When information comes together, it's a good sign for your business.
About EMC Corporation

EMC is the world's leading developer and provider of information infrastructure technology and solutions that enable organizations of all sizes to transform the way they compete and create value from their information. VMware®, an EMC® company, is the global leader in virtualization software for industry-standard desktops and servers.

About Information

The amount of information in the world today, most of it in digital form, staggers the imagination. According to a newly published IDC white paper, sponsored by EMC, “the digital universe in 2006 could be likened to 12 stacks of books extending from the earth to the sun.” And by the end of this decade, this “universe” is expected to expand to six times its current size.

In part, the relentless growth is a reflection of information’s increasing importance. Managed properly, information can serve as the glue holding organizations together, the antidote to uncertainty, and the raw material from which new products and services can be developed.

To put information to work, to make it perform, organizations and individuals need to be able to store, protect, optimize, and leverage that information. There is great value in being able to share information, access it 24x7, correlate it with other information, retrieve relevant pieces quickly, apply it to decision-making, and secure it against unauthorized use.

The most effective way to manage information as a strategic asset is by using an information infrastructure—a shared set of products, services, and best practices for storing, protecting, optimizing, and leveraging information. With an information infrastructure, people can avoid the potentially serious risks and reduce the significant costs associated with managing information, while fully exploiting its value for business advantage. Information infrastructure is fast becoming the new and versatile foundation on which organizations can implement their information lifecycle management (ILM) strategies, secure their critical assets, leverage their content for competitive advantage, automate their data center operations, and much more.
# Table of Contents

**The Rise of the Informationist**
Raymond Cline
Vice President, Infrastructure Portfolio Development
EDS Corporation

Eric Yablonka
Vice President and Chief Information Officer
The University of Chicago Hospitals and Health System

## Information Infrastructure

### Store

- Vodacom
- Canadian Light Source Inc.
- Tellas Telecommunications Company
- Fluxys
- GoSoft Co., Ltd.

### Protect

- Toshiba I.S. Corporation
- Kimberly-Clark Corporation
- Fuji Heavy Industries Ltd.
- EDS
- CLSA
- Shinhan Bank

### Optimize

- Munich Airport International
- Belgian Federal Treasury
- Vail Resorts
- Eastern Asia Commercial Bank

### Leverage

- DaimlerChrysler
- Boston Red Sox
- Daum Communications Corporation
- Informatel
- PETCO
- Bank Internasional Indonesia

**VMware**

- Radiator Express Warehouse
- Johnson Controls, Inc.
- Société de transport de Montréal
- Merrill Lynch
- QUALCOMM
- Princeton Softech
- Business Objects

**The Relentless Growth of Digital Information**

**Industry Recognition for EMC Innovation**

**A Culture that Puts Customers First**

The Total Customer Experience
EMC’s Commitment to Diversity and Inclusion
Within a growing number of organizations, a new view of the relationship between information and information technology (IT) is emerging. Historically, the IT profession has focused much, if not most, of its attention on the “T” in IT—the technology. This is understandable in light of the explosion of new and powerful technologies, the proliferation of networked communications, and the challenges of managing increasingly complex IT environments.

What is changing is the recognition that while technologies and people may come and go, information persists and forms the permanent strategic core of an organization.

In response, thoughtful IT professionals are stepping back and asking: Who is responsible for my organization’s information portfolio? Who is paying attention to the information’s changing requirements and changing value as it moves through its lifecycle? Who is stepping up to take on the important role of protector, manager, and optimizer of my business’s core asset, its information?

The answer: This position is begging to be filled. EMC calls the emerging role an “informationist.”

In EMC’s view, an informationist manages an ever-increasing amount of information in a way that meets the business’s shifting requirements, while keeping overall technology and operational costs to a minimum. An informationist understands the risks associated with different kinds of information and manages information in a way that minimizes or eliminates the risks of losing it, of not having it available on demand, or of having it fall into the wrong hands. Above all, an informationist understands the value of information in a business context, finds new ways to tap into information’s often hidden value, and enables new uses for existing information—all to serve customers better and drive growth.

In the pages that follow, EMC talks with two prominent IT professionals who are managing their information holistically and employing an information infrastructure to leverage the value of their information.

IDC predicts that by 2010, while nearly 70 percent of the digital universe will be created by individuals, organizations will be responsible for the security, privacy, reliability, and compliance of at least 85 percent of the digital universe.

EDS is a leading global technology services company delivering business solutions to its clients. A member of the EDS Agility Alliance, EMC is the preferred partner for information lifecycle management solutions.

Can you describe the overall importance of information to EDS?

Information is the lifeblood of every major enterprise. As a service provider to a number of large enterprises, we’re responsible not only for EDS’s own information, but also for managing information on behalf of EDS clients. Disruption in the information flow, or in access to critical information, really stops the business. So, as we look at the services we provide to our clients—storing and manipulating information to extract valuable content from it—enabling access to information is one of the most important things we do.

How has your information portfolio changed over the years?

What we’ve seen over the last few years is a transition from a concentration on the storage and availability of information to a broader focus on the full lifecycle management of information. This stems from our clients’ much increased understanding of regulatory compliance, security, privacy, business continuity, business disaster recovery, and a host of other information management challenges.

What are the keys to using information effectively?

One of the big challenges in the information realm is unstructured data—for example, the reports that are generated by subject matter experts, or the analysis that’s done, tend to be more distributed. For most companies, staying competitive means finding ways to get value out of not only their centralized, structured data, but also their decentralized, unstructured data. Put another way, the authoritative source for valuable information is no longer to be found only in a database. Just as much, if not more, value can be found in unstructured information.

What are you doing with your information to create more value?

We are augmenting our historical “custodial” view of information—ensuring that the information for the enterprise is available 24x7—with increasing attention to finding ways to extract value from that information. And that augmentation requires viewing information and infrastructure in a new light. Information in and of itself, separate from an application, now has distinct value for enterprises. When you look at information in this new way, it also changes the way you view infrastructure. Of course, there’s still the value proposition around applications and the data associated with them, but there’s now an additional and independent value proposition associated with all kinds of information access, like enabling your clients to have visibility into key parts of your own corporate data. Enabling this value proposition advancement means thinking seriously about information infrastructure, which is the means to exposing that information properly, exploiting it, and sharing it.

What role can information infrastructure play?

I believe the perceived value of an information infrastructure is increasing and is becoming a capability that our clients are beginning to look for. I think the value proposition of an information infrastructure will increase over time and become recognized as a beneficial independent entity in and of itself.
Can you describe the importance of information to your organization?

Healthcare, especially in a hospital setting, is driven by information and its management to enable safer, more cost-effective patient care with better outcomes. The delivery of clinical services is dependent on information. We need this information for patient care, research, and education. It all comes down to our ability to capture, deliver, and manage this information.

How has your information portfolio changed over the years?

Years ago, our information portfolio consisted mostly of billing and collections information. Today, we have end-to-end computing applications—more than 130 applications and over 240 terabytes of stored information generated from both the care and the business processes. We have applications clustered around clinical systems as well as digital imaging, ERP, billing and revenue cycles, and enterprise content management.

What are you doing with your information to create more value?

We’ve seen the biggest advances in digital imaging and in clinical systems, where minute-to-minute transactions and care processing are now captured electronically to enable workflow.

We recently installed a picture archiving and communications (digital radiology) system that has changed how our clinicians use images and helped them gain greater insights into patients’ conditions. They now treat images not simply as hard-copy negatives, but as information that is part of a larger and more unified patient record.

On the clinical side, we’re on our way to capturing every order, every test result, and every transaction digitally. Patients’ lives can depend on timely information—so every minute of every day, on every floor, and for every bed of a hospital, you have to ensure the availability of these systems and this data to treat patients effectively. At the same time, given that we are an academic medical center, we are leveraging all of these transactions to conduct research and to educate the next generation of physicians.

What are the keys to using information effectively?

We engage our users when designing and developing systems because, ultimately, we have to manage information to their requirements. Having our clinicians help us understand how they’re going to use information allows us to build systems for long-term storage of different kinds of information requiring different levels of performance and recoverability—and to do all of this cost-effectively.

In 2006, the amount of digital information created, captured, and replicated was 161 billion gigabytes. This is about three million times the information in all the books ever written.

What technologies, policies, and best practices promote the effective and efficient use of information?

When we implemented our first storage area network (SAN), it totally changed the way we managed our data. The SAN allows us different opportunities—whether it’s backing up to disk for performance or leveraging our two data centers, which are 35 miles apart. Our information infrastructure enabled our business continuity and disaster recovery process to work well because we have new backup and tape storage systems, and our data is managed much more systematically than it was on a server-by-server basis.

And as we looked at how our organization deals with paper, we realized document management technology is very important. Not all patient information gets captured electronically—not every piece of supporting data for billing cycles and revenue cycles is electronic. The ability to aggregate electronic and image data is critical, as is the ability to integrate that data with our other applications from a workflow perspective.

What role does an information infrastructure play?

We’re all about ensuring the safety of our patients and providing the highest quality of care. Our information infrastructure supports three missions—patient care, research, and education. For an information infrastructure to work, you need to adopt best practices and product sets to enable workflow. Getting the benefit of an information infrastructure goes beyond information technology to enterprise change management.

Remember, our physicians and nurses have been practicing a certain way for years. So when we offer new tools that can help them remember a thousand-plus formularies or access radiology images in their homes when they’re called off-hours to consult on a patient—they have all of the information at their fingertips. This represents a real change in how they make decisions and practice medicine. And that’s ultimately what we want for all of our patients—better outcomes, safer care, and a great overall care experience.
Information infrastructure is a shared set of products, services, and best practices for storing, protecting, optimizing, and leveraging information so that people can avoid the potentially serious risks and reduce the significant costs associated with managing information, while fully exploiting its value for business advantage.

A well-designed information infrastructure will help you:

**Store information intelligently**

**Benefit:** Store information at the right service level and at the right cost so you can meet your business requirements at the lowest overall cost.
Protect information against loss and misuse

**Benefit:** Ensure 24x7 access to information while minimizing cost; protect sensitive information wherever it goes.

Optimize how you manage your infrastructure, information, and service levels

**Benefit:** Mitigate risks and reduce storage costs; improve utilization of servers and storage arrays; increase overall flexibility of your IT environment; achieve better service-level delivery in distributed environments.

Leverage information assets in new ways

**Benefit:** Unlock the value of your information and put it to work in new ways.

The information added to the digital universe in 2010 will be six times larger than its size was in 2006, or 988 billion gigabytes.  
*Source: IDC, The Expanding Digital Universe white paper, sponsored by EMC, March 2007*
Vodacom (South Africa)
The leading provider of cellular communications in South Africa with more than 21 million subscribers

“Vodacom’s investment in EMC information storage technology has helped the company deliver a high and continuous level of support to facilitate optimized operations and unequaled customer service, despite Vodacom’s fast-paced growth. We’re connecting in excess of 500,000 new subscribers a month and constantly developing new products and services. Information lifecycle management is not simply a consideration but a necessity for managing this growth and the associated costs. We believe that EMC has the best ILM vision and ability to implement it. EMC also understands what it takes to deal with large volumes of information along with the requirements for high availability and data integrity in this type of environment. In terms of pure storage consolidation, the deployment of EMC solutions has resulted in higher storage capacity utilization rates, easier management of the storage environment, and the flexibility to adjust capacity as needed. We see EMC information storage technology as a key enabler in our company’s efforts to quickly develop, release, and support new products and services. EMC listens to its customers, giving them the opportunity to direct the development of EMC’s future products.”

Derek Morgan, Managing Executive, Billing Systems Group

Canadian Light Source Inc. (Canada)
A research facility housing Canada’s first synchrotron, which produces a source of brilliant light that enables scientists to “see” at an atomic level

“Now that we are a 24-hour operation, it is imperative that we provide researchers—who may spend thousands of dollars and come from around the world to perform experiments—with the confidence that their data is safely stored and continuously available. The ease with which EMC storage can be managed and seamlessly scaled makes it ideal for this type of environment.”

Christopher Angel, IT Analyst

IDC estimates that today, 20 percent of the digital universe is subject to compliance rules and standards, and about 30 percent is potentially subject to security applications.

Tellas Telecommunications Company (Greece)
The leading alternative telecommunications operator in Greece, providing services such as fixed telephony, Internet access, and broadband

“Our company’s growth resulted in a critical need to improve the storage and management of our information. To address these requirements, we approached EMC, our long-time storage solutions provider, to help us introduce more storage tiers for different data requirements, maintain near-online data access for archives, and enable centralized management—all at the lowest possible cost. By using a tiered EMC information infrastructure as part of our overall information lifecycle management strategy, we can now effectively transfer and manage our aging data on less-expensive storage, and as a result, preserve tier-one storage resources. EMC solutions have helped us match the right type of data to the right price point of storage. We value EMC’s contributions in making our implementations successful.”

Yiannis Theodorakos, Architecture and Operations Manager, IT Division

Fluxys (Belgium)
Belgium-based market leader in the field of natural gas transport in Europe

“We didn’t need convincing about the quality of EMC’s products. We believe it is in our best interest to work with the same partners for network, protection, and storage. It was also important for us that the migration of data from the old to the new SAN was completely under control. And it was. There were almost no hitches. With support from ICT partner Dimension Data, we installed a high-availability, low-maintenance storage network based on EMC products. Today, our EMC SAN easily accommodates the data storage of 60 servers, which translates into a capacity of about 25 terabytes in all. We also rely on an EMC online archiving solution for business-critical data. It creates a unique fingerprint of each document that allows for fast and easy access, yet preserves it in an unalterable form that cannot be deleted until we decide to delete it. These features are especially important because we store all correspondence with contractors regarding the location of pipelines. In the case of a dispute, the certificate guarantees that the correspondence was not changed.”

Dirk Serruys, IT Operations Manager

GoSoft Co., Ltd. (Thailand)
A subsidiary of C.P. 7-Eleven, and one of Thailand’s leading information technology consulting and development companies

“Because C.P. 7-Eleven’s stores are open for business 24x7, its IT systems must be continuously available to support operations. To meet this need and consolidate the organization’s information for improved cost efficiencies and enhanced time-to-market metrics, we chose an EMC information storage infrastructure. The key reasons for selecting the EMC solution include EMC’s leading technology, worldwide reputation, and strong proven track record. EMC also provides the extensive interoperability and integration expertise to keep our multi-platform environment operating efficiently, regardless of our multi-vendor environment. The EMC solution’s many benefits and outstanding scalability address key challenges to provide faster application performance, better system availability, and increased storage capacity, with prompt client support and delivery of efficient service by EMC’s partners.”

Khun Suree Namsriripongpan, General Manager
**Toshiba I.S. Corporation (Japan)**
Builds and operates information systems for Toshiba Group

“We have adopted an EMC solution for an enterprise-wide consolidated storage platform and have built a remote disaster recovery infrastructure to ensure business continuity. EMC provides us with essential parts of our infrastructure for us to store and protect mission-critical data.”

Junichi Koyanagi, President

**Kimberly-Clark Corporation (U.S.)**
A leading global health and hygiene company

“With the assistance of EMC, our new business continuity solution has dramatically improved protection of our critical SAP application data. In the event of a data center outage, we’ve shrunk our recovery time from up to four days to a few hours without any data loss exposure. Because our data protection is more automated and reliable, we’ve realized significant savings in tape media expense and staff time that used to be required to manage our former tape backup process.”

John DeBoth, Manager, Storage and Recovery Services

**Fuji Heavy Industries Ltd. (Japan)**
A global manufacturer of transportation and aerospace equipment and the maker of Subaru automobiles

“We recognized EMC’s superior reliability and cost performance back in the golden age of mainframes, and we have relied on their information storage solutions to support our mission-critical systems ever since. As IT systems have transformed open systems today, we support EMC’s ILM strategy as the best way to store, protect, optimize, and leverage information, and we have connected major systems to our tiered storage systems. Consolidation is already underway at our two major data centers, and a storage-based remote data protection system has also been implemented and operated safely.”

Junji Kato, General Manager, Business Process & Information System Management Department

**EDS (U.S.)**
A leading global technology services company

“We’re pleased to be working with EMC, and we have collaborated closely in the past to add features into the RSA® enVision™ solution to support EDS’s offerings. Our internal systems are predicted to generate about one trillion events per month, and we believe that the RSA enVision solution is the only platform that can support such volumes of compliance and security event data. Using RSA Security® offerings, we believe we are offering our clients the most secure business solutions.”

Peter Reid, Chief Privacy Officer
CLSA (Hong Kong)
An award-winning brokerage, investment banking, and private equity group headquartered in Hong Kong

“EMC’s all-around solution empowers us to build a continuous, highly available information network and maintain our leadership status in the institutional electronic transaction business.”

T. Rajah, Chief Information Officer

Shinhan Bank (Korea)
Korea’s second largest bank with total assets of almost $25 billion, 940 branch offices, and 12,000 employees

“With support from EMC, Shinhan Bank successfully carried out a year-long computing integration project after acquiring Choheung Bank. All banking operations were suspended through the Korean Thanksgiving holidays to perform the final system testing and verification. At this time, all Choheung Bank data was migrated to Shinhan Bank’s main computing center in Ilsan. The project included the establishment of a remote disaster recovery environment, allowing data generated in the main computing center to be stored in real time at the disaster recovery center. EMC provided the right mix of technologies and support services at the right cost to make our new banking system a reality. EMC’s services consultants worked closely with our IT team to help design and roll out these solutions in a very professional and expedient manner. We have been very impressed with their extensive experience and the range of solutions that have been critical to our plan for improving information availability and lowering IT costs. Given its massive data volume, scale, and overall significance, this project attracted industry-wide attention in Korea and will serve as one of the year’s model cases for the use of advanced IT infrastructure in the financial industry. In the future, we will continue to carry out breakthrough IT infrastructure projects with EMC with the ultimate aim to provide the best, most reliable services to our customers.”

Myungkil Han, IT Manager

The share of the digital universe attributable to emerging economies, including India, China, Eastern Europe, Latin America, the Middle East, and Africa, sits today at close to 10 percent of the digital universe. But that will grow 30 to 40 percent faster than the share of mature economies.

Munich Airport International (Germany)
Logs over 400,000 flights and accommodates approximately 30 million passengers each year

“The support EMC brings to our processes has helped us become one of the best and fastest airports in the world. EMC has shown us that if there is an IT gap of any sort, they will find a way to help us close it. EMC and its people keep their promises. They are simply reliable—in products and services alike. If a problem arises, EMC solves it.”

Marc Lindike, Vice President of IT Operations and Services

VPI International Sdn. Bhd. (Malaysia)
A leading Malaysian business process outsourcing service provider

“With our experience in providing outsourced and insourced physical document management services, we knew our clients needed our help in transitioning to a more efficient, paperless environment. EMC understands that our management and protection of our clients’ information—while keeping it accessible—is of paramount importance in meeting service-level agreements. EMC information infrastructure solutions have enabled us to digitize, organize, deliver, and archive existing documents, which can be retrieved quickly from almost anywhere by authorized staff. EMC’s team of experts led the implementation process, advising us how to further improve certain aspects of the system, and EMC has also been very responsive on support issues.”

Shaik Aqmal Allaudin, Managing Director

Growing even faster than the digital universe as a whole is the subset created and replicated by organizations. Today about 25 percent of the bits in the digital universe are created or replicated in the workplace; by 2010 that will rise closer to 30 percent.

Belgian Federal Treasury,  
FOD Financiën – SPF Finances (Belgium)  
Collects and administers approximately 70 billion Euros in taxes annually to cover government spending

“The Treasury’s computer and storage infrastructure was very fragmented. In the past, each mainframe had its own storage system. Now, the storage of more than 40 large systems as well as Windows and Unix servers is centralized into a single online environment supported by an EMC information infrastructure. This integrated computer platform costs the government less than the fragmented infrastructure, both in terms of scalability and management resources. All software applications are centralized, enabling easier data exchange. Business continuity is protected because we can now run our server environment and storage systems in parallel mode. This means that the second system can take over the double workload if a disaster puts the first one out of action. An EMC archive solution also is enabling us to carry out a pilot project that is expected to turn 450 tons of paper into 2.5 terabytes of easily accessed digital information.”

Philippe Moisse, Information and Communications Technology Infrastructure Director

Vail Resorts (U.S.)  
One of the leading resort operators in North America

“The EMC Microsoft Practice’s proposal, methodology, project management skills, and references were unbeatable. Working side-by-side with EMC architects produced enormous buy-in from our IT department. The EMC Microsoft Practice was extremely accommodating.”

Susan Rubin-Stewart, Director of Reservations & Travel

Eastern Asia Commercial Bank (Vietnam)  
One of Vietnam’s leading retail banks, operating with a staff of more than 1,000 in 63 locations, bolstered by a network that includes more than 400 ATMs and over 1,000 point-of-sale systems countrywide

“Before EMC, our distributed, direct-attached storage environment had limited availability and scalability. Sharing, managing, and protecting information across our proliferation of servers, applications, and devices with a disparate range of tools and varying points of control also had become increasingly challenging. Applications had to be taken offline during backup processes, which contributed to disruptive recovery and restore timeframes. To be more competitive and better support our business growth, we rolled out an end-to-end information lifecycle management strategy supported by an EMC information infrastructure chosen for its value, robust technology, high availability, modular flexibility, and solid service and support. With high-quality professional service and reliable customer service from EMC’s value-added distributor IVN, we are confident about using the system as a foundation for our critical applications such as core banking and card services. This implementation has also helped us reduce total cost of ownership, improve return on the investment, and greatly simplify the complexity of our environment. It has also enabled us to tier our storage to meet different service-level requirements and improved utilization rates across our information infrastructure by helping us reduce unused server and storage capacity and resources. Through EMC solutions, we expect to attain world-class business continuity and disaster recovery to support our critical applications as well.”

Cuong Do, Senior Advisor to the Board
DaimlerChrysler (U.S./Germany)
A leading manufacturer of cars, SUVs, minivans, and pickups, as well as the world’s largest producer of commercial vehicles

“DaimlerChrysler is a car and truck company—we don’t want to be a technology company. That’s why we rely on the power of EMC to help us leverage the kind of capabilities our company needs to bring these great products to market. The global EMC team is as aligned with the DaimlerChrysler strategy as our own internal organization. That’s what a strategic partnership is all about. It’s essential. EMC’s people, our people—as one team—ensure the future of both companies. We expect that EMC will continually challenge the status quo and provoke us to think about things in a different way, share best practices, and help successfully implement our strategic game plan.”

Vince Morrotti, Chief Technology Officer

Boston Red Sox (U.S.)
A Major League Baseball team

“Information is vital to the Boston Red Sox. We participate in a highly competitive, rapidly evolving environment that demands access to the freshest information available, in many forms, around the clock. With EMC information management and storage solutions, we operate with the confidence that our executive team has what it needs to make business decisions, our baseball operations staff has the ability to research and evaluate talent in real time, and our coaching staff and players can scout opponents and hone their own performances throughout the season.”

Larry Lucchino, President/CEO

Daum Communications Corporation (South Korea)
A global media company headquartered in Seoul, South Korea, with businesses in communications, online shopping, entertainment, and finance, and over 37 million registered members

“We realized that EMC solutions and EMC’s expertise in helping companies implement an information lifecycle management strategy would work powerfully and help us to achieve our business goals and visions. EMC has provided tremendous value to us through strategic consulting. We were able to build an effective information infrastructure environment that aligned capacity and appliances to new tiers for cost optimization and better service levels. We think of the EMC sales team not only as a product seller, but also as a truly reliable and strategic partner who values its customers’ satisfaction and success more than anything else. Of great value to us is EMC’s ability to help us generate new revenue streams and enhance our own customers’ satisfaction. After partnering with EMC, we can provide the most stable services in our company’s history. We will continue to forge a stronger strategic partnership to generate more benefits and opportunities.”

Junho Lee, Chief Information Officer
**Bank Internasional Indonesia (Indonesia)**
One of the six largest banks in Indonesia with more than two million accounts served by over 7,000 employees across 250 branch offices, including four outside of Indonesia

“Our new MIS management analysis application is helping us gain a better understanding of customers’ needs and trends, and we needed a way to pull key data off our mainframes into an isolated environment so it could be analyzed, piloted, and mined without impacting the core operation mainframe system. A powerful EMC information infrastructure now helps consolidate all of the data from our core banking system so that the right reports for management can be quickly created. Today, daily reports can be generated across the country and branch offices. Previously, it was impossible to do this even on a weekly basis. Monthly or quarterly reports might have been possible with a lot of effort, but we would have tied up many resources at all the branch offices just to get the data we needed. By freeing up the staff from time-consuming tasks like data compilation, they can focus on customers. EMC was instrumental in providing a solution that helps us do what we do best—serve our customers.”

Talip Rahman, Division Head of MIS Business
Harianto, Division Head of MIS Information Technology

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**Informatel (Australia)**
A privately owned Australian company offering interactive telecommunications services to many of the country’s largest organizations

“Our clients need a direct view of the statistics relevant to promotions and offers they are running, and we need to provide this across hundreds of thousands of transactions with only a small delay. We required a powerful and scalable system that would enable us to easily count all transaction records and allow us to search for certain statistics, such as how many of the text messages received were from Telstra mobile phones. EMC recommended a powerful NAS solution that would enable us to consolidate our storage into a single repository and would provide the speed and scalability required. It has worked flawlessly since it was implemented. It’s a really amazing outcome and testament to the quality of the EMC technology and team.”

Daniel Shelly, Operations Manager

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**PETCO (U.S.)**
A leading provider of pet-related products and pet services

“In retail, information delivers huge value to every operation. Consolidating our information onto an EMC information infrastructure has allowed us to access vital data across our enterprise more quickly and efficiently. By keeping closer tabs on consumer buying trends, we’re able to identify opportunities by store, customer segment, or type of channel—whether it is online or in our stores. We’ve expanded significantly since we became an EMC customer four years ago, and EMC has given us the performance, reliability, and support we’ve needed to move our business forward and succeed.”

Eric Rosenzweig, Vice President of Information Systems
VMware

VMware is the global leader in virtualization software for industry-standard desktops and servers. VMware delivers a complete suite of desktop and server products that are known for quality, innovation, and customer value. In 2006, it is estimated that VMware’s virtualization products ran more than 10 percent of the new x86 workload. More than 20,000 customers are using VMware products today to address business objectives such as consolidating servers and space, reducing power and cooling costs, enabling a cost-effective disaster recovery and business continuity strategy, reducing the cost of managing a desktop environment, and, overall, creating a more flexible and dynamic IT environment.

Cumulatively, VMware’s products have saved businesses—from small and medium businesses to the Fortune 500—billions of dollars. A third-party survey of VMware customers conducted in September 2006 showed that 85 percent of VMware customers use VMware virtualization products in production environments. Additionally, 43 percent deploy all or most of their new applications in VMware virtual machines, with most customers expecting to virtualize at least 50 percent of their IT infrastructure within three years.

VMware Infrastructure allows IT organizations to achieve:
- 60-80 percent utilization rates for x86 servers, up from today’s 5-15 percent
- Provisioning of new applications in tenths of seconds, not days
- Change-request response times measured in minutes
- Zero-downtime hardware maintenance without waiting for maintenance windows

Technology partners large and small have also embraced VMware’s products and are creating tremendous value of their own with VMware’s open platforms.

VMware Infrastructure: Doing More with Less

When companies use VMware products for server consolidation, they always achieve lower hardware costs and reduced power consumption. But now—through a first-of-its-kind program from the Pacific Gas and Electric Company with industry support from VMware and other technology leaders—customers in northern California have an additional financial incentive. In return for reducing their power demands, customers collect rebates from the energy company—up to $4 million per project site—for the power conserved by virtualizing their servers.

Radiator Express Warehouse

For Radiator Express Warehouse, a fast-growing automotive-parts distributor, the PG&E rebate totals close to $6,000, the result of taking 31 physical servers out of production. But the benefits extend beyond the combined savings of the rebate and the 25 percent reduction in power and cooling costs. “It was worth it to me just for the peace of mind in being able to support and grow my business,” says CTO Mike Carvalho. “By virtualizing my servers, I’ve got total redundancy, I don’t have to allocate a separate machine for every application, and I’m no longer facing $100,000 in new infrastructure costs just to keep up with business demands.”
Johnson Controls, Inc.
A Fortune 100 company and leading provider of automotive interiors and building efficiency and power solutions

Johnson Controls was suffering the effects of severe server sprawl in its data center: spiraling costs for power and cooling, proliferating networking conflicts and hardware expenditures, and utilization rates as low as .1 percent on its 200-plus servers.

Using VMware Infrastructure to regain control, Johnson Controls quickly achieved a 20:1 consolidation ratio by virtualizing physical servers in development and production environments. This action greatly reduced hardware and operational expenses, conserving 32 tons of cooling capacity, saving $760,000 in hardware renewal costs, and driving CPU utilization rates into the 50-70 percent range.

Additionally, the company utilizes VMware Virtual Desktop Infrastructure to streamline the management of developer desktops while improving security and customer satisfaction. Application owners are able to test on faster virtual machines, and the Windows team is able to gain more granular access control over third-party developers, with the ability to turn off problem sessions easily and with minimal disruption.

“Like a lot of companies, we have offshore development resources to help us keep costs down,” says Philip Cramer, the Team Lead, Windows Server Platform. “VMware software helped us deal with some of the difficulties that come along with using third-party developers. First, to be most effective, these developers need access to internal applications at Johnson Controls. We use VMware Virtual Desktop Infrastructure to set up XP sessions using virtual machines that these developers can VPN into. We don’t have to worry about what they’re running on their machines or what state their desktop is in. All that work can be done within the virtual machine at our data center.”

“Our biggest takeaway from our experience is that VMware technology lets us do more with less. Our whole objective is to drive up our system utilization, and the beauty of VMware Virtual Infrastructure is that it allows us to do this—without performance degradation. We’re looking forward to seeing what else we’ll be able to do with VMware software going forward.”

Société de transport de Montréal
The major transit authority for the largest city in Quebec, operating bus, subway, and commuter rail systems

“Société de transport de Montréal provides 1.3 million trips on its system every day. With VMware Infrastructure, Société de transport de Montréal was able to cut costs by 30 percent, and management sleeps better at night knowing that customers will be able to get transportation information, even in the event of a disaster in our data center. With VMware Infrastructure 3, we can confidently run the most processor-, storage-, and memory-intensive applications in virtual machines. VMware Distributed Resource Scheduler (DRS) also will minimize the need for manual intervention. VMware High Availability and VMware Consolidated Backup will further facilitate our seamless user experience, which is crucial to our company.”

Mike Stefanakis, Senior Systems Engineer
Merrill Lynch
One of the world’s leading wealth management, capital markets, and advisory companies, with total client assets of approximately $1.6 trillion

"While we initially chose VMware Infrastructure to address development hardware problems by reducing hardware costs and decreasing server deployment time, we soon discovered additional benefits to adopting the technology, including server portability, protection, and availability. We also envision that the flexible and efficient virtual infrastructure will allow even greater disaster recovery options, virtual labs, training, and desktop portability."

Keith Leahy, Vice President

QUALCOMM
A Fortune 500 company and leading provider of digital wireless communication products and services

"The new features in VMware Infrastructure 3 support our plans to further expand our virtual infrastructure. [They] will allow us to optimize efficiency and resource use across the infrastructure, while driving down hardware and operational costs. With distributed availability services, we can bring complete high-availability coverage to many of our production applications at minimal cost."

Paul Poppleton, Senior Staff Engineer

Princeton Softech
A leading provider of enterprise solutions that align application data management with business objectives

"Before acquiring VMware Lab Manager, we didn’t have the versatile, on-demand environment we needed. Virtualization helped, but even then, requiring IT support to provision specific environments created bottlenecks. Lab Manager allows us to support as many ERP and CRM environments as necessary to satisfy the needs of our engineering talent and to achieve our business objectives."

Jim Rhodes, VMware Administrator

Business Objects
A global leader in providing business intelligence software to more than 42,000 customers worldwide

"For us, it’s pretty much VMware Workstation and VMware Server, all day, every day. They’re core tools for doing our day-to-day jobs. We’ve seen huge productivity gains as a result of our sales consultants no longer having to put together their own individual demos. In fact, we just came from a meeting of worldwide sales consultants where we continued to hear how much they appreciate the centralized demos. There’s no question we’re now providing our sales consultants with the best demos of our most recent products. Without VMware technology, this would not be possible."

Alexis Guinebertiere, Product Marketing Manager
The Relentless Growth of Digital Information

Information Created, Captured, and Replicated

In 2006, 161 exabytes (or 161 billion gigabytes) of digital information were created, captured, and replicated. That quantity equals approximately three million times the information in all the books ever written. And in 2010, the amount of information created will surge more than six-fold to 988 exabytes, representing a compound annual growth rate of 57 percent.


Information Creation, Capture, and Replication

The distribution of the expanding digital universe by geographic region more or less resembles IT spending by region. All regions are expected to grow by more than 50 percent per year, and the emerging economies, especially those in Asia Pacific, are growing faster than the worldwide average.


User Creation, Organizational Worries

While nearly 70 percent of the digital universe will be generated by individuals by 2010, most of this content will be managed, hosted, transported, or secured by an organization along the way. Organizations will be responsible for the security, privacy, reliability, and compliance of at least 85 percent of the information.

Industry Recognition for EMC Innovation

Product and Service Awards
EMC products and services were recognized with 45 significant awards and honors in 2006.

2006 Five-Star Partner
EMC Infoscape™
VMware Infrastructure 3

EMC e-Discovery Solution: “MVP” Storage World 2006
VMware Distributed Resource Scheduler
Mission-Critical Software Support

EMC CLARiiON® CX-3 and EMC Centera®
2006 “Best of Show”
EMC Documentum® eRoom® and BPM
Virtual Machine Software VMware GSX Server™

EMC Retrospect®
EMC Smarts® IP Availability Manager and MPLS Manager 2006 “Product of the Year”
VMware Technology Network Subscription 2006
The Total Customer Experience: EMC’s Commitment to Our Customers

The employees of EMC are committed to providing customers with the IT industry’s best Total Customer Experience (TCE). By that, we mean consistently exceeding our customers’ expectations for quality, service, innovation, and interaction. To deliver on our commitment, we ensure that the “voice of the customer” informs everything we do and every interaction we have with customers. We have grounded our TCE initiative in a solid measurement system, with Lean Six Sigma as our framework for continuous improvement. The Total Customer Experience unifies everything we do as a company and boils down to the following promise to our customers.

We will:

• Deliver the highest-quality products, solutions, and services.
• Drive simplicity in every aspect of our relationship.
• Set the right expectations.
• Always follow through on our commitments.

EMC’s Commitment to Diversity and Inclusion

We are committed to exceeding the expectations of the tens of thousands of culturally diverse customers we work with around the world.

We provide an inclusive work environment and fully engage the diverse skills, perspectives, and opinions that comprise the global EMC family and strive to have our workforce mirror our customers and communities.

In fact, every day we:

• Advance our cross-cultural competence by attracting, retaining, and developing talented people globally.
• Support “employee circles,” which are affinity groups organized and run by employees of diverse backgrounds who ensure that EMC is open to a range of people and perspectives.
• Promote diversity advancement outreach programs in our communities.
• Work with universities and professional societies to encourage young women and minorities to think about pursuing technology careers.

All of these efforts enhance EMC’s ability to understand and serve its customers and foster a culture of innovation that has become a magnet for highly talented individuals from all over the world.

We are convinced that our diversity enriches our company, the products, services, and solutions we offer, and the overall experience we provide to our customers.
**Who We Are**

We are a leading technology company that's driven to perform, to partner, to execute. We go about our jobs with a passion for delivering results that exceed our customers’ expectations. We pride ourselves on doing what's right, and putting our customers’ best interests first. We lead change and change to lead. We are devoted to advancing our people, industry, and community. We say what we mean and do what we say. We are EMC. Where information lives®.