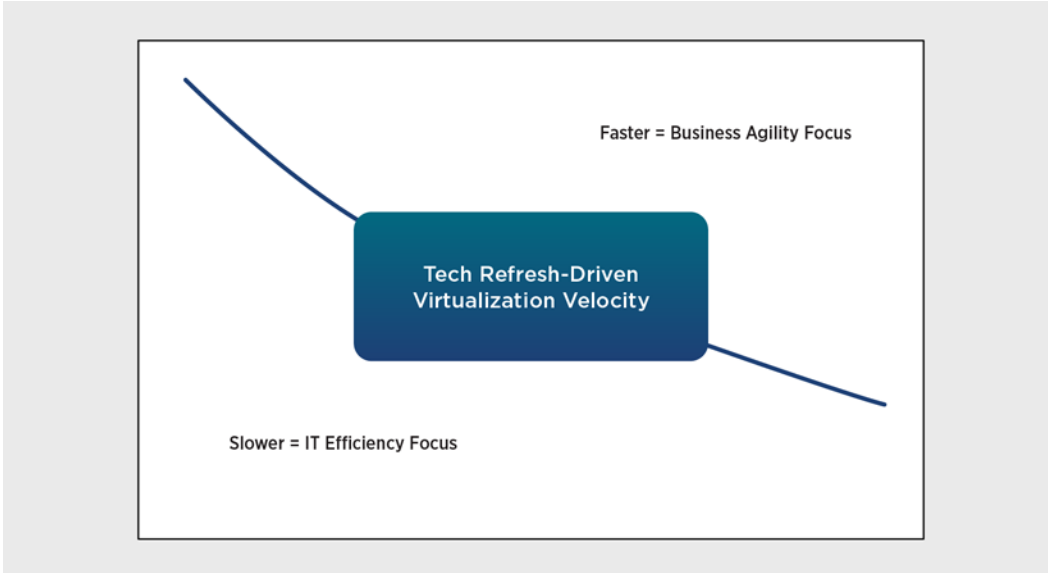


Figure 12: Organizations that adopt virtualization faster than their normal refresh cycle are more likely focused on business agility than IT efficiency

The second distinction reflects how well an organization is managing its virtual maturity. In this categorization, Figure 13 represents capability.

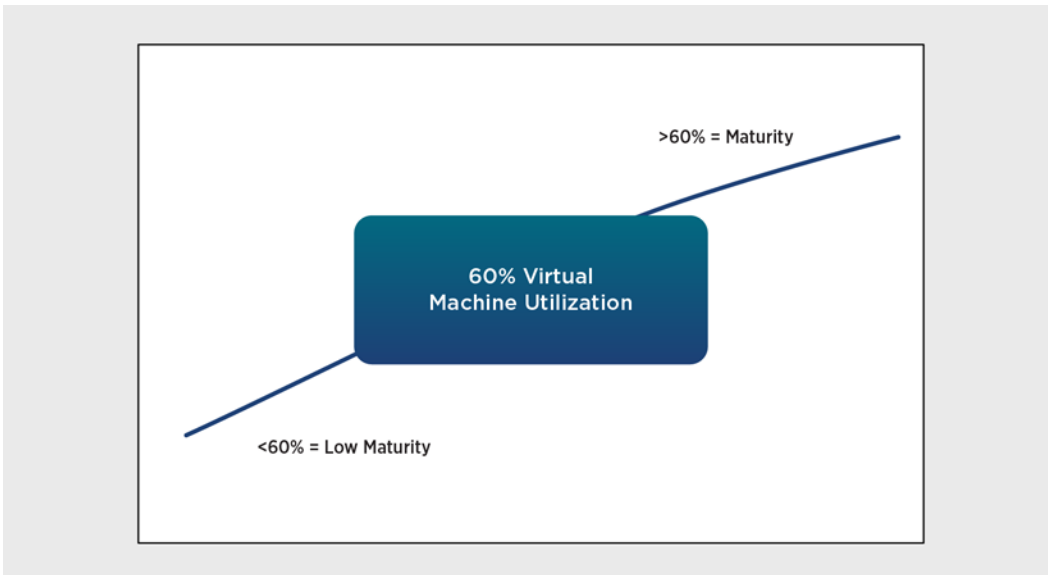


Figure 13: Above 60 percent virtual machine utilization, organizations are typically operating high-maturity virtual environments

Detailed Key Performance Indicators (KPIs) for IT Transformation

Organizations adopting VMware virtualization are transforming their IT and business environments. Examination of the data allows us to categorize the surveyed companies into six adoption profiles based on common traits, virtualization results and focus areas. Figure 14 provides an overview of top-level cost savings, quality improvements and agility gains by adoption profile that organizations have achieved by following the pragmatic VMware Journey.

		ADOPTION PROFILES					
		LATE BLOOMER	EXPERIMENTOR	MITIGATOR	ACCELERATOR	OPTIMIZER	HYBRID MASTER
		a	A	C	B	D	d
	Count (n=)	39	73	94	62	133	30
	% Customer	11%	20%	26%	17%	37%	9%
	ROI	1.56	1.64	2.03	2.19	2.20	2.26
	Total Apps Virtualized %	19%	35%	46%	66%	73%	85%
	Virtual Machine Utilization %	34%	36%	75%	38%	74%	92%
Cost	CapEx Reduction %	-21	-27	-18	-29	-41	-40
	HW Maintenance Reduction %	-22	-28	-25	-33	-40	-44
	IT Labor Reduction %	-6	-3	-8	-5	-10	-11
Quality	Incident Reduction %	-18	-23	-18	-29	-41	-40
	Downtime Reduction %	-22	-21	-15	-25	-36	-34
	Downtime Tier %	-16	-18	-15	-25	-34	-33
Agility	Patch & Change Cycles %	-7	-10	-8	-15	-18	-23
	Cloud Provisioning Cycles %	-8	-9	-12	-15	-22	-24
	Application TTM %	-14	-24	-23	-30	-32	-32
	Project Bandwidth Increase %	-13	-17	-15	-16	-24	-29
	Revenue Impact %	3.58	5.09	2.10	4.07	11.05	12.63

Figure 14: Detailed KPIs help organizations assess progress on VMware Journey

Further examination of the data in each column reveals that adoption velocity is a function of both intent and capability. It also identifies and dismisses the top and bottom 10 percent of organizations—identified in Figure 14 as the late bloomers and hybrid masters—to most effectively frame critical results as the Journey progresses.

Adoption Quadrant

The two drivers of intent and capability provide a quadrant that is useful for categorizing groups of like-minded organizations. In Figure 15, each quadrant represents a snapshot in time. Over time, an organization's position evolves. Within the quadrant, a natural progression is revealed that details the Journey.

Although organizations will change positions in the quadrant over time, most will naturally progress through cycles of IT, business and operational triggers, and action that ultimately result in greater value to the overall business.

Each adoption profile has a distinct focus area with key priorities that the organizations hope to achieve with virtualization.

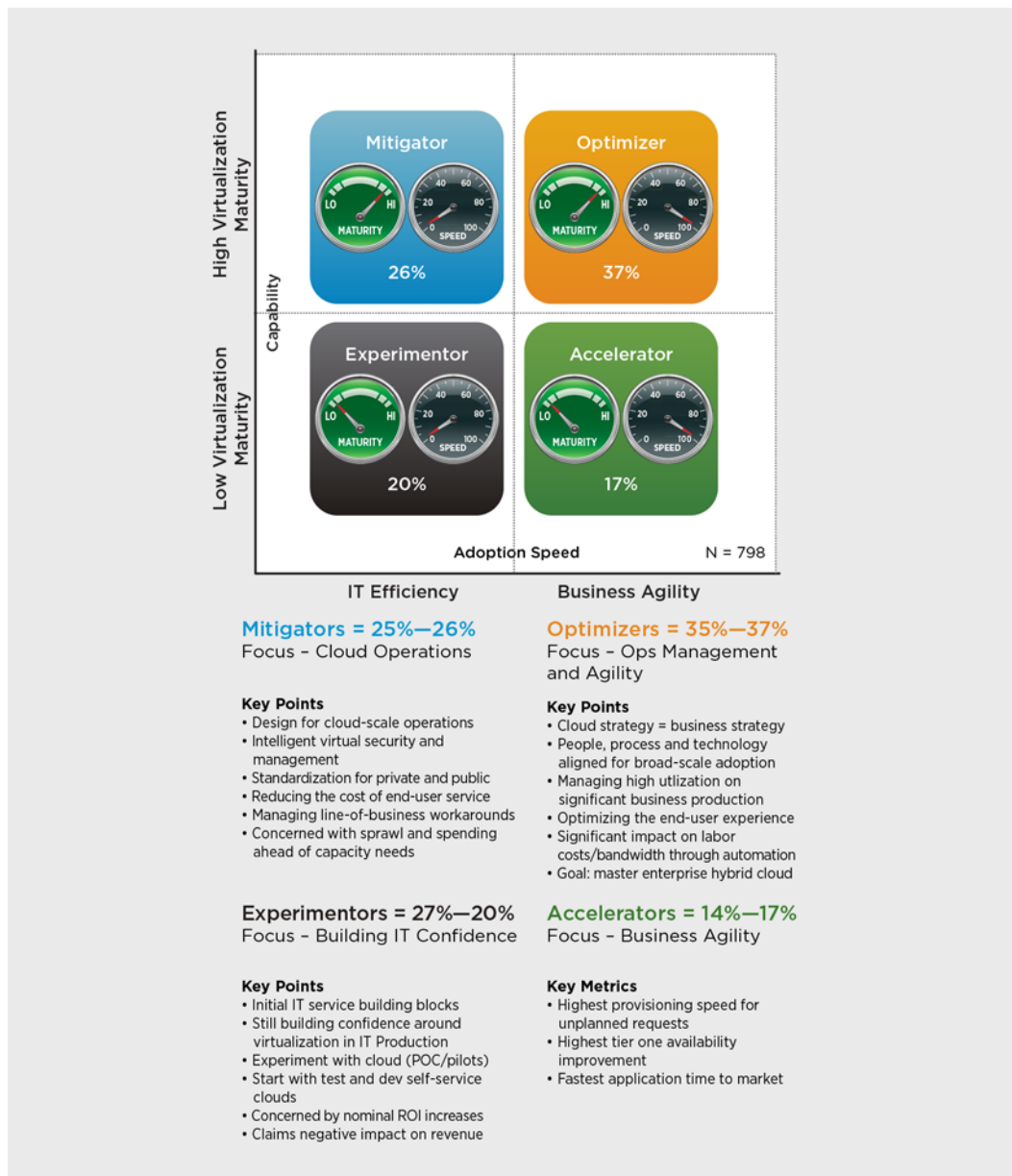


Figure 15: Mapping adoption profiles helps identify key virtualization focus areas and metrics

A complete map of the adoption profiles—plotted in Figure 16 by operating system virtualization rate and virtualization utilization rate—shows that as late bloomers step up their virtualization efforts, they take one of two common paths. Some choose to advance through a rapid burst of virtualization focused on application modernization, whereas others take a more modest path focused on IT operations. When these paths converge, which is typically at the optimizer adoption profile, agility and cost are equally balanced. From there, the remainder of the Journey is spent scaling and mastering enterprise hybrid cloud workloads.

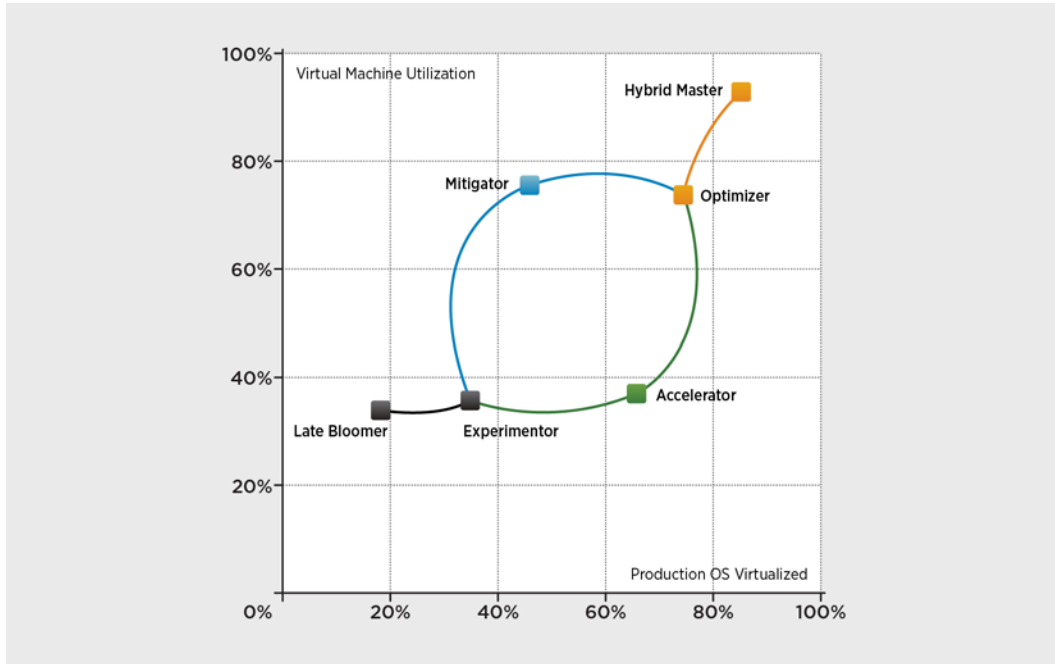


Figure 16: Complete map of adoption profiles, including top and bottom 10 percent of identified organizations

Cloud Computing Amplifies Virtualization Impact

The inclusion of cloud computing in an organization's strategic plans amplifies existing virtualization efforts and investments. The "cloud effect" is manifested in the results: Compared with organizations that have no interest in cloud adoption, x86 workloads are virtualized almost 1.2 times faster, and the overall impact on revenue is 500 percent greater.

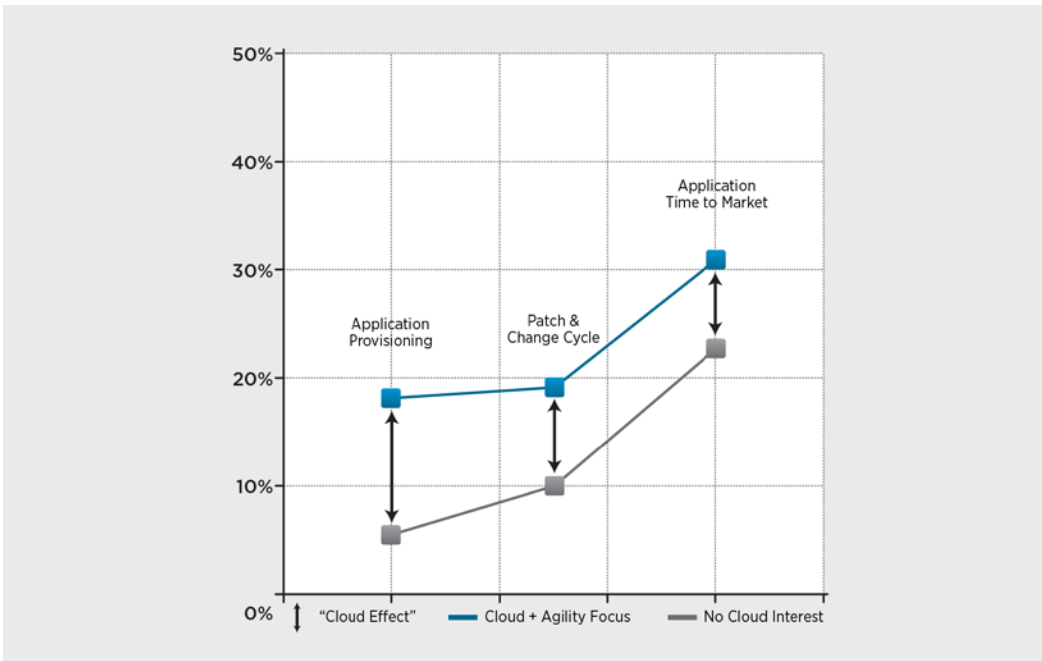


Figure 17: Critical virtualization KPIs higher when cloud computing is in portfolio

Virtualization Funds Business Continuity and Quality-of-Service Capabilities

Historically, the high costs of developing, testing and managing disaster recovery environments have forced many organizations to shortchange their business continuity plans. However, when organizations adopt virtualization, they no longer have to make trade-offs between high-performance operations and capital efficiency. Figure 18 demonstrates how escalating capital savings are channeled back into expanding business continuity environments and quality-of-service capabilities. This is only possible with virtual infrastructure.

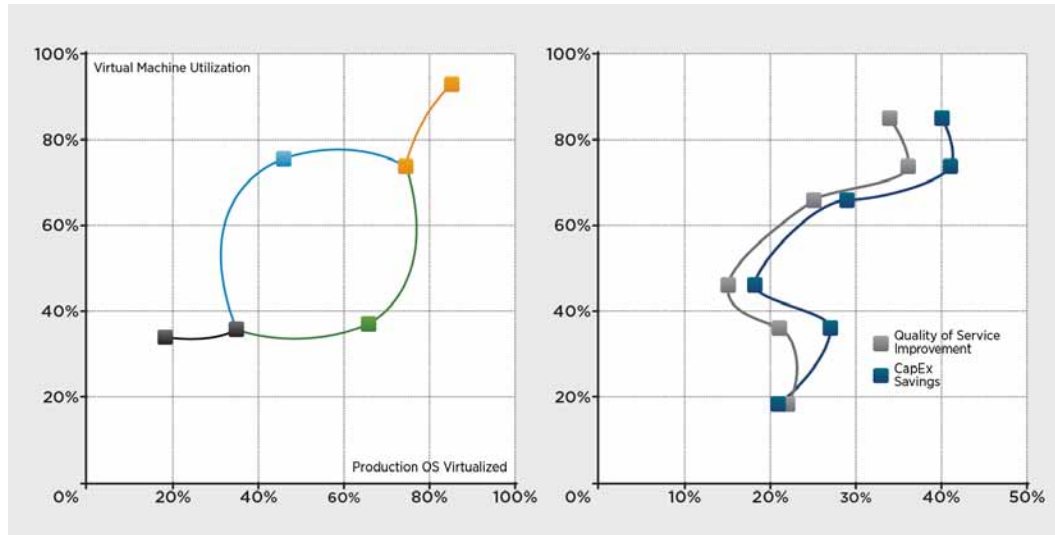


Figure 18: Only virtual infrastructure enables organizations to reinvest cost savings in business continuity and quality-of-service capabilities

Operational Transformation Occurs at the Tipping Point

While organizations experience productivity gains at all stages of the Journey, it is not until a tipping point occurs—at approximately 60+ percent virtualized and 60+ percent virtual machine utilization—that organizations achieve breakthrough change. At this point, efficient critical mass overcomes both virtualization transition costs and unfunded IT projects that absorb early virtualization gains. Big improvements in both bandwidth and speed transform the IT operating model, and organizations make significant inroads in addressing existing IT backlog and new demands.

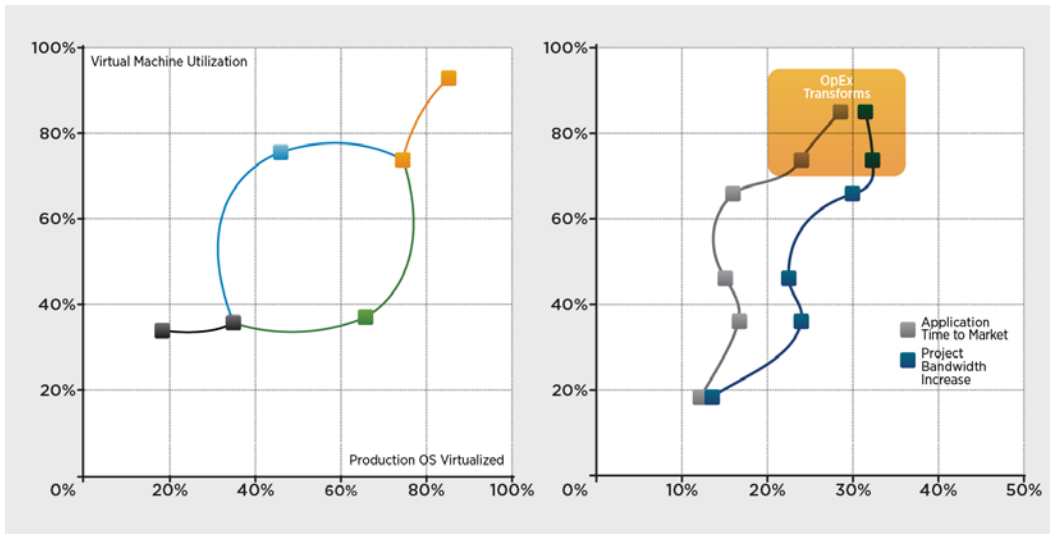


Figure 19: Organizations begin to achieve operational transformation when they surpass 60 percent virtualization plus 60 percent virtual machine utilization

Modernizing Applications Reduces IT Debt

Not surprisingly, organizations concerned about the impact of quality of service on revenue and market reputation leverage virtualization to improve tier 1 application availability by 25 percent. In addition to gaining a more robust environment, these organizations, which are focused on application modernization, reduce IT debt by achieving significant management improvements for business-critical infrastructure. By virtualizing mission-critical applications, they also materially improve maintenance-related KPIs, such as patching, testing and upgrading.

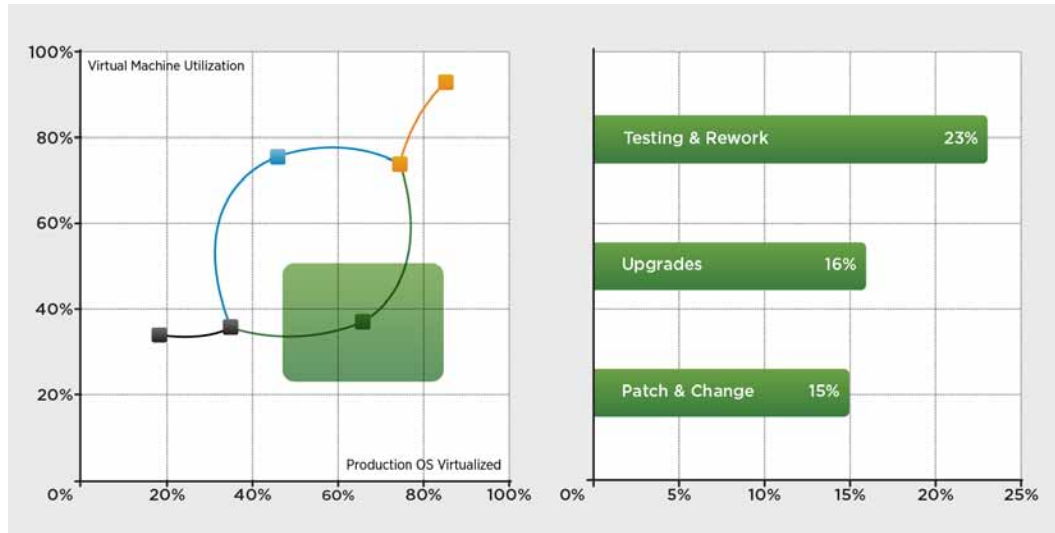


Figure 20: Application modernization efforts reduce IT debt

Attaining Agility Is a Process

IT agility is an approach to operations management that matures over time. For example, organizations that mature capacity provisioning over increasingly more sophisticated workloads reap the most benefits. On average, organizations achieve a 26 percent increase in application time-to-market speed for their persistent efforts.

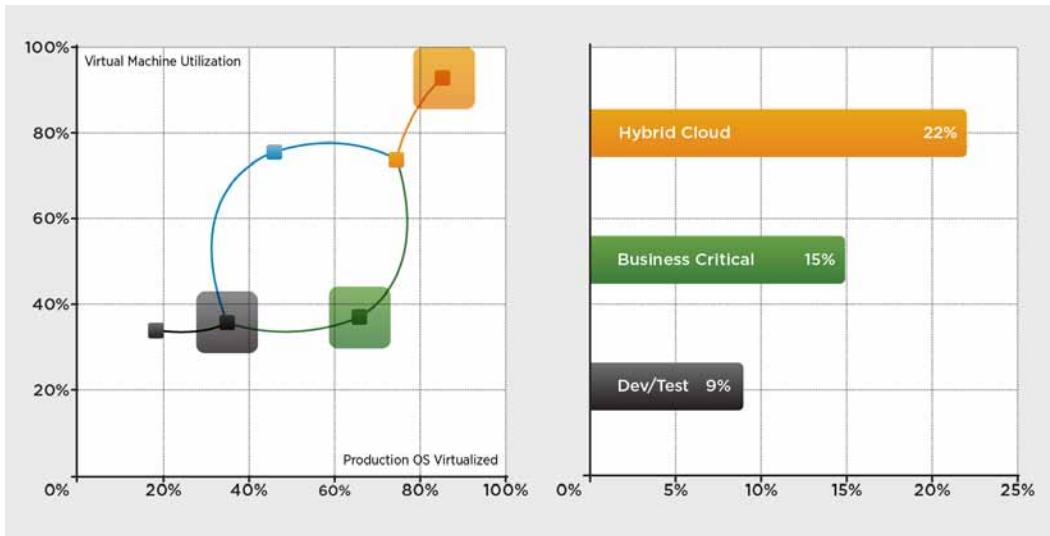


Figure 21: IT organizations improve provisioning KPIs as they progress through the Journey from development and testing to hybrid cloud workloads

Focus on Agility Promotes Growth

Every organization's journey is unique because it is focused on business outcomes that matter most to that organization. The research shows, however, that organizations focused on agility achieve higher levels of revenue impact (+9 percent) from their virtualization efforts than organizations focused on IT efficiency (+3 percent). Furthermore, the gap between the bottom and top 10 percent of companies is even greater. The revenue impact gap reinforces the need to consider agility-focused benefits as early in the Journey as possible, taking stakeholder receptiveness into account.

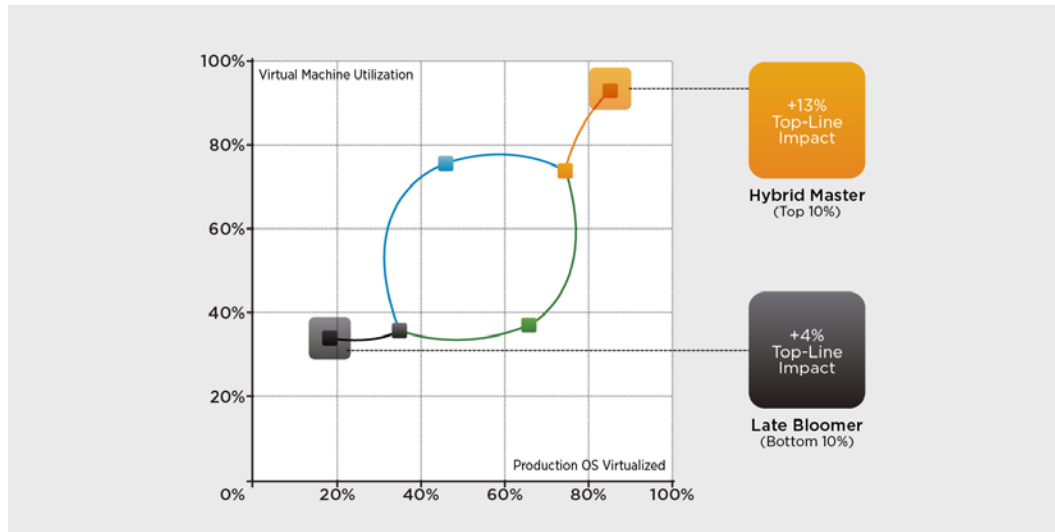


Figure 22: Adoption profiles help define top-line impact of virtualization on an enterprise

Value of Moving Forward

Figure 23 outlines three key virtualization benefit realizations. First, value increases over time, which comes from successive improvements in IT and business KPIs, as well as from increasing the critical mass of virtualized business-critical applications.

Second, ROI increases as the VMware Journey unfolds because incremental virtualization capabilities take advantage of preceding investments. Third, value realization accelerates as organizations reach and surpass the virtualization tipping point.

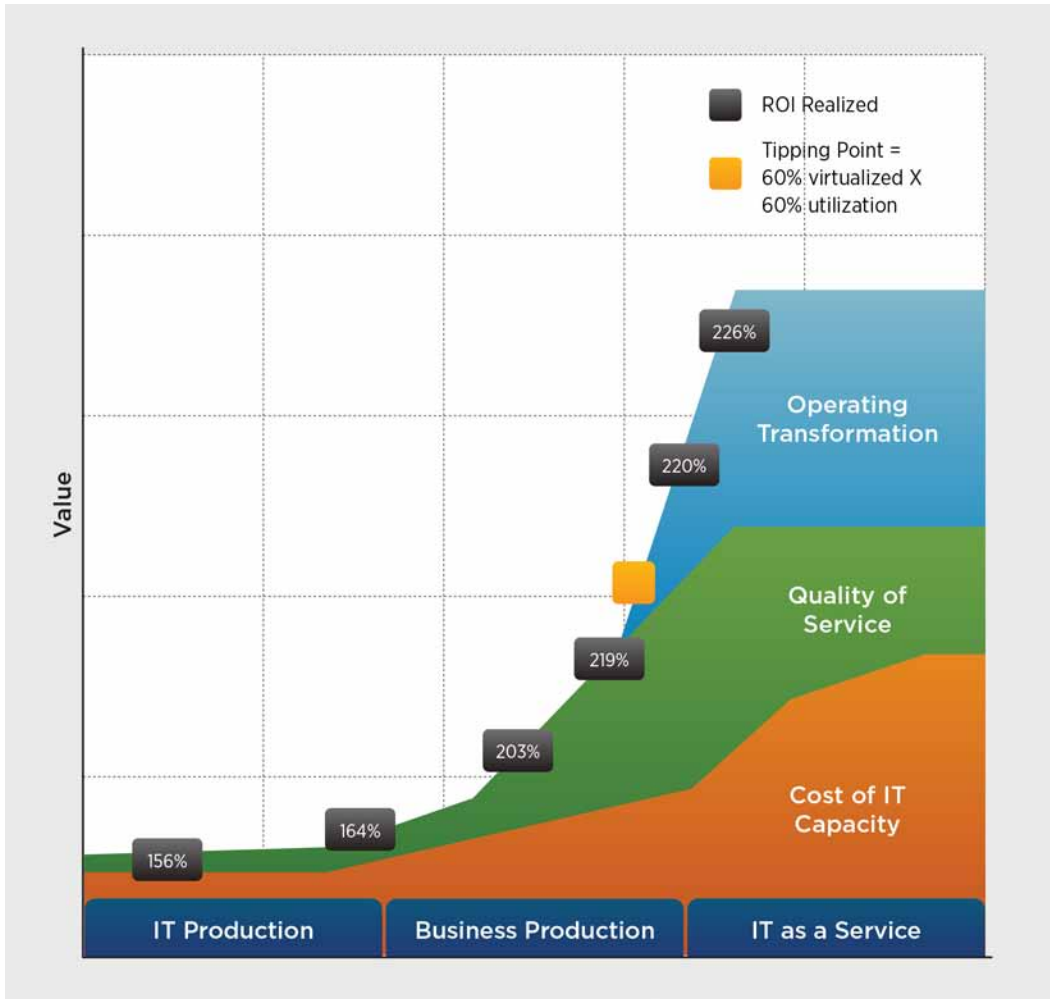


Figure 23: Realized ROI increases with each Journey stage

Future Intentions

Organizations participating in the research expect strong movement to both of the top two levels of virtualization adoption, with 33 percent expecting to be in the IT-as-a-service category in two years. This projected aggressive virtualization stage movement highlights the focus companies are now putting on delivering services on demand.

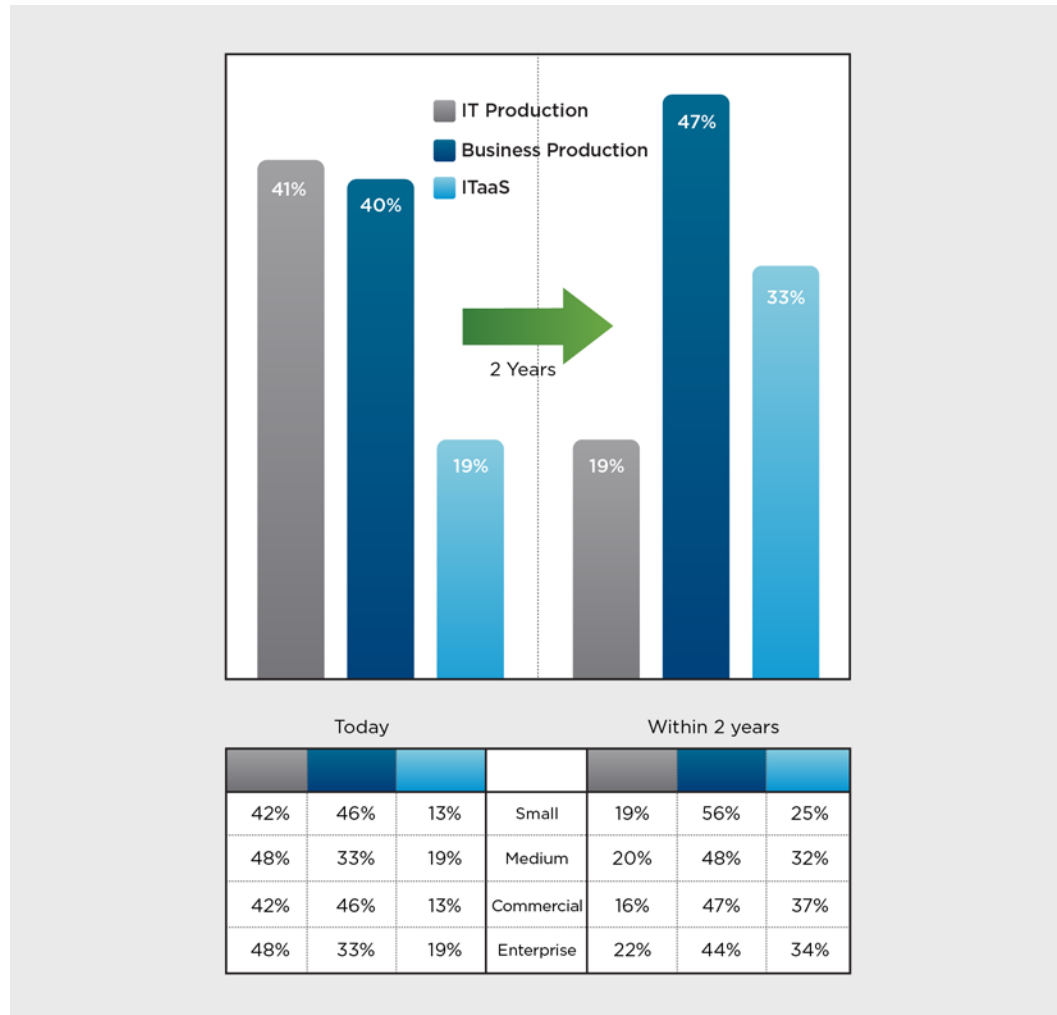


Figure 24: Customers focused on achieving IT-as-a-service phase

Moving Between Journey Stages

While companies are focused on the benefits of moving from the IT Production (phase 1), to Business Production (phase 2) and to IT as a Service (phase 3), they must also deal with some of the factors preventing this move to increased virtualization. Benefits of further virtualization help organizations overcome the barriers preventing stage advancement. Figure 25 shows how the impact of these barriers and benefits changes as organization advance through the Journey phases.

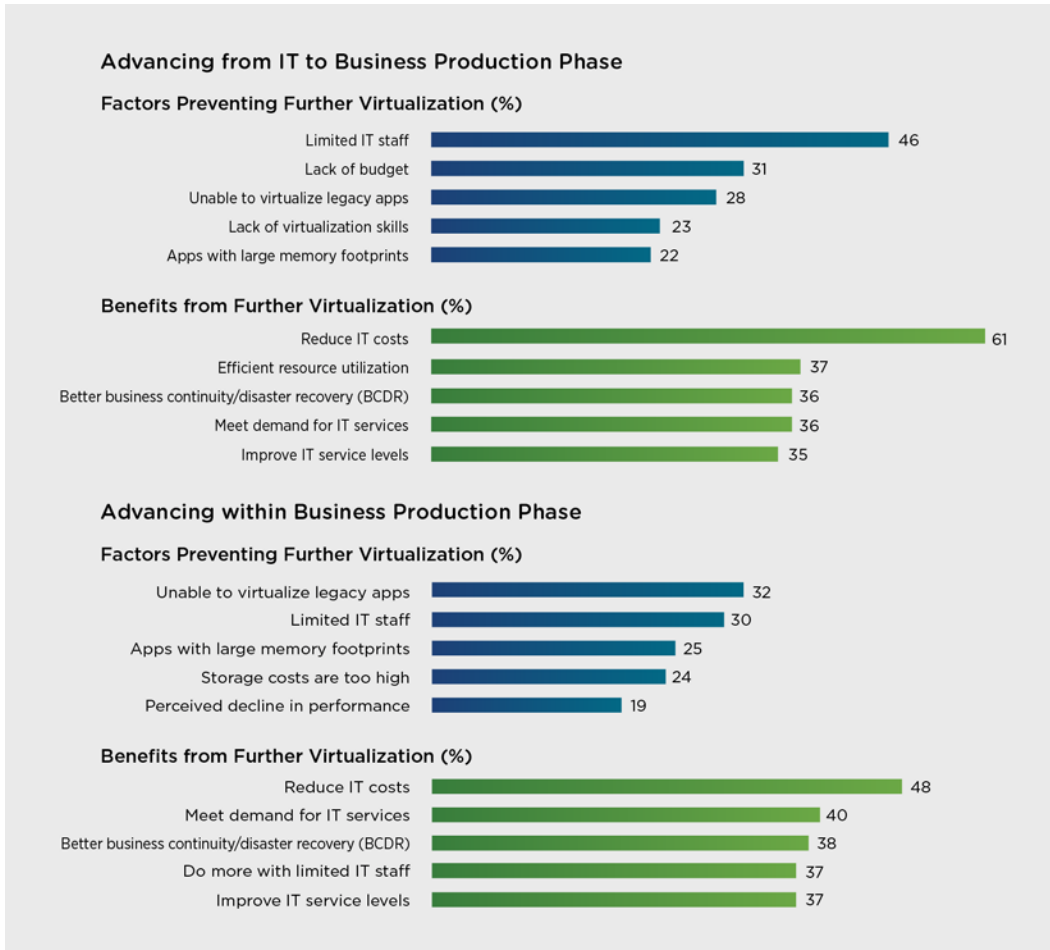


Figure 25: Benefits of further virtualization help organizations overcome factors preventing phase movement

Your Cloud. Your Journey.

To overcome the challenges of delivering competitive IT services, your journey is likely to unfold on three fronts—virtual infrastructure, application modernization and end-user productivity. The VMware Journey is designed to enable you to follow a pragmatic approach to IT as a service, where you can successfully balance trade-offs between cost and agility. The benefits your organization achieves along the way will fund your IT as a service transformation, ensuring that your operating model is permanently transformed.

While a similar progression of adoption stages exists, each customer’s journey transition is customized and each customer’s experience is unique. Through the VMware Journey, organizations can accelerate to IT as a service or use cloud-scale capabilities to amplify existing investment returns. For your organization, the VMware Journey may be the ideal customized, prescriptive value journey leading to the only cloud that matters—your cloud—the right cloud model to match your business needs. The VMware Journey includes three phases with specific adoption criteria, yet each customer journey transition is customized.

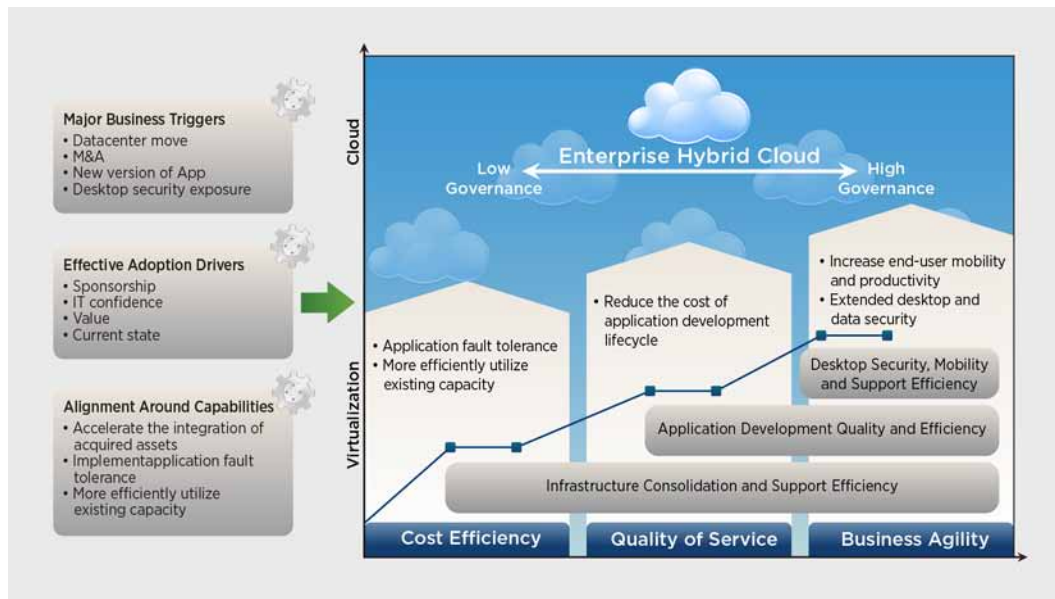


Figure 26: VMware Journey customized by organization

To ensure that your organization is achieving the greatest value, VMware has identified and mapped VMware Journey stages against specific capabilities to value to VMware products. This high-level mapping, together with the more detailed KPIs, is another tool that organizations can use to compare their journey against peers.

Example Value Path

STAGE 1: IT PRODUCTION				
Virtualization Foundation & Operations Efficiencies		CapEx Avoidance & Reduction	VMware vSphere® (DPM, DRS, Hot Add, vStorage, vNetwork), Capacity Planner	Cost Efficiency
		IT Operations Efficiencies		
		Green Savers		
Application Development Cost, Speed & Quality		Storage Reduction & Development Efficiencies	Lab Manager, VMware vCloud® Service Director, SpringSource (tc Server & Build), ThinApp, vCloud Express, Cloud Foundry, vCloud Enterprise	
		Accelerated Time to Market		
		Count & Speed of Development via Public Cloud		
STAGE 2: BUSINESS PRODUCTION				
Protect & Secure Business Operations		Secure Access & Distribution Across Mixed Trust Zones	VMware vShield™ (Zones, Edge, Application Protection, Endpoint), View	Quality of Service
		Business Continuity Improvement	HA, Fault Tolerance, vMotion Storage vMotion, Data Recovery, Site Recovery Manager, Hyperic AppSpeed	
		Lower Cost of High Availability & Disaster Recovery		
		Flexibility & Dependability of Public Cloud	vCloud Express, vCloud Enterprise	
Desktop Management & End-User Productivity		Desktop/Thin Client Management Efficiency	VMware View, ThinApp, Workstation, Player, ACE, Fusion	
		End-User Mobility & Productivity		
STAGE 3: ITAAS				
IT Automation Efficiency & High-Velocity IT Services		Virtualization Management & Virtual Infrastructure Efficiencies	VMware vCenter™ Server, vCenter Configuration Manager, Application Discovery Manager, CapacityIQ	Business Agility
		Accelerated IT Services		
Advanced Cloud Management		Secure, Cheaper & Faster Private Clouds	vCloud Service Director, vShield, Chargeback	
		Flexibility & Speed of Hybrid Clouds	vCloud Express, Cloud Foundry, vCloud Enterprise	

Figure 27: Value path customization tool helps map expected value at each phase of a virtualization initiative

Virtualization, as the foundation for cloud computing, drives IT and business agility. Together, virtualization and the cloud amplify the value your organization receives from its IT investments.

To learn more about VMware and the VMware Journey, visit <http://www.vmware.com/cloud-computing/cloud-journey/overview.html>.

Is Your Organization Ready for Cloud Computing?

VMware invites your organization to complete the VMware Cloud Readiness Self-Assessment to determine how ready you are to adopt virtualization and cloud computing.

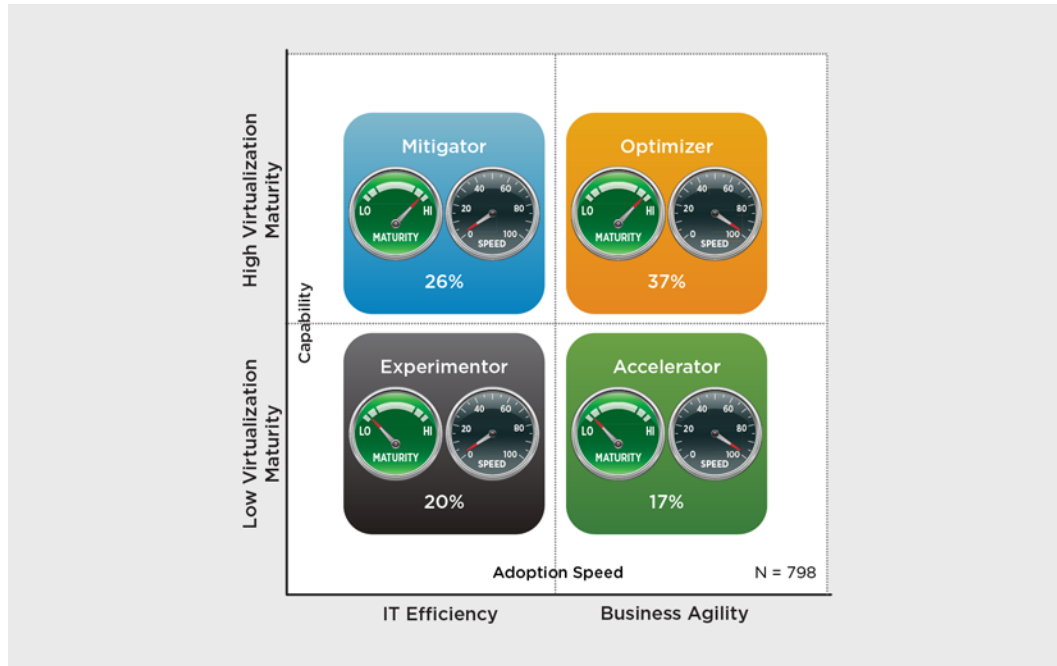


Figure 28: Organizations adopt virtualization and cloud computing at different levels

The VMware online questionnaire facilitates the assessment of your organization's readiness to implement cloud computing and amplify the value you are realizing from VMware virtualization technology. Take the [VMware Cloud Readiness Self-Assessment](#).

1 The data in this report were commissioned by VMware through a primary research instrument and interviews conducted and compiled by Management Insight Technologies. Independent analysis provided by NeoChange, Inc.

