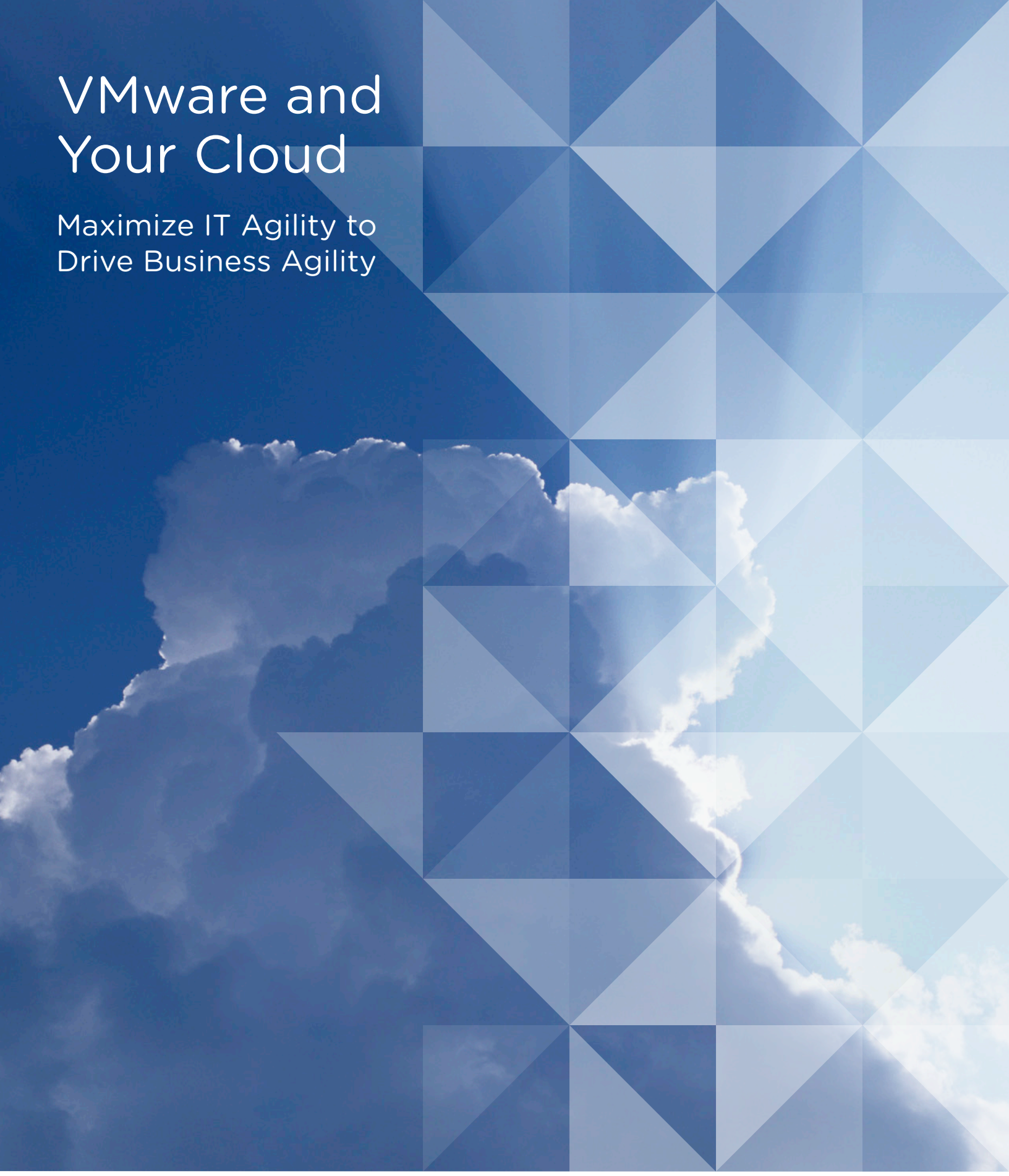
VMware and Your Cloud

Maximize IT Agility to Drive Business Agility



vmware

Shifting Focus to Create Opportunity

In today's technology-driven marketplace, a business can only be as agile as its IT environment. Enterprises must improve IT agility to increase overall business agility. Yet in a typical enterprise, nearly three-quarters of IT resources are spent managing complex and brittle infrastructure. This leaves little time and budget to focus on innovation.

Cloud computing promises a more agile and efficient IT environment. It replaces traditional, costly and inefficient computing silos with elastic, self-managed, dynamic IT infrastructure. It enables IT to intelligently anticipate and respond to business needs. As organizations transform their IT environments, they want to achieve the benefits of cloud computing with a scalable, secure and manageable solution that addresses their unique business challenges.

Virtualization First, Then Your Cloud

As the fundamental technology for cloud computing, virtualization provides the critical first step in IT transformation. Whether you have virtualized all of your workloads or are just starting out, you are laying the foundation for cloud computing, and VMware® can help you build on it.

VMware is the global leader in virtualization and cloud infrastructure. VMware offers an evolutionary approach to cloud computing that enables enterprises to preserve their existing investments. VMware solutions deliver the benefits of cloud computing with the flexibility, security and control your enterprise needs to meet its unique business objectives.

VMware Enables Your Cloud

Working with more than 250,000 customers and 25,000 partners, VMware understands that because every business is different, every cloud should be, too. The VMware approach is not about public, private or hybrid clouds or even "the cloud." It is about your cloud—your enterprise's journey to the right cloud model to match your business needs. Your cloud accelerates IT, which in turn accelerates meaningful results for your business.

Aprimo Incorporated

"VMware makes it incredibly easy to implement a cloud environment and gives us a competitive advantage."

Tim Sublette
Vice President, Software Engineering, Aprimo Incorporated

Business Agility and the Economics of Cloud Computing

With the financial benefits of cloud computing well established, IT leaders are now beginning to realize its business value beyond cost reduction. This has prompted executives to shift their focus to the strategic benefit of cloud computing: business agility. In a newly released business-agility survey, corporate decision makers linked cloud computing directly to business agility.[1]

Moreover, responses from the more than 600 corporate decision makers reveal the following:

- More than 80 percent of respondents agreed that agility is moderately or more than moderately linked to improving corporate revenue, cost and risk profiles, with 66 percent identifying business agility as a priority.
- "Extremely agile" companies reported that IT is one of their top two agile business functions; infrastructure/technology is the primary driver for those with agile IT.
- Cloud computing can make the entire organization more "business-agile" and "responsive," according to 63 percent of business leaders who responded.

Agile Organizations Outperform Their Competitors

What does it mean for a business to be agile? According to McKinsey & Company, agile organizations outperform their competitors in the eight dimensions outlined in Figure 2. Survey responses also indicate that companies that hesitate to embrace cloud computing may actually be hindering faster revenue growth, greater and more lasting cost reduction, and more effective management of risks and reputational threats.

Business-Agility Survey Results

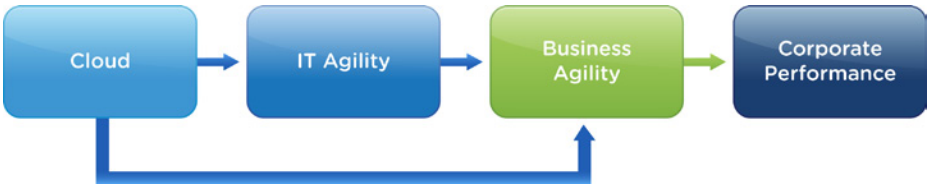


Figure 1: Cloud computing is directly linked to business agility in the AbsolutData Business-Agility Survey.

McKinsey & Company Business Indicators of Agile Organizations

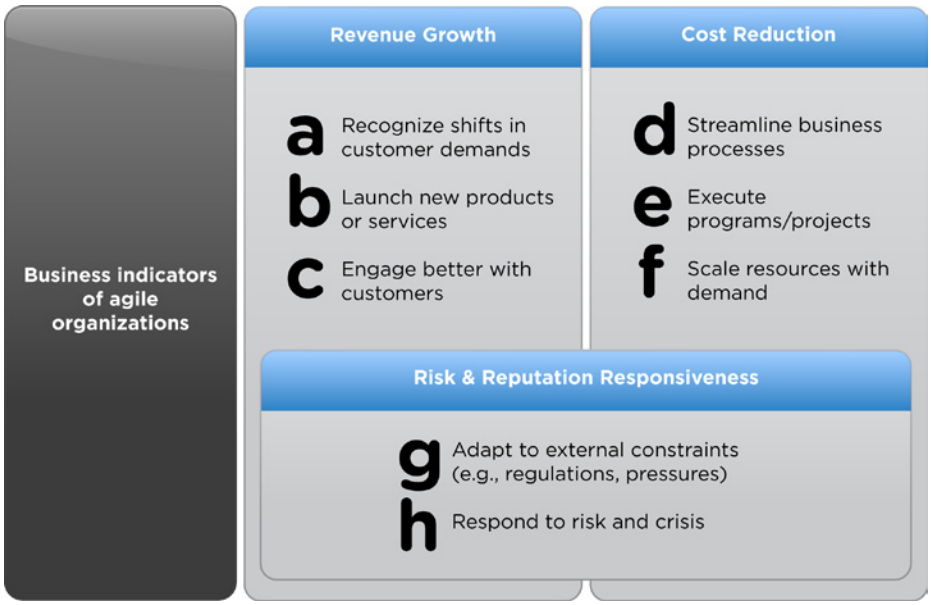


Figure 2: Agile organizations outperform their competitors in eight dimensions associated with revenue growth, cost reduction, and risk and reputation responsiveness.[2]

Technology and IT Enable Agility
In agile organizations, technology/IT is a key enabler. Technology/IT must be able to:

- Identify and adopt impactful innovations.
- Execute projects rapidly for fast deployment.
- Dynamically scale capacity.
- Maintain a flexible architecture to support changes.
- Decommission obsolete systems.

One of the study's primary conclusions is that cloud computing creates a tighter connection between IT transformation and business transformation, driving competitive advantage. In organizations evolving to cloud computing, IT takes on a strategic role contributing to ongoing competitiveness and growth.

Ninety-five percent of IT leaders agree that virtualization is critical to enabling cloud computing.

IDG Research
CIO Global Cloud Computing Adoption Survey. January 2011.

Hybrid Clouds Maximize Business Benefits

As IT leaders consider cloud computing, foremost in their minds are their current IT environments and business requirements. They want to be sure the approach they choose does not require them to start from scratch, ripping and replacing working infrastructure. They want their approach to be flexible and scalable enough to meet their requirements now and into the future, and to be secure. They want to avoid being locked into a particular vendor's solution. Most important, they don't just want any cloud—they want a cloud tailored to their business.

Are You Ready for Cloud Computing?
As your organization thinks about moving to a private, public or hybrid cloud, it is helpful to:

- Analyze your portfolio and prioritize the applications that will benefit most from a cloud approach.
- Virtualize all of the workloads you are targeting for the cloud.
- Define the standard services you want to offer, with associated service levels, and optimize your architecture, infrastructure and organizational policies to support a service consumption model.
- Outline security protocols and compliance requirements.
- Consider how you will manage resources, perform chargeback and handle change management as you move to a cloud model.

Strategic planning in these areas will help you define both the right approach and the right cloud model for your business.

Depending on business needs, each cloud model—public, private and hybrid—has characteristics and benefits that attract organizations. Public clouds are initially attractive because they deliver fast access to new compute resources at low cost, becoming a popular choice for new development projects initiated outside of corporate IT. Public clouds are also popular deployment models for applications with unpredictable or seasonal demand. At the same time, private clouds are typically attractive to corporate IT for providing enterprise-class performance, security, quality of service and the ability to scale the datacenter with business operations. Organizations often deploy a private cloud to run highly regulated applications or those with predictable and constant demand.

Hybrid Clouds Reduce Expenditures and Increase Agility
The ideal cloud model enables you to combine the benefits of both public and private clouds and offers portability between them according to your business requirements. Hybrid clouds provide the best of both worlds: improved IT agility together with enterprise-class software for performance, security and control. They allow you to deliver the right workload in the right environment, at the right cost.

For most enterprises, the hybrid cloud is the most economical model. According to recent VMware and EMC research, hybrid cloud deployment could reduce typical total IT spend by approximately 20–30 percent. This lower IT expenditure comes from virtualization and consolidation, optimized workload sourcing, optimized provisioning, and higher productivity in application development and maintenance.

The hybrid cloud is also the most strategic model. It enables enterprises to deploy applications with the cost structure and service levels they need—and even to adjust them when business requirements change.

Hybrid Clouds Reduce Total IT Spend

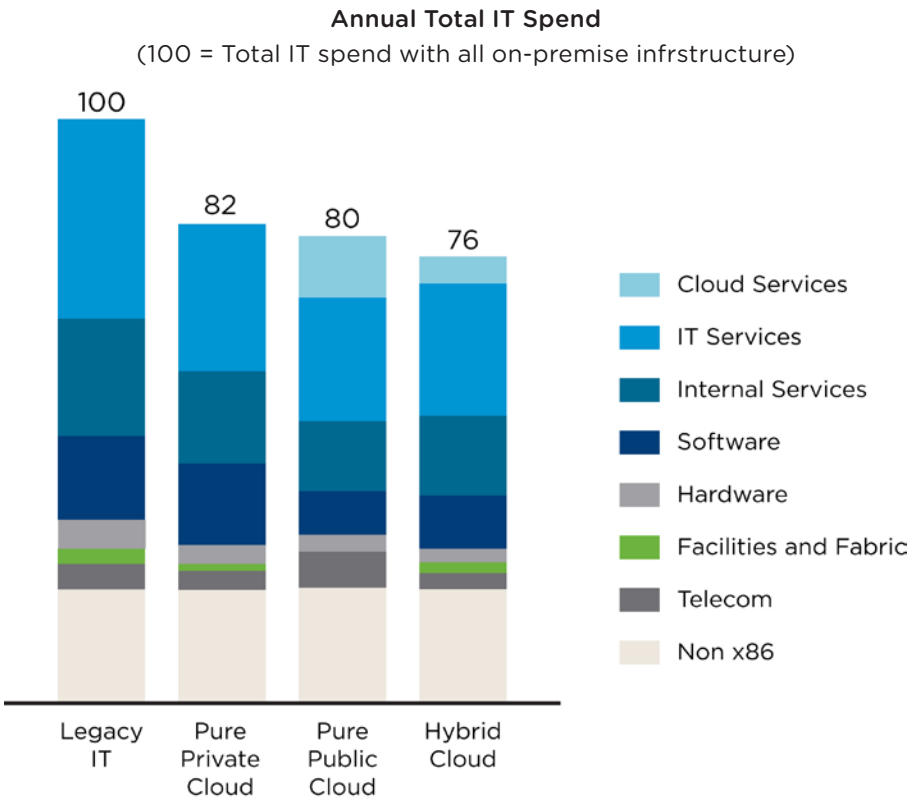


Figure 3: Hybrid cloud is more economical than pure public cloud or pure private cloud models.

LAMCO

Asset management company LAMCO believed implementing a hybrid cloud infrastructure would be the world-class solution it needed to manage revenue, cost and risk as it handled the wind-down of Lehman Brothers Holdings Inc. (LBHI) assets after LBHI's Chapter 11 filing. LAMCO quickly realized that Bluelock, a certified VMware vCloud Datacenter Services provider, offered a scalable, high-performance hybrid cloud infrastructure to accommodate extreme uncertainty. With highly elastic capacity (capable of rapidly scaling up or down), as well as public and private cloud integration for more capacity on demand, the infrastructure and application support LAMCO had planned to span over 8 months was rolled out in just 4. The VMware based hybrid cloud infrastructure provided by Bluelock enabled LAMCO to immediately reduce IT expenses by $1 million each month, outsource support personnel—managing with just three—and use a pay-as-you-grow, operational expense-based procurement model requiring minimal upfront capital. It also helped LAMCO increase transparency, providing the company with the ability to meter and charge-back expenses.

Australian Bureau of Statistics

"We stopped talking in the old way about servers and started talking about allocation of resources to their work; for the same price as what we're paying today, you can have unlimited access. Clients don't even worry about the IT side anymore. It's done for them."

Tony Marion
Director, Infrastructure,
Australian Bureau of Statistics

VMware Solutions Enable the Enterprise Hybrid Cloud

As you transition to your cloud, you need a global technology leader with an ecosystem of qualified solution and service providers that will work with you every step of the way and move forward at your pace.

Only VMware enables the enterprise hybrid cloud, so that you can create and manage the applications and services that you need to run your business most effectively. An enterprise hybrid cloud features high performance, comprehensive security, high availability to deliver exceptional quality of service, interoperability and the ability to scale with business operations. Only VMware provides you with the flexibility and portability to move your applications between clouds without rewriting them—from private clouds to VMware vCloud® enabled public clouds and back.

Whichever cloud option suits your business best, VMware offers solutions based on open standards to build and manage your cloud. VMware also supports a broad community of public vCloud providers to ensure that everything in your cloud works seamlessly and securely. Today, all five of the cloud service providers that Gartner, Inc. placed in the leaders quadrant of its current Magic Quadrant for Cloud Infrastructure as a Service and Web Hosting[3] are partially or wholly based on VMware.

VMware Solutions for Your Cloud

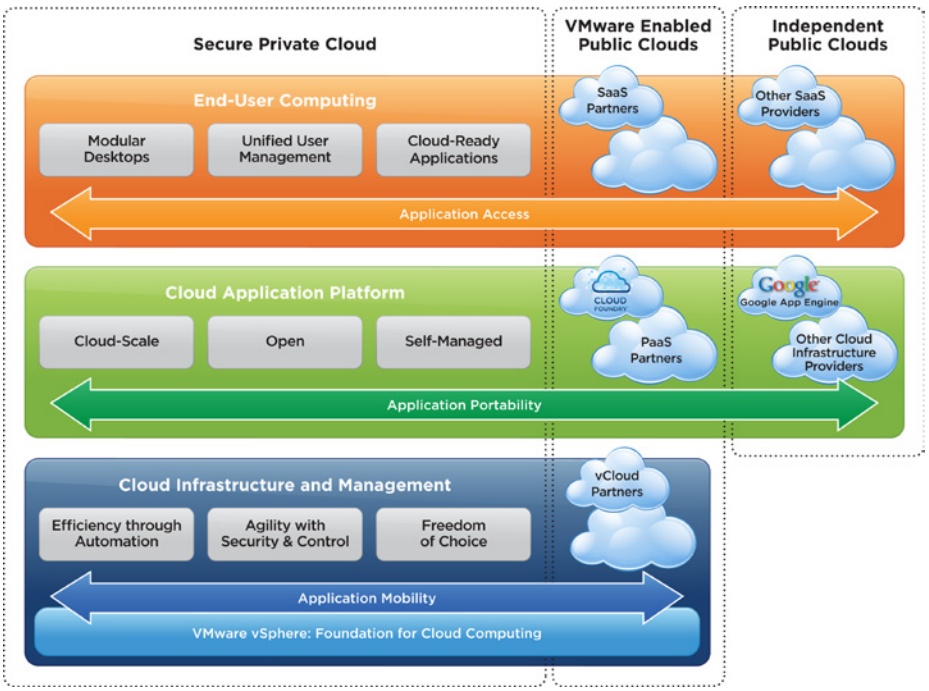


Figure 4: VMware delivers customer-proven cloud infrastructure and management, cloud application platform, and end-user computing solutions.

VMware makes the enterprise hybrid cloud model possible through a complete set of solutions that enables you to create a cohesive strategy for your entire IT stack: cloud infrastructure and management, cloud application platform, and end-user computing.

Cloud Infrastructure and Management Solutions

The key to enabling enterprise hybrid cloud deployment is the standardization of frameworks and infrastructure across the public and private cloud, including:

- A common platform
- Common management
- Common security

Customer-proven VMware cloud infrastructure and management solutions provide standardization for delivering Infrastructure as a Service (IaaS) to increase IT agility. VMware solutions deliver intelligent virtual infrastructure, the foundation for your cloud. Intelligent virtual infrastructure is highly adaptive and can sense and respond to changing business needs. It revolutionizes the traditional paradigm of IT management from "alert and respond" to "respond and alert." This built-in intelligence, along with an analytical approach to monitoring and managing resources, enables IT organizations to automate most manual tasks in dynamic, virtualized and cloud environments.

VMware cloud infrastructure and management solutions include common frameworks and infrastructure that deliver application and data portability, accessibility and security. They also extend to a large ecosystem of more than 3,500 service providers to ensure manageability and interoperability across clouds. VMware solutions are based on open standards, including the Open Virtualization Format (OVF), which has been adopted as an American National Standards Institute (ANSI) standard.

To enable you to successfully deliver IaaS, VMware offers products that support the journey to your cloud. VMware vSphere®, which transforms your IT environment into intelligent virtual infrastructure, is the most widely deployed foundation for cloud computing. vSphere, together with the VMware vCenter™ family of products, provides you with a zero-touch, compliant infrastructure with built-in automation and policy-driven control to manage cloud resources and service consumption.

With VMware vShield™, you can effectively protect your dynamic cloud environment with adaptive security by using a unified security framework, minimizing risk and cost. At the same time, vCloud service provider partners ensure application portability across clouds, while vCloud solutions deliver standardized IT services on shared infrastructure—as multitenant virtual datacenters—through a Web-based catalog. These standardized services enable your IT team to deliver on the promise of IT as a Service while simplifying IT management and eliminating administrative maintenance. In addition, vCloud service providers, which have built their services on VMware solutions, enable portability across clouds so that you can make decisions based on your business needs, not your technology needs.

Colt

"We chose VMware vCloud Datacenter Service because it allows us to deliver the flexibility and speed to market that our enterprise customers require in a rapidly changing business environment. Colt's VMware vCloud Datacenter Service delivers enterprise-class cloud computing services, backed up with end-to-end service level agreements (SLAs)."

Simon Walsh
Executive Vice President,
Colt

TOP 10 REASONS TO CHOOSE A vCLOUD DATACENTER SERVICE

1. No application rewrites when migrating between clouds
2. Security transparency for audit and compliance
3. Role-based access controls
4. Advanced application security with Layer 2 virtual networks
5. Choice of pay-for-use and guaranteed dedicated infrastructure for rapid scaling
6. Interoperability and portability with common infrastructure for public and private clouds
7. High-performance assurance with predictable availability and scale
8. Multitenancy and dedicated infrastructure mix choice for cost advantages and performance
9. Global consistency and local delivery from a large ecosystem of providers
10. Certified by VMware to ensure quality and consistency

Your enterprise can trust intelligent virtual infrastructure built on VMware solutions to:

- Run business-critical applications with confidence by eliminating downtime and reducing total cost of ownership (TCO).
- Deliver high-quality service and reduce operational expense with built-in intelligence and automation.
- Increase agility without compromise by providing a flexible architecture to build an enterprise hybrid cloud.

Cloud Application Platform Solutions
Modern applications are increasingly Web-oriented, dynamic, data-intensive and built to run on virtualized infrastructure. Ideally suited to the needs of these applications, the VMware vFabric™ Cloud Application Platform is the best way to build, run and scale modern applications whether you deploy them onsite or offsite.

The vFabric platform delivers the highest application performance, quality of service and resource utilization by intelligently leveraging the underlying infrastructure. It also enables enterprises to extend existing investments and expertise to incorporate new consumer application paradigms, including social networking, mobile access and collaboration. When developers leverage the popular vFabric frameworks and tools, including Spring—a core component of the platform used by more than three million developers worldwide—they increase the velocity of application development and deployment, which enables IT innovation. They modernize the applications they use today and build the ones they will need tomorrow.

With comprehensive application management solutions from VMware, IT teams quickly, accurately and confidently virtualize and move applications to the cloud. They dynamically map application dependencies

VMware Enables the Enterprise Hybrid Cloud

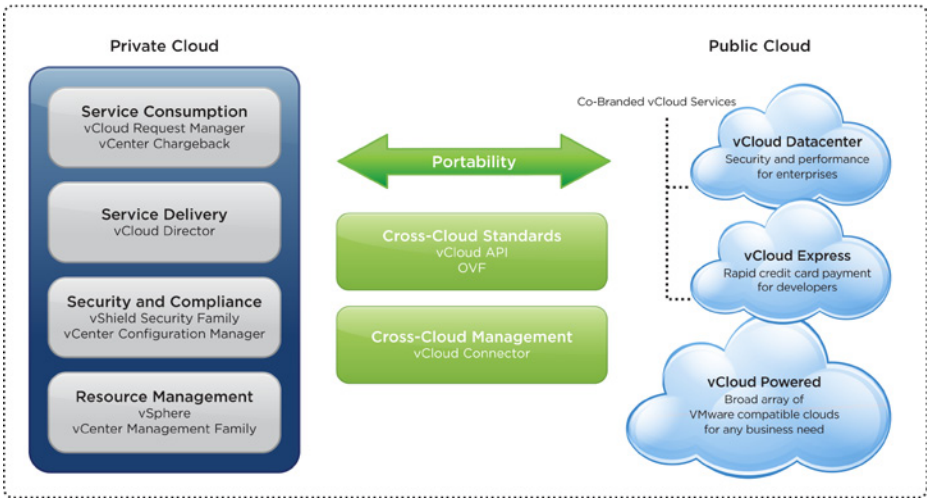


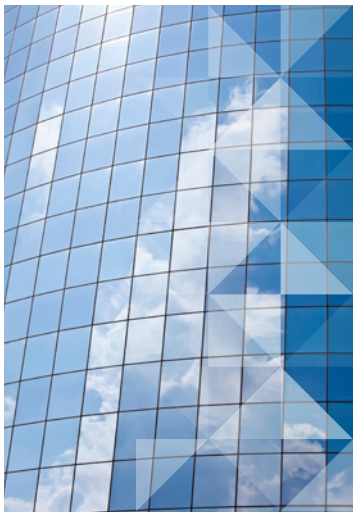
Figure 5: VMware solutions are based on open standards to ensure interoperability and portability across cloud infrastructures.

across the datacenter, monitor and ensure application transactions and performance, and encapsulate applications to deliver portability and mobility.

To provide development organizations with even greater choice, VMware offers Cloud Foundry, the industry's first open Platform as a Service (PaaS). Cloud Foundry represents a new generation of application platform, architected specifically for cloud environments and delivered as a service. The perfect complement to internal vFabric deployments, Cloud Foundry significantly enhances developers' ability to deploy, run and scale applications while embracing the widest choice of public and private clouds; industry-standard, high-productivity developer frameworks; and application infrastructure services.

Your enterprise can use the VMware cloud application platform to:

- Build modern, Web-oriented applications in less than half the time of traditional approaches.
- Deliver cloud-ready applications that are optimized to run on virtual infrastructure.
- Enhance application portability between public and private clouds.
- Overcome relational database bottlenecks and enable real-time data.
- Increase the reliability, availability and scalability of applications.



VMware Supports Freedom of Choice

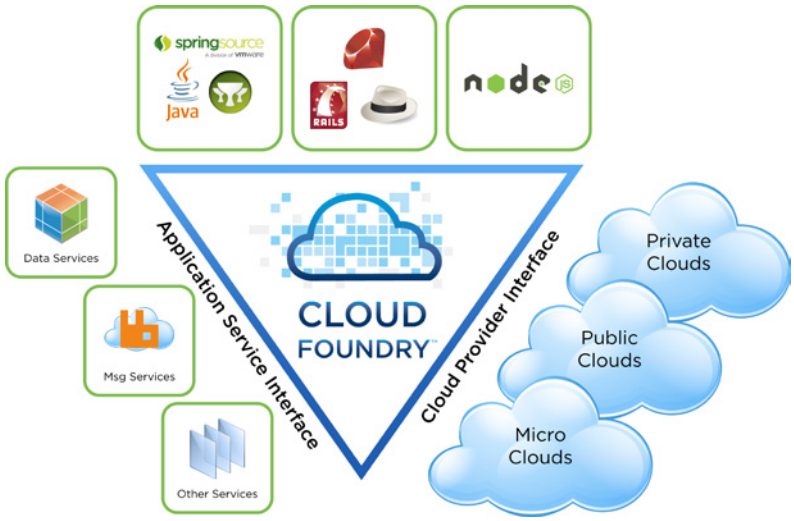


Figure 6: Cloud Foundry is the industry's first open PaaS.

Graydon, Head and Ritchey LLP

"By using VMware View, we can not only save management time but also have much better control over the user experience. We'll be able to support old legacy apps such as WordPerfect and older versions of Windows that are needed for specialized applications. In addition, we can provide better security for the entire environment."

Robert Gunyon
IT Manager,
Graydon, Head and Ritchey LLP

End-User Computing Solutions
Business happens everywhere. Today's end users expect and require access to their data and applications from multiple devices, anywhere. Securely meeting these needs in a timely manner with existing resources is precisely what VMware delivers.

VMware end-user computing solutions enable enterprises to deliver desktops as a service. With VMware View™, IT leaders can quickly and securely provision and deploy customized virtual desktops, applications and data to users across a variety of devices, platforms and locations. Adding VMware management solutions, IT teams can also manage workstation images and deliver virtualized applications. VMware solutions make it easy for end users to securely access their enterprise, Software-as-a-Service (SaaS) and Web applications.

VMware virtualized application suites, such as VMware Zimbra®, include messaging, email, calendaring and collaboration capabilities that can be deployed and managed across clouds. VMware solutions provide end-user freedom while enabling IT to retain control and visibility, as well as ensure compliance.

Your organization can confidently deploy VMware end-user computing solutions to:

- Provide enterprise users with secure and flexible access to applications and data anytime, anywhere.
- Reduce the cost and complexity of desktop management.
- Shift users from traditional email to next-generation email and collaboration software.

Comprehensive Security
Security is the most significant perceived obstacle to cloud adoption. According to an IDG Research survey, 85 percent of enterprises would adopt more cloud computing if security were equal to or better than their current environment.[4] Through virtualization and a single framework, VMware provides comprehensive security for the enterprise hybrid cloud.

Virtual infrastructure is inherently more secure and stable than traditional physical infrastructure because it reduces the attack profile of your business, and it is easier to isolate security breaches and contaminated infrastructure. VMware provides a single comprehensive framework for securing virtual datacenters and cloud environments at all levels—host, network, application, data and endpoint. With VMware solutions, you can centralize security across the virtual datacenter, secure the edge of the virtual datacenter, protect applications from network-based threats, and offload antivirus and anti-malware processing for endpoints. In addition, VMware and RSA, the security division of EMC, together deliver the highest standard of trust in the cloud—providing greater control and visibility.

Journey to Your Cloud

VMware understands that every organization approaches IT transformation with its own set of challenges and objectives. The VMware Journey starts with virtualization and culminates in IT as a Service, increasing business agility at every stage. The Journey helps your organization achieve a cloud model that is uniquely yours—a private, public or hybrid environment precisely aligned with your individual business goals.

The power of the VMware approach is that it ensures flexibility and interoperability for your cloud. As your enterprise moves through the Journey phases—from IT Production to Business Production to IT as a Service—you can move selected workloads to your datacenter cloud or to one of the many vCloud enabled public clouds.

Many enterprises begin their journey to a cloud deployment model with preproduction applications, including development and testing applications, and noncritical workloads such as email and collaboration. Success with these applications gives IT organizations the confidence to virtualize and move business-critical applications to the cloud. With the addition of key IT as a Service capabilities, including self-service, chargeback and service definition, enterprises leverage the cloud more strategically. When enterprises are able to deploy workloads in the best environment for their business needs, they increase IT agility without compromising security, reliability or governance.

VMware Journey to Your Cloud

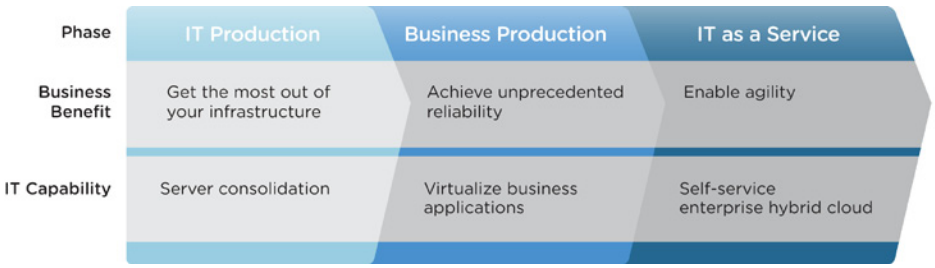


Figure 7: The VMware Journey is a proven, three-phase implementation roadmap to IT as a Service for organizations moving to a cloud computing approach.

Qualcomm

"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

Build Your Cloud with VMware

The experienced VMware team works with a large ecosystem of partners to help you make the most effective changes to your IT environment, processes and operations. VMware, together with leading systems integrators and public cloud service providers, builds and harvests the intellectual property and services required for the journey to your cloud.

VMware Global Services and Support, including consulting, account management, training, certification and technical support, accelerates your return on virtualization and cloud infrastructure investments while mitigating risk. VMware Professional Services provides industry-leading expertise to help you architect, design and validate your cloud strategy. The team also assists with your IT infrastructure by integrating cloud capabilities and providing tailored knowledge transfer.

To meet the needs of organizations—large and small, global and regional—VMware offers the following services:

- **VMware Consulting Services**
  In-depth virtualization and cloud computing expertise to deliver an operational cloud environment using proven, repeatable delivery methodologies that speed the business value of cloud computing
- **VMware Education Services**
  Industry-leading technical training and certification programs that build cloud computing knowledge and expertise in your IT organization
- **VMware Support Services**
  Knowledgeable support professionals and extensive self-help resources that facilitate customer and partner success with VMware virtualization and cloud infrastructure solutions

GET STARTED WITH VMWARE SERVICES

VMware vCloud Jumpstart services give you a "hands-on" opportunity, guided by VMware experts, to experience the vCloud environment by installing it in a nonproduction environment.

VMware vCloud Accelerator services deliver an operational vCloud environment in 30 days or fewer, running your selected customer applications and laying the foundation for a larger cloud deployment.

VMware vCloud Plan and Design services help you plot a pragmatic path to the cloud by providing a comprehensive architectural design for a vCloud solution that meets your business requirements and operational demands.

Team with VMware to Increase IT Agility

VMware is committed to dramatically reducing IT complexity. With industry-leading solutions, VMware has transformed IT for more than 250,000 customers worldwide. By delivering secure interoperability between clouds, VMware brings you all of the benefits of an enterprise hybrid cloud approach. By providing an evolutionary path to cloud computing based on the most widely used virtualization platform, VMware delivers the only cloud that matters—your cloud.

Start Today by Understanding Your Cloud Readiness
A high-impact transformation to the cloud comes with the need to ensure that your organization is ready to support it. VMware helps you determine how ready your organization is today by assessing your strengths and challenges in the following areas:

- **Strategy**
  Does your cloud strategy align business needs and goals with IT capabilities?
- **Process**
  Are your processes streamlined and automated to support cloud computing?
- **Architecture**
  What should you be aware of when architecting infrastructure for your cloud?
- **Technology**
  How do you design and deploy technology infrastructure from virtualization to cloud?
- **People and Governance**
  Is your staff skilled and trained to support cloud adoption in your organization? What is needed to ensure accountability and policy follow-through for stakeholder collaboration?

Receive Immediate Feedback
After you complete the assessment, VMware will send you a personalized report. It will include information about your current cloud readiness and how it compares with that of your peers. It will also include recommendations and next steps based on VMware best practices. To begin, visit http://www.vmware.com/go/getcloudready.

Your Cloud.
Accelerate IT.
Accelerate Your Business.

1 AbsolutData. "Business-Agility Survey." February 2011.

2 McKinsey & Company's Business Agility Framework. 2011.

3 Gartner. Inc. "Magic Quadrant for Cloud Infrastructure as a Service and Web Hosting." Lydia Leong and Ted Chamberlin, December 2010.

4 IDG Research. "CIO Global Cloud Computing Adoption Survey." January 2011.

WHY VMWARE?

Your Cloud
Deploy the right cloud model for your business needs.

Customer-Proven Solutions
More than 250,000 customers worldwide trust VMware solutions.

Evolutionary Approach
Leverage existing IT resources while moving your business forward.

Interoperability
Move workloads seamlessly between private and public clouds and gain all of the benefits of the enterprise hybrid cloud.

Open Standards
Solutions based on open standards for flexibility and freedom of choice.

Large Ecosystem
More than 25,000 technology partners and 3,500 cloud service providers to meet your business needs.

VMware, Inc. 3401 Hillview Avenue Palo Alto CA 94304 USA Tel 877-486-9273 Fax 650-427-5001 www.vmware.com

Copyright © 2011 VMware, Inc. All rights reserved. This product is protected by U.S. and international copyright and intellectual property laws. VMware products are covered by one or more patents listed at http://www.vmware.com/go/patents. VMware is a registered trademark or trademark of VMware, Inc. in the United States and/or other jurisdictions. All other marks and names mentioned herein may be trademarks of their respective companies. Item No: VMW-BRO-CLOUD-2-USLET-101