EMC²
where information lives®

EMC 2009 Sustainability Report
Advancing the Journey

Table of Contents

Our Priorities

Healthy Ecosystems

We are on a journey of environmental sustainability, committed to improving our performance and transparently reporting our progress. Our priorities are energy and climate change, and material use and waste. Our actions are focused on optimizing our operations and our value chain, transforming information infrastructure to be more sustainable, and collaborating for an environmentally sustainable world.

Engaged People

Inside EMC we cultivate a culture of inclusiveness, innovation, and education. It takes diverse perspectives and a blend of creative minds to innovate groundbreaking solutions. A workforce whose diversity mirrors our customer base, feels valued for their unique talents and perspectives, and is encouraged to pursue lifelong learning make the best, most innovative IT solutions possible.

In the future, more engineers and scientists will be needed— a highly skilled workforce to innovate IT solutions for tomorrow. We invest in this future workforce through our focus on education and global academic initiatives.

Shared Value

Business creates jobs, share-holder wealth and economic benefits for local communities and global society. Strong gover-nance, coupled with visionary and ethical leadership, is essential to the long-term sustainability of our enterprise. Engagement and collaboration with our stakeholders enables each party to stay informed and potentially create mutu-ally beneficial solutions together.

Transformative IT

We believe that IT has and will continue to transform the way organizations work, people live and communities thrive. Around the world, people are creating new ways to grow human, ecological, and financial well-being together.

We are driven at EMC to provide groundbreaking prod-ucts and solutions that support a more sustainable world. We enable our customers to advance transformative ways of living and working, whether it's making the health care system more effective, enabling new models of delivering government services, or advancing better systems of energy and resource use.
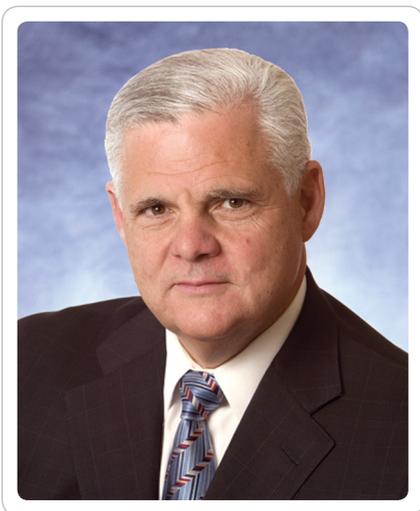
From the Chairman, President and CEO, Joe Tucci

May 2010

With each passing year, we deepen our understanding of EMC's inter-dependence with the world and the responsibilities that result from this connectedness. We recognize that our sustained prosperity depends on an economically vital, inclusive, and educated society as well as on a healthy environment. Therefore, we strive to make decisions and operate our business in a sustainable way—a commitment we sum up with the phrase: "People, Planet, Prosperity."

For us, this is a journey of continuous learning and improvement. It is also a journey of broadening our engagement with others and sharing knowledge and best practices. For example, we are collaborating with our customers, partners, suppliers, and communities to realize more of IT's potential to generate economic opportunity and create more efficient and accessible government and healthcare services. We also see innovative uses of IT enabling an information-rich, low-carbon economy that minimizes reliance on physical resources. In fact, working with our strategic partners, we are paving the way for our customers to realize the benefits of a new vision of IT that we call private cloud computing. The private cloud will transform IT into a highly efficient and flexible service that will, along with other benefits, enable dramatic improvements in power and cooling efficiency.

Internally, our sustainability initiatives have been focused on minimizing the impact of our global operations on the environment. We measure and work to reduce our carbon footprint, which encompasses the operations of EMC's global business. And we've let our suppliers know that we expect them to apply the same degree of attention to their environmental impact.

Beyond our environmental initiatives, we strive to cultivate a fully inclusive and diverse global workforce by recruiting, developing, and retaining people who represent a variety of languages, nationalities, value systems, heritages, life experiences, skills, beliefs, and more. We seek people from every constituency who can help us understand the varied needs of our customers around the world and who want to contribute to the betterment of humankind as well as to our business.

In 2010, we emerged from the depths of the prior year's global recession a much stronger and more agile company. We are committed to strengthening our financial and operational foundation for long-term growth and sustained prosperity.

We are also determined to contribute to a sustainable global society. Doing so requires openness and transparency as well as receptivity to new ideas and approaches. It is in this spirit that we invite you to read our sustainability report and welcome your comments and feedback. You can reach us at Office_Of_Sustainability@emc.com.

Joseph M. Tucci
Chairman, President and Chief Executive Officer
EMC Corporation

From the Chief Sustainability Officer, Kathrin Winkler

In August 2009, EMC celebrated its 30th anniversary. We used the occasion to reflect on how much our company—and the world—has changed since our founding in 1979. We also gave serious thought to how much more we will need to change to meet our customers' and the planet's ever-evolving needs so that our company can remain relevant, vital, and prosperous for decades to come.

The larger and more global EMC becomes, the more clearly we see that the principles for creating a sustainable world also apply to creating a sustainable company—principles like taking the long view of your actions and viewing the world as a complete and complex system with countless interconnections and interdependencies.

If you hold that view—and a growing number of our 43,000-plus employees do—then you realize that long-term social, environmental, and economic sustainability must become an essential part of every decision and action. This change in organizational mindset is the very journey we're on.

We are fortunate that EMC's knowledge and technology has so much to offer a world that needs to manage all of its resources more intelligently. EMC specializes in building information infrastructure, the digital foundation that people and organizations around the world use to store, protect, manage, and harness their information.

In fact, our purpose is to lead our customers on a journey to what we call the "private cloud," which is shorthand for creating a much more efficient and effective way to deliver information technology as a service. The increasing digitization of the world and cloud computing are beginning to change what have historically been physical processes to what will increasingly become virtual processes, where information substitutes more and more for material. And that shift from physical to virtual can do a lot to help preserve and restore our natural resources, expand access to education, healthcare, and economic opportunity, and enable more value to be created from ideas and information.

While this transformation will happen gradually, EMC is excited about the contributions being made by the IT industry. We are on a journey that will touch every part of our business, from our operations to our products to our supply chain; and from our employees to our customers, investors, and communities. We are pleased, but not satisfied, with what we have accomplished and are committed to continuous progress throughout our organization. In these pages, you will read about the major challenges we are tackling. We are learning as we go and drawing on knowledge from many sources. We encourage you to share your ideas for how we can advance our own sustainability efforts and contribute to a more sustainable industry and society.

I am proud to be working with so many creative and determined people at EMC who are applying their considerable talents so that all of us, working together, can build a sustainable future.

Kathrin Winkler
Chief Sustainability Officer
EMC Corporation

Corporate Profile

Second only to your people, your information is your organization's most important asset. EMC, a Fortune 500 company, 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. EMC's mission is to help people and organizations bring the power of their information to life. EMC's vision is to lead customers on a safe and swift journey to the private cloud, a dramatically more efficient and effective model to deliver IT as a service. EMC's passion is to innovate to make life better for customers.

We help a range of customers and consumers

EMC works with organizations around the world, in every industry, in the public and private sectors, and of every size, from startups to the Fortune Global 500. Our customers include banks and other financial services firms, manufacturers, healthcare and life sciences organizations, Internet service and telecommunications providers, airlines and transportation companies, educational institutions, and public-sector agencies. EMC also provides technology, products, and services to consumers in more than 100 countries.

Strong leadership record

Our differentiated value comes from our sustained and substantial investment in R&D, our thousands of technical R&D employees around the globe, the industry's broadest portfolio of systems, software, and services, our ability to create total integrated solutions—all designed from top to bottom by us—and our commitment to delivering the best Total Customer Experience in this or any industry.

To strengthen our core business and extend our market to new areas, we have, over the past five years, invested more than $7 billion to acquire and integrate approximately 40 growth-oriented companies. We operate R&D centers in Belgium, Brazil, the Netherlands, Ireland, China, India, Israel, Russia, Singapore, and the U.S. We have manufacturing facilities in the U.S. and Ireland, and partner for Configure to Order (CTO) manufacturing in Brazil and China. We hold the most stringent quality management certification from the International Organization for Standardization (ISO 9001), and our manufacturing operations hold an MRP II Class A certification.

From 2003 through 2009, EMC's total consolidated revenue has grown at a compounded annual rate of 14.5 percent and non-GAAP net income has grown 25.7 percent. Despite tough global economic conditions and a sharp downturn in information technology spending in 2009, EMC emerged from the global recession a much stronger and more agile company. We entered 2010 in our best financial and operational shape ever.

A global presence

Today, we employ approximately 43,000 people worldwide, more than 40 percent of whom work outside the U.S. We are represented by approximately 400 sales offices and scores of partners in more than 80 countries around the world. We have the world's largest sales and service force focused on information infrastructure, and we work closely with a global network of technology, outsourcing, systems integration, service, and distribution partners.

We are committed to acting in a socially and environmentally responsible manner and to being an attentive and thoughtful neighbor in our local and global communities. We are a publicly traded company, listed on the New York Stock Exchange under the symbol EMC, and are a component of the S&P 500 Index.
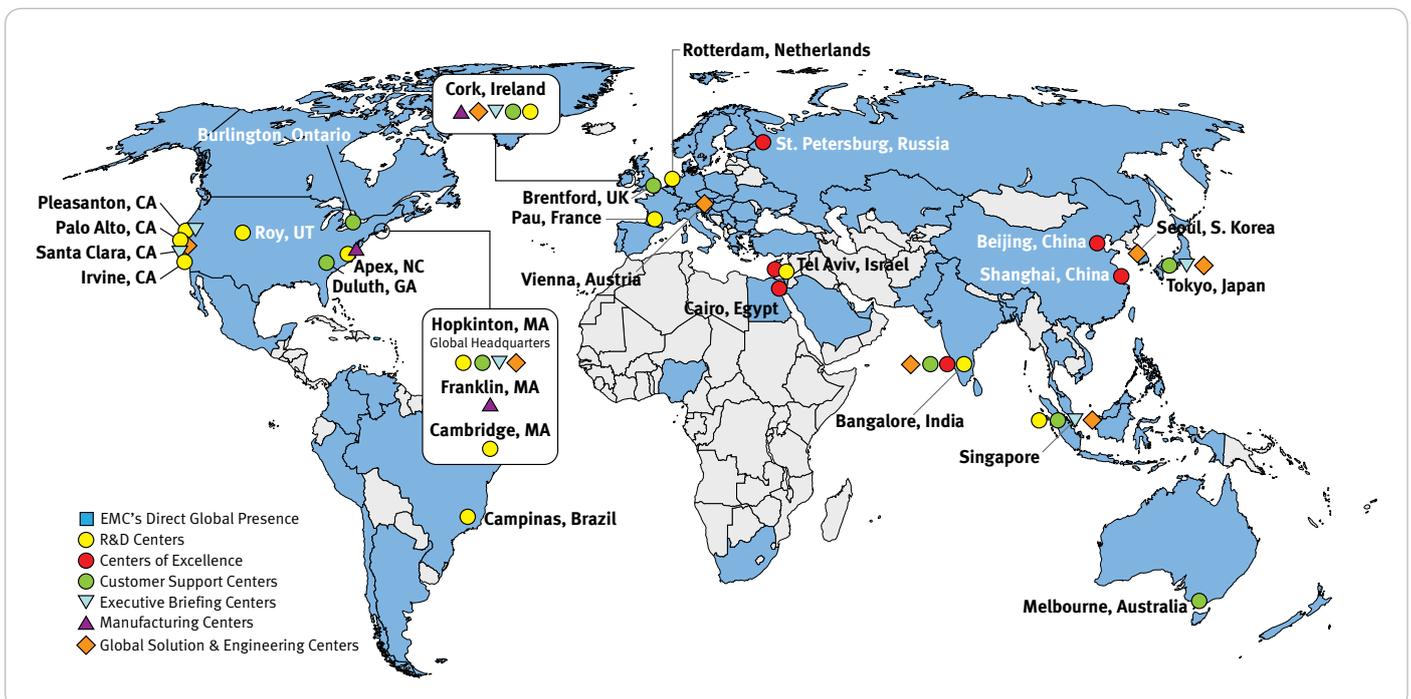
Workplace

Inside EMC we are cultivating a culture of inclusiveness, innovation, and education. Diverse employees who are encouraged to pursue lifelong learning make the best, most innovative IT solutions possible. We also seek to create a safe, healthy, engaging and supportive workplace for our employees to thrive.

• Global Inclusion

• Career Development

• Innovation Conference

• Global Expansion

• University Relations

• Health and Wealth Benefits

• Health and Safety

• Managing Change

Additional Information
  – EMC Global Labor Principles

Global Inclusion

"Visionary companies that look decades ahead understand that a commitment to inclusion and diversity is the key to building a fully engaged, best-in-class workforce and unlocking local markets in every corner of the globe. EMC exemplifies the best of them."

Douglas C. Freeman
CEO of Virtcom Consulting and
Founder of the World Diversity
Leadership Summit

To sustain its relevance and vitality for the long haul, EMC strives to excel at attracting and retaining talented people who reflect the diversity of its global marketplace and who can help EMC innovate its way to new solutions for its customers. That's why building a fully inclusive and diverse organization has become not only a business imperative but also a way of life for us.

We recognize that diverse organizations aren't necessarily inclusive, and inclusive organizations aren't necessarily diverse. So we won't settle for anything less than an inclusive and diverse company. We drive the value of inclusion from the top of our business down and from the bottom up, encouraging all employees to embrace the importance of creating a fully inclusive environment across EMC. Our strategy has three dimensions: executive accountability; talent management; and global expansion of the inclusion initiative.

Executive accountability

Our executives are personally involved in executing EMC's diversity strategy and have supported our longer term goal of globalizing inclusion by implanting inclusion into every region in which EMC does business. Senior executives receive key diversity metrics twice a year and are directly involved in developing new strategies and action plans.

Talent management

Investing in diverse, high-potential employees helps to build a culture of inclusion. Special mentoring and coaching programs support retention, development, and promotion across constituencies. EMC's Office of Global Workforce Inclusion utilizes the Organization and Talent Review process to identify and develop high-potential employees across constituencies, and develop succession plans to advance diverse leadership. To learn more about talent management at EMC, please see the "Career Development" section.

Our diversity recruiting strategy drives deeper representation among diverse constituencies. We have added summer internship programs with the United Negro College Fund and the National Action Council for Minorities in Engineering to aid in developing a diverse pipeline of future employees.

Expanding the initiative

Our customers, employees, suppliers, and communities expect to experience a culture of inclusion and trust. Expanding our global presence in key markets brings us closer to our customers and allows us to cultivate new talent worldwide. Our supplier diversity program broadens our supply base, expands opportunity for historically disadvantaged people, and builds economic strength in our communities. And our commitment to full citizenship in the communities around the globe where we conduct business and where our employees live sustains efforts that benefit underrepresented populations.

Strategic partnerships also increase our attractiveness as an employer, provide professional development, and help us to drive greater levels of diversity within our employee ranks. Included among our most noted partnerships for 2009 were:

• Premier sponsor of Simmons School of Management Leadership Conference

• Vision Sponsor of the Bangalore Advancement of Women Global Conference, organized by Working Mother Media

• 100 Black Men Robotics Program

Employee education and engagement

EMC® Employee Circles are organized and run by employees. These circles offer assimilation support to new employees, networking avenues for existing employees, and personal and professional development. EMC's eight employee circles organized around different constituency groups are open to employees and contractors of all backgrounds, and more than 4,000 EMC people in three countries are members.

We seek to have all of our employees become daily practitioners of our inclusion philosophy. To that end, EMC's Essential Curriculum (see Career Development) includes diversity and inclusion courses which aid employees in fostering a welcoming environment for all people. These courses are also essential to promoting full inclusion and engagement of all employees—making them part of the mainstream business and yielding higher levels of productivity for the company.

In 2009, we launched the "Leading Inclusion" education program. Our executive management team and the full Americas Sales organization were the first to complete the training. The program is being rolled out to the rest of the organization in 2010.

Related materials
- Anti-Harrassment Policy
- Equal Employment Opportunity Policy
- Workplace Violence Prevention Policy

Career Development

We want talented people at EMC. And we believe talented people want to create and achieve their individual professional paths. We empower our employees to develop their own careers, and task our managers with helping people grow their skills and opportunities.

Performance reviews and development plans

Every employee has an annual performance review to discuss strengths, skills, and development needs. Employees can work with their managers to create Individual Development Plans (IDPs). These plans set professional development goals that align with the employees' career aspirations and the needs of the business. More than 60 percent of EMC's employees have IDPs in place.

Learning and development programs

EMC University's Learning and Development programs are designed to attract, retain, and develop the best talent and enhance their ability to execute corporate strategy. EMC's Essential Curriculum teaches employees core competencies to succeed in their current position and advance to the next level. The curriculum consists of a development roadmap for each career level, including robust and targeted portfolios of courses for managers and directors.

There are hundreds of courses to choose from for specific skills development, plus specialized development programs for specific fields or functional organizations.

"EMC continues to demonstrate leading-edge thinking in the field of employee development and in the delivery of programs that help to grow its talent while supporting the execution of corporate strategy."

Sue Todd
President, Corporate
University Exchange

"What originated three
years ago as a vehicle to
draw EMC's technical com-
munity into the innovation
discussion has blossomed
into something quite viral
and central to EMC's inno-
vation process."

Jeff Nick
Chief Technology
Officer, EMC

Talent review process

Talented people are in huge demand in IT, and we work to retain our best people. We conduct
an annual Organization and Talent Review, in which we assess our talent in light of our business
strategy. Each Executive Vice President (EVP) reviews the findings for his organization and shares
the results with the CEO and the EVP of Human Resources. This process yields a plan to develop
our high-potential employees, including promotions and movement across business units.

The Organization and Talent Review is consistently applied across countries and divisions. We have
also initiated a global talent management system to streamline the process. Special development
programs are offered exclusively to our high-potential leaders to accelerate their growth and prepare
them for their next role at EMC. In addition, much of the materials and resources are available to
all EMC employees through the automated talent management system, so they can drive their own
development.

Innovation Conference

Our customers need innovative solutions to help them compete, save money, reduce risk, and create
value from their information. Our annual Innovation Conference harnesses the collective power of
our employees' talents to help shape EMC's future offerings. Employees submit proposals for new
EMC solutions and services, we select the most promising ideas, and we incubate them for new
product and process development.

Social media, global reach

Social media technologies eliminate time, bureaucracy, politics, and geography as barriers to great
ideas. In 2009, employees from 19 countries submitted 1,422 proposals on EMC|One, our internal
social media network. Many proposals came from teams representing multiple countries—the 2009
Innovation Showcase second-place prize was awarded to a team of four employees from three
countries.

More than 3,000 employees voted on the idea submissions via EMC|One. This community voting
plus selection by experts narrowed the field to 100. The winners were announced at the Innovation
Conference in October 2009 at the Bangalore, India Center of Excellence. Fifteen other EMC locations
around the world created their own programs with local speakers and events connected to the "main
stage" in Bangalore by live webcast.

Developing winning ideas

First, second, and third place winners get more than recognition—they get resources to bring their
ideas to the next stage of development. The 2008 winner proposed storing consumer data in the
cloud via a peer-to-peer network. That idea—Constellation Computing—has completed proof-of-
concept and business development and is being reviewed for investment decisions.

Some great ideas do not win awards, but the connections made at the Innovation Conference still
bring them to fruition. For example, a Total Cost of Ownership tool proposed in the 2008 conference
caught the attention of EMC's Emerging Technologies Center. The Center developed the tool, which
is now widely used by the sales force to help customers determine the optimal time to upgrade their
IT infrastructures.

The 2009 Innovation Conference winners were:

- **First Place:** A new data storage and accessibility paradigm for consumer PCs and small businesses, that was developed and released as Iomega v.Clone in 2010

- **Second Place** (and co-winner of this year's Environmental Sustainability award): A system that monitors an enterprise's carbon footprint by tracking and analyzing energy-related events

- **Third Place:** A method for automatically adapting the configuration of a storage system to maintain optimal performance under changing workloads and situations

Environmental Sustainability Award

The first Environmental Sustainability Awards were given at the 2009 Conference. Two proposals were co-winners: the overall second-place winner, and a tool to measure data center energy consumption and determine opportunities for greater efficiency.

Global Expansion

By the numbers

6 Centers of Excellence on three continents

"What we've seen—proven through experience—is that great minds are everywhere."

Sanjay Mirchandani
Senior Vice President and
Chief Information Officer, EMC

We serve customers in more than 100 countries. It is important for us to be close to our customers in our growing markets. Also, new pools of talent are blossoming around the world, and we are on a journey to find the best minds everywhere. EMC's Centers of Excellence (COEs) are cultivating talent and expanding our presence in key markets around the globe.

Local expertise, global strategy

The COEs leverage specific expertise and skills in key markets to advance EMC's business. The employees perform essential services for EMC business units, including engineering R&D, customer service, translation services, tech support, and back-office processing. The COEs are managed locally, and a cross-functional board of EMC's senior executives oversees strategy and investment decisions.

COEs are now open in China, Egypt, Ireland, India, Israel, and Russia. These COEs complement the traditional bases of innovation in North America and Western Europe. One unique advantage of the COE model is that employees from different business units have more opportunities for close contact and collaboration, as opposed to our larger locations where employees often interact only with those from their own business unit.

Recruiting and retention

Many technology companies are seeking to hire top talent in our COE locations. COE management works closely with University Relations, the Academic Alliance, Corporate Training, and the Innovation Network on our recruiting strategy. We also work hard on employee retention, and have kept attrition rates below the market average in each of our COE locations.

Partnering with sales

One opportunity for our COEs is to develop a stronger relationship with the local sales force. While the COE's local managers report to the board at corporate headquarters, the country managers of the sales force report through the sales organization. We are developing strategies to more successfully leverage our COE presence by building closer partnerships with the local sales organizations.

University Relations

Universities play a key role for technology companies. They are sources of talented employees and partners in advanced research. University Relations is our centralized corporate resource for creating, identifying, and managing strategic partnerships between universities and EMC's business groups.

Supporting the business strategy

University Relations works closely with the Academic Alliance, Innovation Network, Office of the Chief Technology Officer, Centers of Excellence, Office of Global Workforce Inclusion, and Community Involvement. This internal collaboration leads to the selection of EMC's key schools, where we have developed recruiting, research, and faculty relationships.

In 2009, 53 percent of our full-time college hires graduated from our key schools. We also expanded our co-op program at four new schools in the U.S. to develop our pipeline of college hires. University Relations is active in 10 countries: China, Egypt, Germany, India, Ireland, Israel, Russia, Singapore, the U.K., and the U.S.

Recruiting for diversity

In 2009 we launched a diversity recruiting program at three key schools in the U.S. The program begins with special programming and mentoring opportunities for first year students, and extends over the four years of their schooling. Our goal is to nurture strong relationships with these students so they will join EMC upon graduation.

By the numbers

10 countries with EMC University Relations programs

Health and Wealth Benefits

At EMC, we use the power of IT to help employees manage their own health and wealth. Our online tools enable employees and their family members to understand their individual status, get information targeted to their needs, improve their health, and grow their wealth.

HealthLink and WealthLink

HealthLink was created by EMC and WebMD, and has been accessed by more than 90 percent of EMC employees in the U.S. Users enter their health information into the confidential, secure portal, and then receive targeted communications about resources to help them with their individual health needs.

This innovative approach to health management has improved health outcomes and contained healthcare costs for employees and for EMC. The per capita cost for healthcare at EMC is below the national trend, with minimal cost shifting.

By the numbers

90 percent of U.S. employees accessed HealthLink

WealthLink is a secure confidential financial portal developed by EMC and Fidelity Investments. Employees can learn investment strategies and develop their own wealth management plans to meet their individual needs and goals.

Personal Health Records

HealthLink also offers an optional Personal Health Record (PHR) for employees to manage their healthcare information, which they may share with their healthcare providers. EMC was the first employer in the world to sponsor an electronic PHR, launching it in 2004. The PHR is automatically populated with medical information such as diagnosis, prescriptions, and lab results.

This PHR helps employees and their adult family members to review complete clinical data with their healthcare providers, avoiding duplicative tests and procedures as well as managing drug interactions and side effects.

Partnerships to benefit employees

Strong partnerships are essential to advance our employee health programs. In 2009 we held a partner and vendor summit to review EMC's accomplishments over the previous seven years and share our vision for the next five years. A centerpiece of the event was a brainstorming session to generate innovative ideas from our partners on how to advance our vision and goals for employee health.

We also partner on medical studies when it can benefit EMC employees. One example is the DASH for Health program, an optional web-based nutrition and health program conducted in partnership with Boston University. The program reduced healthcare costs to employees with heart health risks, and the findings were written up in the Journal of Medical Internet Research. Another example is SmartBeat, a study for remote patient blood pressure monitoring that was conducted with the Centers for Connected Health.

Sharing what we learn

We are members of policy organizations that seek to advance public health, and have been sought out to advise policy makers in the Commonwealth of Massachusetts.

Health and Safety

We work to ensure that our worldwide operations and facilities are safe and healthy environments for our employees, visitors, and everyone who may be affected by our operations. It is the right thing to do, and the smart thing to do, to protect the health, safety and general welfare of all our employees. Certified professionals manage our occupational health and safety programs, and we engage employees to help us improve our performance.

Health and safety management

Our global Environmental Health and Safety management system is certified to OHSAS 18001, the global standard for excellence. As an IT company, our health and safety risks are primarily in our manufacturing facilities, so we focus our facilities certification work on those locations. Our OHSAS 18001 facilities certification status is:

• Ireland manufacturing facility certified since 2005
• Massachusetts manufacturing facility certified in 2009
• North Carolina manufacturing facility to be certified in 2010

"Initiatives like EMC's health management program that engage employees and their families in learning how individual behaviors, choices, and attitudes influence their health are integral to helping to transform the healthcare system."

Deb Devaux
Executive Director of
Community Transformation
for Blue Cross Blue Shield
of Massachusetts

Each of our manufacturing facilities has robust health and safety procedures. Comprehensive Job Safety Analyses and risk assessments support and drive our policies and procedures. We conduct audits and inspections to ensure these policies and procedures are being effectively carried out. Employees take health and safety training relevant to their work through online and instructor-led courses. Employee-led Safety Action Teams meet regularly to review safety issues, perform audits, and organize training programs.

Health and safety violations

In 2009, an electrical arc flash injured an electrical contractor performing services in our Massachusetts manufacturing facility. The Occupational Safety and Health Administration (OSHA) conducted an inspection, and ultimately found that EMC did not violate any OSHA regulation in connection with the incident. In the course of the inspection, EMC was cited with a minor violation unrelated to the incident. This minor violation was immediately corrected.

Pandemic preparedness

EMC recognizes that influenza and other communicable diseases may pose a potential threat not only to the health of our employees, but also to the business operations of both EMC and our global customers. In the event of a major outbreak, we will take direction from health experts to minimize the impact. EMC also is developing a detailed preparedness plan to address how we will continue operating and supporting customers, in the event of an outbreak.

EMC's Global Pandemic Preparedness Team has developed reasonable approaches to help employees and customers around the world deal with pandemics at every phase. Our goal is to continue to assure our employees, customers, and vendors that our Global Preparedness Plan will help minimize interruption to our operations, our customers' operations, and our supply chain.

Related materials
• Health and Safety Policy

Managing Change

During a time of global economic upheaval, acquisitions and restructuring are more common. We work hard to make the transitions as smooth as possible for employees, in order to retain top talent and preserve relationships with employees.

We also take measures to reduce costs before resorting to a reduction of the workforce. This strategy makes us more operationally efficient and fiscally stronger, and also generates goodwill and helps us retain our talented people.

Reducing costs first

In 2008 we launched the Cost Transformation Program to save non-people-related costs. The wide-ranging global program saved millions of dollars throughout 2008 and 2009 and reduced our environmental impact as well. The program included:

• Extending the life of IT assets, especially personal computers and servers
• Reducing power use in labs, data centers, and facilities
• Increasing e-conferencing and reducing travel
• Reducing printing

By the numbers

2,000 jobs were saved by cutting other costs

In 2009 we temporarily reduced employee salaries by five percent in order to further contain costs and save jobs. In 35 countries where EMC operates, this pay cut could not legally be mandatory. However, more than 85 percent of EMC employees in those locations voluntarily took the pay cut to help avoid further layoffs. Employees' pay was restored in January 2010, and more than 2,000 jobs were saved.

Managing talent in acquisitions

Human Resources (HR) gets involved early in the merger and acquisition process. They create an assimilation plan to balance integration into EMC with maintaining important aspects of the acquired company's culture. A primary goal is retaining top talent at both the acquired company and at EMC, especially when high-potential individuals are in roles that exist in both organizations.

Restructure program

In 2009 we completed a restructuring that eliminated approximately 2,900 positions worldwide. We have treated the employees affected by the restructuring program with respect and fairness, as it is the ethical thing to do and also preserves relationships that can enable re-hire based upon future needs of the business.

In the U.S. we offer a separation package that consists of base pay and certain benefits continuation, including medical, dental, and vision coverage. We also offer job search assistance provided by a third-party organization and paid for by EMC. Internationally, EMC severance packages vary by country to comply with local law.

Social Investment

In the future, more engineers and scientists will be needed for a highly skilled IT workforce. We are investing in tomorrow through engagement in education policy and support of academic initiatives around the world. Our employees contribute their time and talent to our global communities. And our Information Heritage program is digitally preserving cultural treasures for future generations.

- Education Public Policy

- Education Partnerships

- Academic Alliance

- Community Involvement

- Information Heritage

Additional Information
  – Funding Guidelines

Education Public Policy

The top priority of our social investment strategy is education, and public policy engagement is a key element. We firmly believe that effective policies to bring all students to high achievement levels are the best way to invest in society's future. EMC Chairman, President, and CEO Joe Tucci has been a leader in education reform in the U.S. since 2000, and we are extending this work globally.

As a technology company, our primary interest and expertise lies in advancing Science, Technology, Engineering, and Math (STEM) education to build a highly trained and innovative workforce for the future. Our efforts are focused on strengthening educational systems and raising standards on the global and local level.

Global Education Initiative

We are involved in education public policy work globally through the World Economic Forum's Global Education Initiative (GEI). The GEI forms partnerships between the public and private sectors to support relevant, sustainable, and scalable national education plans. In 2009 the GEI released its Entrepreneurship Education Report. In 2010, EMC and other leading companies will explore with education officials from countries around the world how best to integrate the report recommendations into education systems worldwide.

Readiness Project

In June 2007, Massachusetts Governor Deval Patrick asked Joe Tucci to co-chair the Massachusetts Readiness Project to improve education. Business, education, and community leaders collaborated and released a 10-year strategic plan. In 2009, the Readiness Project released its finance report with recommendations on how to fund the strategy by increasing revenue and capturing cost efficiencies in the Massachusetts public education system. Current education reform legislation in Massachusetts is advancing the recommendations of the Readiness Project.

Public-private partnerships with higher education were a key recommendation of the Readiness Project. In 2009, EMC launched a new partnership with leading universities and Cisco Systems to build a world-class, high-performance computing center and collaborative research program in Holyoke, Massachusetts. Our university partners include the Massachusetts Institute of Technology, the University of Massachusetts, Northeastern University, and Boston University.

Charter schools

We partner with other leading businesses and the Massachusetts Charter School Association to advocate for expanding charter schools, which can provide educational choice for families and potentially lead to new and innovative education practices. The U.S. Federal Race to the Top initiative increased the focus on this issue in Massachusetts. In early 2010, legislation passed that raised the cap on charter schools in the lowest-performing school districts, a measure we strongly support.

Tapping Massachusetts' potential

We believe that STEM education is essential to maintaining a competitive edge in science and technology. In 2009 we joined with business coalitions to release the "Tapping Massachusetts' Potential" report, with a call to action for Massachusetts to double the number of STEM teachers in grades 7–12, and double the number of STEM bachelor's degrees granted—both to be achieved by 2020. Lieutenant Governor Tim Murray formed an advisory council, which will create a five-year strategic plan with clearly defined goals and objectives.

By the numbers

100 percent growth called for in STEM teachers and college graduates

---

"The demands of life, work, and citizenship cannot be met through a public education system that has remained virtually unchanged for more than a century. The time for fundamental, systemic change is now."

Joe Tucci
President, CEO, and
Chairman of the Board
of EMC Corporation

Education Partnerships

EMC works to strengthen society by expanding access to education. In developed countries, we support programs that encourage students, particularly from underrepresented groups, to pursue science and math. Around the world, we are helping communities gain access to education and IT—tools necessary to succeed in the global information age.

United States

Boston Museum of Science

The Boston Museum of Science extends science education beyond the classroom. EMC is a corporate sponsor of the museum, and our employees are engaged in volunteering with youth of all ages.

California Academy of the Sciences

The California Academy of the Sciences is a scientific institution committed to leading-edge research, educational outreach, and finding new and innovative ways to engage and inspire the public. EMC is a corporate partner.

Citizen Schools

Citizen Schools operates a network of high-impact, after-school programs for middle schools across the country. Through our partnership, EMC employees in California, North Carolina, and Massachusetts work with faculty to enhance their science and technology curriculum, and volunteer in special programs for the classroom.

FIRST Robotics

In the FIRST program students design and build robots for regional and national competitions. EMC sponsors FIRST teams throughout the U.S.

Massachusetts State Science and Engineering Fair (MSSF)

Over 300 high school students showcase their projects in science, math, and technology in this competition held at the Massachusetts Institute of Technology. EMC is a supporting sponsor of the MSSF.

New England Aquarium

Our corporate sponsorship of the New England Aquarium helps to support the museum's permanent exhibits as well as Community Open Houses which are free to the public.

Science Buddies

Science Buddies provides free online resources for K–12 students and teachers developing science fair projects. EMC gives financial support and employees volunteer in the "Ask an Expert" advice forum.

Tech Museum of Innovation

The Tech Museum of Innovation's signature program, The Tech Challenge, engages youth in designing innovative solutions to real-world problems. EMC is a sponsor.

VEX Robotics

The VEX Robotics Competition offers unique and challenging games that put high school and middle school students' engineering and technology skills to the test. Students, with guidance from teachers and mentors, collaborate to build innovative robots for competition in regional and national tournaments. In 2009 we sponsored the World Championship, the VEX All Star Challenge and provided grants to more than 50 teams around the world.

"We congratulate EMC and its employees for their dedication to our neighbors in Latin America. Through these social investments, EMC is working to create a hemisphere of opportunity for all."

John Sanbrailo
Executive Director,
Pan American Development
Foundation

Latin America

Argentina: Buenos Aires

In partnership with Fundacion Leer, EMC helps promote literacy and a love of reading among youth in several public schools in disadvantaged neighborhoods of Buenos Aires.

Brazil: Rio de Janeiro

Alfasol is an organization that promotes and teaches literacy in Brazil and other parts of the world. Through this partnership, EMC provides support for literacy programs for 250 adults in a poor neighborhood of Rio de Janeiro.

Colombia: Bogota

St. Theresa Home provides a location for children of displaced families to participate in extracurricular activities. EMC sponsors the computer lab at this center and also provides general operational support.

Mexico: Mexico City

In partnership with Lazos, EMC provides IT training and development to educators as well as operational support for three primary schools in Mexico City.

Asia Pacific and Japan

Australia

EMC collaborates with One Laptop Per Child (OLPC) to provide children living in remote parts of Australia with a purpose-built educational tool—the XO laptop. In addition, EMC employees demonstrate their commitment to community service by regularly devoting their time to a number of youth organizations throughout Australia.

China: Beijing, Shanghai, and Sichuan

EMC partners with Junior Achievement in Beijing and Shanghai to mentor high school students in developing business acumen. In the wake of the 2009 Sichuan earthquake, EMC donated funds to support the rebuilding of Anren Nursery School, which had been destroyed.

India: Bangalore

In partnership with the Hope Foundation, EMC and our employees provide operational support for a primary school and assist in the classroom as mentors. We also support computer learning centers where low-income men, women, and children learn computer skills.

In addition, EMC employees mentor engineering students as part of a Junior Achievement program called BridgeIT India. The program seeks to improve employability in the Indian IT industry.

South Korea: Seoul

EMC partners with the Seoul Community Child Center Association to support a children's center and library by providing books and volunteer time.

Malaysia: Kuala Lumpur

EMC partners with Hope Foundation in Kuala Lumpur and supports a local reading program. Our employees have been conducting reading sessions and after-school activities with under-privileged children from a Kuala Lumpur elementary school.

New Zealand: Wellington

EMC partners with Wellington City Mission for Youth that cares for troubled young adults. EMC volunteers support the organization as part of their educational projects such as adventure learning days and holiday events.

Philippines: Manila

The Center for Street Children provides a safe home for children in need. EMC employees regularly volunteer time to tutor children in computer skills.

Singapore

EMC and its volunteers donate time and resources to Boys Town and the Saturday Nurture Program. Both organizations offer mentoring and after-school activities for disadvantaged children.

Thailand: SankraBuri

EMC's team in South Asia supports an orphanage and an elementary school in rural parts of Thailand. The time that our employees spend with the orphaned children is often the only interaction with adults they have.

Europe, Middle East, and Africa

Austria: Vienna

The Initiative for Children's Cancer Aid is a unique partnership where EMC employees assist youth recovering from cancer with reintegration into everyday life. EMC also sponsors a mobile teacher who helps students obtain an IT knowledge certificate.

Egypt: Cairo

EMC employees partner with a local orphanage in the Cairo area. They visit regularly to play with the children, and provide toys and school supplies.

Ireland: Cork

EMC employees volunteer with Junior Achievement's M3 Project, which targets economically and socially disadvantaged young people who are at risk of dropping out of school. The dynamic and innovative program focuses on mathematics and career aspirations.

Israel: Netanya, Ramat Gan, Kfar Saba, and Tel Aviv

EMC employees support several facilities for at-risk youth by engaging students in extracurricular activities. EMC employees also tutor elderly members of the community at a local senior center.

Italy: Milan

EMC employees volunteer at a day care center where they engage with children from economically and socially disadvantaged families.

Kenya: Near Ahero, Kiambaa, and Nairobi

In partnership with The ZOO Foundation, EMC and our employees have donated 70 computers to four schools and community centers for training and development that will reach more than 800 adults and children.

Poland: Warsaw

EMC employees tutor more than 70 students in IT skills and training and have provided 10 families with personal laptop computers in partnership with the Substitute Families Foundation.

Russia: Moscow and St. Petersburg

Employees in Moscow partner with Big Change, a charitable fund and educational center that focuses on the continued education and social adaptation of graduates of orphanages. Employees volunteer as computer tutors and conduct IT workshops.

In partnership with the Leonard Euler Foundation, EMC provides 20 scholarships to the top performing mathematics students at St. Petersburg State University. Scholarship winners are also invited to EMC-Russia for a day of learning and exploration.

South Africa: Johannesburg

The Tamaho Primary School supports more than 1,400 students. EMC provides operational support to the school, as well as employee volunteers who offer activities throughout the year.

By the numbers

1,450 students enrolled at Tamaho Primary School

Academic Alliance

Digital information is growing at 60 percent per year. While 10 to 15 percent of IT infrastructure jobs are in storage, that discipline is underrepresented in many undergraduate and graduate computer science and IT programs. EMC's Academic Alliance program enriches university curricula with courses on IT storage and management. The goal is to provide students with knowledge that differentiates them in the IT workforce. Today our program is in hundreds of universities around the world.

Curriculum and tools

EMC's Information Storage and Management curriculum, faculty training, and supporting tools are offered at no cost to academic institutions. Our subject matter experts worked together with professors to validate the curriculum, ensuring technical relevance and easy integration into academic programs. The program is technology-based so students can apply what they have learned to any storage vendor's products.

A key part of the program is the "Information Storage and Management" textbook. Published in May 2009 by John Wiley & Sons, it represents the information storage industry's only definitive reference resource.

The program also features an EMC-developed storage management simulator. This simulator can be installed in a university computer lab to provide the experience of working on a storage system without having to purchase storage platform hardware. Registered students also have access to a web portal that includes simulators, case studies, videos, podcasts, and white papers.

Faculty engagement for ongoing development

Our Academic Alliance team continually engages with faculty in order to improve the program. They encourage feedback through our faculty portal, regular faculty e-mail communications, and interactions with Academic Alliance program managers. Our skilled subject matter experts, many with academic backgrounds, continually create content and faculty resources that are informed by these engagement processes.

Program expansion

The program's future goals include continued expansion, with an emphasis on emerging markets where IT and EMC have a growing presence. Also, we will translate the ISM textbook into Portuguese and Russian, in addition to current English and Mandarin Chinese editions.

EMC Localization Internship Program

In 2009 we launched the EMC Localization Internship Program (ELI), a joint program of the Academic Alliance and EMC's Localization organization. The Localization team translates materials on EMC's products and services and localizes our products so they can be easily used in languages other than English. In the ELI program, students can apply what they have learned in the Information Storage and Management program to translate EMC materials into their native language, and explore a career in translation and localization.

By the numbers

19,000 students have taken Information Storage and Management courses between 2006 and 2009

"The course, taught in partnership with EMC, was a great opportunity to have this approach between the academic and professional."

Juno Araújo
Computer Science Student,
Aluno Ciencias da Computação,
Universidade Católica
de Brasília—Brazil

Community Involvement

While education is our first priority, we also encourage employees to join Community Involvement Committees, which bring colleagues together with the goal of improving health and human services. Our Community Involvement organization also supports the arts and responds to disaster relief efforts around the world.

Disaster relief

EMC recognizes the toll of human suffering and economic uncertainty in the wake of natural disasters. As a company we respond regularly to these unfortunate situations by matching employee donations to benefit service organizations, such as the American Red Cross and International Red Cross and Red Crescent Societies. In 2009, EMC matched employee donations to assist in relief efforts responding to:

• Australian Bushfires
• L'Aquila, Italy Earthquake

Community partnerships

EMC's Community Involvement department strives to support employee-led efforts and also to provide employees with guidance and resources to initiate, maintain, and grow grassroots activities of their own.

Some of the organizations EMC proudly supports are:

• Big Brothers Big Sisters
• Boston Symphony Orchestra
• Habitat For Humanity
• International Red Cross & Red Crescent Societies: China
• Michael Carter Lisnow Respite Center
• Tabitha: Cambodia
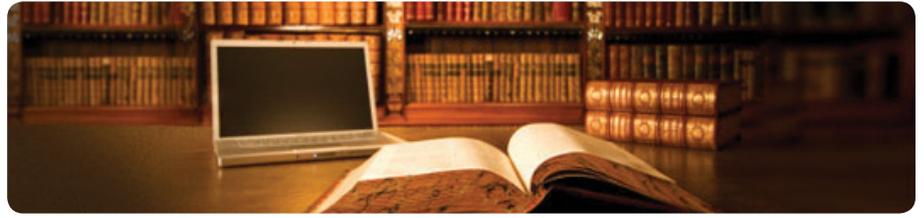
By the numbers

1,000,000 dollars raised for the Michael Carter Lisnow Respite Center

Information Heritage

Thousands of years of humanity's cultural heritage is captured in books, art, and artifacts stored in museums and libraries around the world. Digital information is less than a century old, yet opens an enormous opportunity to preserve and share precious works. EMC has provided more than $20 million in products, services, and financial assistance for digital information heritage worldwide.

The EMC Information Heritage Initiative

EMC's Information Heritage Initiative partners with cultural institutions to capture, store, and share digital images of their priceless collections. Our Professional Services organization assists the institutions pro bono, and we donate our solutions to store and share the digital files. Thousands of artifacts are now preserved for posterity, and are also made available through the Internet. There are currently seven Information Heritage Projects in six countries:

- The Finca Vigia Foundation, Havana, Cuba
- Herzogin Anna Amalia Library, Weimar, Germany
- Cheongju Early Printing Museum, Cheongju City, South Korea
- The John F. Kennedy Library, Boston, Massachusetts, U.S.
- Leonardo3 SRL, Milan, Italy
- Smithsonian Institution, Washington, D.C., U.S.
- Yad Vashem, Jerusalem, Israel

The EMC Heritage Trust Project

The EMC Heritage Trust Project offers financial support for digital curation in local communities around the world. Using the same criteria for excellence that guide the Information Heritage Initiative, the Project awards cash grants of $5,000 to $15,000 to local cultural institutions, archives, or private collections. New grants are awarded annually through an open application process. The 2009 grantees were:

- Indira Gandhi National Centre for the Arts, New Delhi, India
- NPO Memory of Showa Era, Tokyo, Japan
- Instituto de Hermanas Catequistas Guadalupanas en Saltillo, Coahuila, Mexico
- Northeastern University Libraries, Boston, Massachusetts, U.S.
- Canadian National Exhibition Archives, Toronto, Ontario, Canada
- International Jacques Maritain Institute, Rome, Italy
- Van Papier Naar Digitaal (From Paper to Pixels), Bilthoven, Netherlands

Environment

We are on a journey of environmental sustainability, committed to improving our performance and reporting our progress. Our priorities are energy and climate change, and material use and waste. We focus on optimizing our operations, transforming IT to be more sustainable, and collaborating for an environmentally sustainable world.

• Environmental Strategy

• Energy Use and Climate Change

• Material Use and Waste

• Collaboration and Engagement

Related Materials
  – Environmental Policy

Environmental Strategy

EMC's Office of Sustainability is applying a unified environmental strategy across our business and day-to-day operations. We have built effective internal governance to support execution against this strategy. In 2009 we joined Ceres, and have adopted their sustainability principles as part of our framework in building our sustainability strategy.

Environmental sustainability definition

At EMC, we define environmental sustainability as conducting and transforming ourselves and our company in a manner that will do the following for our employees and their families, customers, suppliers, investors and the global community:

• Conserve and enrich the environment in which we live and work,
• Create value in the adaptations that are required to thrive into the future, and
• Mitigate the risks from changes in the planet that we cannot influence

EMC's environmental priorities

We focus our efforts where we have greatest potential to reduce negative impact and even have positive influence. In examining our risks and opportunities, we have defined the following focus areas for our environmental strategy:

I.   Energy and climate change
II. Material use and waste
III. Collaboration and engagement with external groups

Recognizing that environmental sustainability is both a responsibility and opportunity, we focus our efforts across the following spheres:

• EMC operations
• Our supply chain
• Use and disposal of our products
• Efficiency in our customers' IT infrastructures
• The global community

Governance model

EMC is integrating environmental sustainability throughout our business. The Corporate Governance and Nominating Committee of EMC's Board of Directors meets with the Chief Sustainability Officer twice a year to provide board level oversight. See our operating model on page 30.
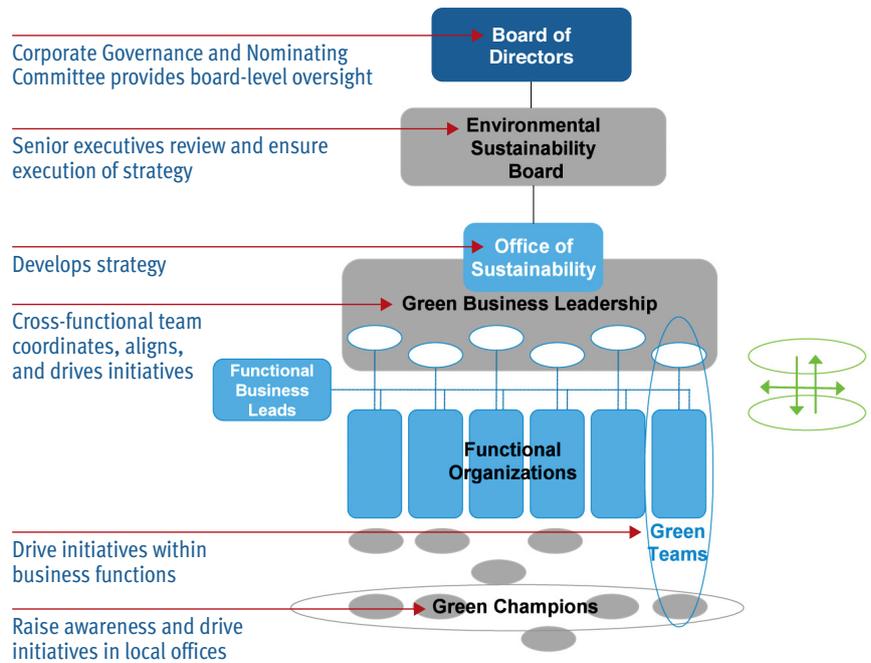
Corporate Governance and Nominating Committee provides board-level oversight → **Board of Directors**

Senior executives review and ensure execution of strategy → **Environmental Sustainability Board**

Develops strategy → **Office of Sustainability**

Cross-functional team coordinates, aligns, and drives initiatives → **Green Business Leadership**

Functional Business Leads

Functional Organizations

Drive initiatives within business functions → **Green Teams**

Raise awareness and drive initiatives in local offices → **Green Champions**

Environmental management system

EMC's comprehensive environmental management system covers waste reduction, conservation of energy and materials, and overall environmental impact at our facilities worldwide. All of EMC's global manufacturing sites are certified to the world's most recognized and accepted environmental management standard, ISO 14001. The same policies and procedures apply, as appropriate, to all of EMC's facilities worldwide. In 2009, EMC had no fines or non-monetary sanctions for non-compliance with environmental laws and regulations in 2009.

Energy Use and Climate Change

"Companies that control their risks today, manage their emissions and seize the opportunities to produce low-carbon goods and services, will be the best placed to prosper in a low-carbon economy of the future."

Paul Dickinson
Chief Executive,
Carbon Disclosure Project

Energy use and climate change strategy

Taking action on climate change enhances shareholder value, reduces risk, and strengthens our business position for the 21st century. We recognize our responsibility to our global community to address our impact on the climate, and the necessity of collaboration to effect change. Our carbon disclosure reporting has won awards for its comprehensiveness and transparency.

EMC's greenhouse gas (GHG) emissions are primarily attributable to the generation of electricity consumed in our own operations and across our supply chain, and through the use of our products. In addition to our responsibility to reduce these GHG emissions, we have an opportunity to contribute to mitigation beyond our own industry. The innovative use of IT has great potential to reduce global GHG emissions by supporting new, more efficient ways of living and working.

Our strategy
EMC's climate change strategy focuses on:

- Reducing emissions from our own operations by
  - Decreasing the demand for energy
  - Maintaining a highly efficient infrastructure
  - Identifying opportunities to adopt renewable energy sources that are economically and environmentally sound

- Reducing emissions in our supply chain by
  - Engaging suppliers in measuring and reporting
  - Collaborating with suppliers to reduce their emissions
  - Working with the IT industry to develop standard protocols for reporting supply chain emissions

- Reducing energy demand in our customers' IT infrastructures by
  - Supplying energy-efficient products
  - Developing innovative approaches to more efficient data center operations
  - Delivering services to help customers implement best strategies

- Reducing global energy demand by
  - Supplying information solutions to optimize business functions, accelerate research, and enhance public infrastructure.

Setting our goals
We began measuring our GHG emissions in 2005. Since then, our energy intensity by revenue—meaning that the amount of GHG we emit per $1M USD we earn—has declined. While we are pleased with this progress, we know that this reduction is not enough, and we must take steps to reduce our absolute emissions—which means the total tonnage of GHG emissions—from our operations worldwide.

Our objective in setting a new goal was to find a trajectory of GHG emissions reduction that:

- allows for business growth
- leverages the learning curve for renewable energy sources
- peaks in absolute emissions before 2015, which is what current science says is required in order to avoid the worst consequences of climate change
- reduces our absolute emissions by 80 percent below estimated 2000 levels by 2050

Therefore, we adopted a trajectory that requires an accelerating reduction in GHG intensity by revenue year over year, which will meet the above objectives. This trajectory led us to our interim goals of a 30 percent reduction in GHG intensity below 2005 levels by 2012, and a 40 percent reduction by 2015. We will be continually monitoring our progress toward our reduction goals, as well as scientific developments that may suggest we should adjust those goals.

Reporting and accountability

We are committed to transparently reporting our progress. We report EMC's GHG emissions annually to the Carbon Disclosure Project (CDP), and have been on the Carbon Disclosure Leadership Index for three consecutive years. In 2009, we were also one of twelve companies recognized by the CDP in its pilot program scoring companies on their actual performance in responding to and reducing their contribution to climate change.

We have made a commitment to the U.S. Environmental Protection Agency's (EPA) Climate Leaders Program to reduce our GHG emissions from U.S. owned and operated facilities by 8 percent. We also participate in the Ireland EPA's Climate Change Programme, where we maintain our emissions at 10 percent below our annual allowance.

Goldman Sachs named EMC as an Adjustment Leader for our effective response to climate change in its 2009 GS Sustain report.

Related materials

• EMC Climate Change Policy Statement

Efficient facilities

Since 1987, energy efficiency has been a priority in our owned and operated facilities. But as our business grows, so does our energy use. The Facilities organization maintains a three-prong approach to managing energy use and associated greenhouse gas emissions from our owned and operated facilities: energy efficiency; collaboration with Engineering and IT; and renewable energy.

Energy efficiency

Energy efficiency is incorporated into new building design, and retro-commissioning programs maintain or increase our facilities' energy performance over time. Energy-efficiency initiatives that EMC has implemented include upgrading lighting systems to energy-efficient fixtures and control systems, and installing free-cooling systems that use external air and water to cool our facilities. In 2009, energy efficiency upgrades in our corporate facilities saved 2.25 million kilowatt hours of electricity use annually.

Our Cork, Ireland facility is certified to I.S. 393, the energy efficiency certification of the Irish EPA. In July 2010, we intend to transition the Cork certification to EN 16001, an energy management standard for Europe. We are also monitoring the draft ISO 50001 global standard for energy efficiency, which is very similar to I.S. 393.

Collaboration with Engineering and IT

The Facilities team works closely with Engineering and IT to manage their energy consumption and set power budgets. Engineers monitor their power use and measure the effect of their energy efficiency initiatives with energy management systems installed in labs and data centers. Our Hopkinton, Massachusetts and Cork, Ireland data centers can also automatically capture and report Power Usage Efficiency (PUE), a standard measurement for energy efficiency in the data center.

›› Read the press release

Award-winning Reporting: EMC among a dozen companies recognized for effective action on climate change.

By the numbers

2,250,000 kWh of electricity was saved in 2009

By the numbers

27,000 tonnes of
GHG emissions avoided by
implementing virtualization,
storage consolidation, and
tiering, and by making
infrastructure improvements

Renewable energy

Energy efficiency alone will not reduce our GHG emissions to meet our goal of an 80 percent reduction by 2050. We have completed our first renewable energy study with high-level recommendations on how to meet our corporate goal of obtaining 50 percent of our electricity from renewable sources by 2040.

Certification and awards

EMC facilities have received the following certifications and awards:

• LEED India for Core & Shell Gold certification for our new Center of Excellence facility in Bangalore, India
• Environmental Steward award for our Apex, North Carolina facility from the Department of Environment and Natural Resources
• I.S. 393 certification for our Cork, Ireland facility

Data centers and IT

EMC is facing the same challenge as our customers—increasing the value of IT infrastructure to the business, while managing relentless digital information growth and the resulting demands on data center power and floor space. We are tackling this challenge in our data centers with our own technology, and are applying and developing best practices for energy-efficient IT.

These IT initiatives were not introduced primarily for environmental reasons—the impetus was to save costs—but as with many of our cost reduction programs the environmental benefit was significant. Our data centers have won several awards for Green IT.

Five year course of energy efficiency

In 2004, the EMC data center management team, Facilities, and Global Services together created a multi-year plan to manage information growth and energy consumption. As a result, between 2005 and 2009 we avoided more than $7.5 million in energy costs through server virtualization, storage consolidation and tiering, and changes to the facility's infrastructure in our Westborough, Massachusetts data center. That translates to more than 27,000 tonnes of greenhouse gas emissions avoided over the same time period—equivalent to taking 1,000 cars off the road each year.

Continued virtualization

The server virtualization process begun in 2004 continues today, and we expect to achieve 100 percent server virtualization in 2010. In 2009 we launched a Virtual Desktop Infrastructure (VDI) pilot to test virtual desktop computers hosted in a data center and securely accessed by employees through a thin client system. VDI will improve information security and client services, and we expect it will increase energy efficiency as well.

Power monitoring

In 2009, we installed Power Usage Efficiency (PUE) monitoring systems in the Cork, Ireland and Hopkinton, Massachusetts data centers. PUE is a standard metric defined by The Green Grid to measure the energy efficiency of data center infrastructure. These systems allow data center managers to consistently monitor their PUE and measure the impact of changes they make.

Purchasing energy-efficient equipment

At EMC we purchase energy-efficient servers, printers, photocopiers, and personal computers for our operations worldwide. We are also an affiliate member of the Climate Savers Computing Initiative, an organization that promotes power efficiency in personal computers.

By the numbers

21 percent reduction in GHG emissions from travel since 2007

"The tools for meeting virtually just keep getting better. And with all their advantages, we are committed to expanding their use globally at EMC."

David Goulden
Executive Vice President and
Chief Financial Officer, EMC

Journey to the Private Cloud

Today, EMC data centers are on the path to a virtual IT infrastructure—what we call the private cloud. Dynamic allocation of server and storage resources in a virtual IT infrastructure strikes the right balance between energy-efficiency and business performance. Our virtual IT infrastructure will include:

• Tiered, shared, virtualized server clusters and storage
• Integrated virtual management solutions
• Virtual desktop infrastructure

State-of-the-art data center

In 2010, we expect to open a new, state-of-the-art, energy-efficient data center in Research Triangle Park, North Carolina. Just as in our legacy data centers, our Global Services organization will help us design and implement the data center, using the best of our own technology. We will use Vblock, the complete building block for a virtual data center offered by the VCE coalition of VMware, Cisco, and EMC. The facility itself will be built to the highest standards of the U.S. Green Building Council LEED certification.

Travel and commuting

Since 2008, EMC has been reducing business travel through our Cost Transformation Program. These efforts have resulted in cost savings and a 21 percent reduction in travel emissions from our 2007 baseline.

We are not yet calculating our GHG emissions from employee commuting. However, we do offer special programs to encourage telecommuting and carpooling to work.

E-conferencing

EMC provides a number of technology options for employees to collaborate more effectively and more often without having to travel. Forty percent of our employees are outside the U.S., operating in more than 60 countries and servicing customers in over 100 countries. Options for e-conferencing at EMC include:

• TeleConferencing, for video and audio transmission
• Web meetings with computer desktop sharing
• Audio conferencing

Corporate fleet

In Europe we are shifting to more energy-efficient models in our fleet of corporate cars available to employees. We are targeting a 15 percent reduction in fuel consumption in the European fleet in 2010, and a 25 percent reduction by 2013 when the policy will be fully implemented.

For our corporate jet travel, we use Bombardier Challenger 300s, a fuel-efficient model for this type of air transport. In 2009, our emissions from corporate jet travel were 28 percent lower than our 2008 baseline. We continually examine our fleet and potential replacement aircraft for increased efficiency, and are looking to reduce emissions by possibly acquiring aircraft targeted to specific travel needs.

Telecommuting

Today more EMC employees are working remotely and/or have flexible work arrangements. The environmental benefits include reduced emissions from commuting and consolidation of facilities that result in more efficient use of space and energy. A new WorkWise program is being rolled out for remote workers in EMC's Massachusetts facilities, and will be extended to other parts of the company in 2010.

Commuting and shuttle programs

Our corporate facilities in the U.S. offer carpool matching programs for employees. Bike racks and showers are available for employees who bike to work. EMC also offers incentives to encourage employees to use public transportation.

In our central Massachusetts facilities, we offer shuttle service between buildings so that employees can attend meetings without driving their cars. Some of these shuttles are hybrid vehicles, further reducing our GHG emissions.

Logistics

The EMC Logistics organization is focused on achieving greater efficiencies in the transport of EMC products, from supply chain through product end-of-life. In 2009, we made major strides in process efficiencies, and as a result, we have reduced transport miles and therefore GHG emissions.

Freight utilization

Consolidating product shipments increases fuel efficiency by reducing miles traveled. EMC's eight Merge-In-Transit centers consolidate product from multiple sources, and bundle customers' orders so fewer trips are made. Conversely, we consolidate product shipments coming back to us through trade-ins or our product take-back program.

In the past year we have made significant improvements to allow for selection of more fuel-efficient methods of transport when appropriate. For example, much of our product now returning to Cork, Ireland from Japan that is not time sensitive is shipped by sea. In addition, EMC has a software system for transportation planning and global availability that optimizes distribution resource planning throughout the supply chain network.

Transportation hubs

In the U.S., we established a transportation hub in Houston, Texas, to stock packaging for our product take-back program closer to customer locations. Previously, all shipments were sent directly to customer sites from the manufacturing centers in Franklin, Massachusetts and Apex, North Carolina. Now the U.S. is divided into three shipping zones, and this packaging is stocked at the three hubs for delivery within the local shipping zone.

SmartWay

EMC is a member of the SmartWay Transport Partnership, a program of the U.S. Environmental Protection Agency that works with freight companies and their customers to reduce environmental impact. SmartWay certifies transport suppliers who are leaders in environmental performance, and as part of our partnership we include SmartWay certification as a factor in transport supplier selection. In 2009, we successfully encouraged one of our major transport suppliers to join the SmartWay program.

Energy-efficient hardware

The electricity consumed by the use of our products constitutes our greatest impact on energy use and climate change. As a producer of hardware and software systems, EMC is constantly working to increase the energy efficiency of all of our products, allowing our customers to deploy the latest in innovative and efficient storage technology.

We take a holistic view of the data center, looking at the energy efficiency of each data center component, and also systemically how the components work together. Here we discuss the energy efficiency of our information storage platforms. For the systemic view, please read "Efficient Data Centers" in this report.

Efficient drives

Digital information is stored on drives. EMC offers a variety of drive types to meet varying needs of capacity, performance, cost, and energy efficiency. Multiple drive types can be used concurrently in a single storage platform. Our software assigns digital information in storage tiers to the "just-right" type of storage to meet performance requirements while maximizing energy efficiency.

Disk drives are used across our storage platforms and come in a range of capacities and rotational speeds. High-capacity/low-speed SATA type drives use less power but have slower performance. Low-capacity/high-speed FC/SAS drives are better for more frequently accessed information. SATA type drives have up to four times the storage capacity of FC/SAS drives, and use up to 96 percent less energy per terabyte of data stored. SATA type drives are available in EMC Celerra®, EMC CLARiiON®, EMC Disk Library, and EMC Symmetrix® systems.

EMC was the first in the industry to use Enterprise Flash, or solid state, drives in enterprise storage. Enterprise Flash drives offer energy efficiency in high-performance computing, using up to 97.7 percent less energy in operations per second than FC/SAS drives, and 38 percent less energy per terabyte of data stored. The energy savings comes from their solid state nature—they do not spin like conventional disk drives—and from the potential to reduce the total number of drives required across an entire system to achieve a customer performance target. They are available in Celerra, CLARiiON, and Symmetrix systems.

The disk spin-down feature stops disks from spinning when they are not being accessed, further reducing energy use. This feature is available in CLARiiON, Celerra, and EMC Disk Library, as well as the Iomega® Compact StorCenter™ ix2-200.

Efficient power and cooling

Beyond drives, there are three other key initiatives to reduce power use in our storage platforms. One is the use of more efficient power supplies, to reduce energy losses as power is delivered to the storage platform. Today, our power supplies typically average above 85 percent efficiency. Our corporate goal is to use power supplies with 90 percent efficiency or greater in all of our enterprise storage platforms.

A second initiative is the incorporation of instrumentation to measure power use and heat generation within the hardware, and capabilities to report that information to users. With this capability, users can monitor and measure the power use of individual storage platforms.

Adaptive cooling saves energy by reducing blower and fan speeds in a storage platform to cool in proportion to the room's ambient temperature. Today, all EMC storage platforms have adaptive cooling in place. In a typical 240 drive array, this saves a customer 480 watts in cooling power in a typical data center environment.

Efficient data centers

EMC's holistic approach treats the data center as a system. It helps organizations improve flexibility, availability, operational cost, and performance through proven practices and industry-leading technologies. These best strategies for data center management also improve overall energy efficiency.

EMC, with the rest of the IT industry, is moving to cloud computing, which holds great promise for energy efficiency in the data center. EMC technologies already deliver significant energy and total-cost-of-ownership savings even before transitioning to the private cloud, including virtualization, deduplication, and Fully Automated Storage Tiering (FAST).

Private Cloud

The private cloud starts with a fully virtualized IT infrastructure, where IT resources are pooled and allocated to applications as needed. It dynamically spans internal and external IT resources, presenting seamless, managed services to the business with the corporate IT team fully in control. In this new model, data centers are still controlled, reliable, secure, and trusted, but also more cost-efficient, dynamic, flexible, and accessible, delivering IT as an on-demand service.

The private cloud is still in early stages of development. However, the promise for data center energy savings is great. In a traditional siloed data center, each application must be provisioned with the maximum resources it will ever need. This waste of energy is reduced in a private cloud through capabilities such as dynamic provisioning of resources, which takes away the need for maximum provisioning. Different applications hit their peak needs for storage, servers, and networks at different times. The private cloud spreads these peak demands across a pool of resources. As a result, less hardware and less energy is needed to serve the data center's aggregate needs.

In 2009, VMware, Cisco, and EMC announced the VCE coalition, which will offer customers a seamless implementation of private cloud infrastructures across servers, networks, and storage. Acadia is the joint venture of these three companies that offers fast delivery of and services for the Vblock, a complete set of building blocks for a virtualized data center. Each of the three companies will also offer their products and services for virtualized data centers independent of the VCE coalition.

At EMC, we are on our own journey to the private cloud, implementing the best of our technologies and services to achieve the efficiency and control of the private cloud. Learn more by visiting "Data Centers and IT" in this section.

Virtualization

Virtualization technologies are a key component of the private cloud, and are seen as a first step on the journey. Server virtualization allows one physical server to host multiple virtual servers, delivering significant energy and hardware savings. Block storage virtualization and file virtualization allow data to be moved to the correct storage tier to meet performance, energy-efficiency, and cost needs.

Deduplication

Deduplication technologies reduce the total volume of digital information, reducing storage and network capacity needed and therefore energy consumed. Deduplication looks for redundancy of sequences of data, and where possible, the first uniquely stored version of a sequence is referenced rather than stored again. In a storage system, this is all hidden from users and applications, so the whole file is readable after having been written. This reduces the total volume of data stored while maintaining user access.

By the numbers

39 tonnes of waste composted in EMC Massachusetts facilities in 2009

Fully Automated Storage Tiering (FAST)

FAST technology automatically moves data to the right tier of storage, optimizing for performance, energy efficiency, and cost. As much as 70 percent of data in tier 1 infrastructures has not been touched in the previous 90 days. FAST software monitors and analyzes the use patterns of digital information, and if necessary moves it to be stored on the right type of drive for the right tier of storage, such as Flash drives for ultra-high performance, or SATA drives for infrequently used information. Assigning digital information to the right tier allows for the most energy-efficient storage.

Material Use and Waste

Facilities recycling and waste

Recycling reduces waste and captures economic value. Responsible disposal prevents harmful materials from entering the natural ecosystem. EMC maintains responsible recycling and waste programs in our owned and operated facilities, and is developing a global waste management strategy.

Recycling

In our Massachusetts, North Carolina, California, and Cork locations, recyclables are removed from the waste stream by our waste management contractors or municipal providers. We also compost cafeteria waste from our Cork, Ireland and various facilities in central Massachusetts and California.

Even more comprehensive programs for waste sorting and disposal exist in our manufacturing operations. Sorting cardboard, wood, plastic, glass, and other materials allows us to get more economic value through reselling to recyclers, as well as reducing waste and making the recycling process more efficient.

It is a challenge to establish a global recycling strategy that incorporates our leased facilities because we do not have operational control. We are investigating the possibility of incorporating recycling requirements in new lease agreements. Also, employees around the world have launched initiatives to reduce paper use and increase recycling.

Office and facilities e-waste

EMC strives to re-use office electronics, to extend their useful life and reduce waste. When electronics reach the end of their useful life at EMC, we send them to our IT Asset Disposal vendors where they are reused or recycled wherever possible.

Hazardous waste

EMC maintains an emphasis on reducing or eliminating the use of hazardous materials. As a result, EMC manufacturing operations generate only small quantities of hazardous waste, as defined by the U.S. and Ireland Environmental Protection Agencies. In 2009, there were no significant spills on EMC property, meaning any spills that occurred were less than 38 liters and were immediately contained and cleaned up onsite.

Water

Although EMC has a relatively small water footprint, we have consistently taken a conscientious approach to conserving this important resource. In our owned and operated facilities, we minimize water use and control wastewater streams, and our manufacturing facilities produce no industrial wastewater. We are evaluating whether to calculate our global water use.

Water conservation
EMC primarily uses water in general building operations, such as for drinking, cooling, and sanitation systems. In our owned and operated facilities we conserve water with low-flow plumbing fixtures.

Wastewater treatment plant
The wastewater treatment plant at EMC headquarters reclaims wastewater and passes it through three treatment and disinfection processes. We reuse more than 15 million liters of this treated "gray" water annually for cooling, sanitation, and irrigation. Unused water is returned to the ground through infiltration systems to replenish local watersheds. In 2010, we plan to increase our water re-use rates by 30 percent.

By the numbers

0 gallons of industrial waste-water from EMC manufacturing

Product material content

Information technology devices contain some hazardous chemicals and heavy metals that can damage ecological and human health. To protect people and the environment, EMC works to minimize use of these substances, and takes measures to prevent them from entering the natural ecosystem.

Complying with regulations
As a global enterprise, environmental compliance is as much about doing the right thing as it is a business necessity. Our customers can be assured that our products comply with environmental regulations for hazardous material content and safe product disposal, including RoHS, WEEE, China RoHS, and REACH, and other national, regional, and local regulations.

As global concern about the environment grows, there are more regulations on IT products, and more is being discovered about the impact of certain substances. Our International Environmental Regulatory Committee monitors the development of environmental regulations and industry standards that apply to our products. The goal is not mere compliance, but proactively addressing issues of electronic waste, packaging, transportation, and material content.

Design for Environment
Our Design for Environment (DfE) program incorporates environmental considerations throughout product design. The EMC engineers take what we have learned about the environmental impact of existing product designs and use that knowledge to implement best practices for ongoing design.

Finding alternatives
To eliminate environmentally sensitive materials in our products, viable alternatives must be found. When we believe that a material is of concern we take the precautionary approach by exploring alternatives that are safer for ecological and human health.

By the numbers

100 percent of new products use lead-free solder

Our Material Sciences Lab collaborates across industry and academia to identify and qualify alternatives that meet the same or higher levels of reliability, cost-effectiveness, performance and availability than the materials we currently use. When a suitable alternative for a material is found, we eliminate or reduce use of the material of concern where technically and economically feasible, even if use of that original material is permitted by law.

Alternatives for BFRs

In 2009 we publicly stated our goal to reduce brominated flame retardants (BFRs) in our products by 50 percent by 2010. Most of our use of BFRs is in printed circuit boards (PCBs), an essential component of EMC's storage systems.

EMC, in collaboration with our suppliers, conducted extensive research and testing in 2009 to identify an alternative for BFRs. Our evaluation determined that a suitable material is available that meets EMC's and our customers' rigorous requirements for product performance. Key challenges in identifying an alternative were availability and continuity of supply, cost viability, and long-term reliability of the current alternatives.

In 2010 EMC will focus on completing development and implementation of the selected alternative halogen-free flame retardant. Although we are taking steps towards implementation, we will not meet the originally stated target of an absolute reduction of BFRs in all generally available products by 50 percent, through our focused efforts we expect to be able to achieve a 50 percent reduction (by weight) in the use of BFRs in all PCBs newly designed in 2010. Today we are working with our suppliers to formulate and test the new BFR substitute which will lead to the widespread implementation of the replacement material within the supply base.

Alternatives for PVCs

Just as with BFRs, in 2009 we publicly stated a goal to reduce polyvinyl chlorides (PVCs) in our products by 50 percent in 2010, should viable alternatives become available. PVCs are used in cable jacketing in our enterprise storage platforms.

Also as with BFRs, we proactively collaborated with suppliers to identify and test alternative materials. In 2009, we qualified an alternative to PVCs that would work in almost all of the cables that we use. EMC is among the first companies to qualify this alternative substance and take steps toward implementation in new product design. However, as a result of low industry demand, there are challenges of cost and continuity of supply. Therefore, our 2010 goal is at risk, but we continue to work with our suppliers to develop a transition plan.

Batteries

We also continue to assess lithium-ion batteries as a substitute for lead-acid batteries in our storage platforms.

Related materials

- EMC Declaration Regarding REACH
- EMC Declaration Regarding Waste Battery and Accumulator Compliance
- RSA Statement on Safe Use and Disposal of RSA Tokens

›› Read the profile

The Science of Sustainability: Rich Murphy's quest for environmentally friendly substances.

Packaging

When it comes to packaging, our goal is to minimize environmental impact without compromising product protection. We continuously evaluate our packaging and make improvements in material composition, weight, and waste stream.

Material selection

In 2009 we conducted a baseline survey of our packaging and identified materials of the highest environmental concern. We are eliminating those materials where substitutions exist.

Our packaging is free of polyvinyl chlorides (PVCs) and polystyrenes, which pose health risks to humans and other animals. We are currently evaluating substitutions for polyethylene and polyurethane foam, which have hazardous by-products.

Our shipping pallet suppliers purchase the majority of their wood from sources certified by the Forest Stewardship Council and Sustainable Forestry Initiative. We treat the wood to ISPM 15 standards, which prevents invasive pest infestations without using harsh chemicals.

Packaging efficiency

Working with our suppliers, we are developing reusable packaging to reduce material use and waste. For example, in 2009 we initiated a reusable crate for our suppliers to ship storage platform cabinet doors and platforms. This new design also fits 50 percent more product in the same space, allowing for a one-third reduction in trucking to transport these cabinet components.

Additionally, we are designing more efficient, single-use packaging to decrease packaging weight and increase product density, which in turn reduces fuel consumption in transport and associated greenhouse gas emissions. For example, in 2009, we implemented higher density packaging for director boards shipped to us by our suppliers. This new design uses 50 percent less corrugated cardboard and polyethylene foam, and eliminated polyurethane foam in this product package.

In 2009 we implemented a collapsible, reusable package for product returned by customers for trade-in and in our product take-back program. These packaging kits are 70 percent smaller than the non-collapsible packaging previously used, reducing associated shipments by 65 percent, thereby eliminating over 44,000 miles of truck transport annually. We are now exploring use of this design for new product shipments as well.

Returnable packaging for customers

Returnable packaging reduces waste for our customers. Our Returnable Packaging Program identifies opportunities for EMC to reclaim and re-use product packaging. One new returnable, reusable packaging design for large orders of new drives eliminates material disposal at customer sites, saving more than 13,000 kg of waste annually over the previous non-returnable packaging.
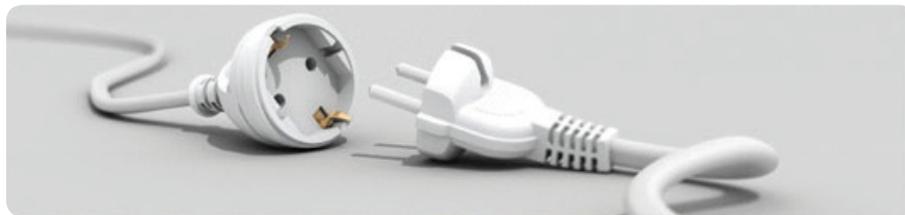
<div style="background:green;">

By the numbers

13,000 kilograms of waste was eliminated with one new design

</div>

Product end-of-life

Our customers and communities expect EMC to be diligent about environmentally responsible handling of our products when they reach the end of their useful lives. We incorporate end-of-life consideration in the design process, and have a program to dispose of our products responsibly when their useful time at a customer site has ended.

Design for disassembly
The easier a product is to take apart, the easier it is to reclaim, recycle, and responsibly dispose of it. This not only reduces waste, but recaptures value as elements of a product are more easily recycled or reused.

EMC products are designed so they can be disassembled easily and in such a way as to maximize the value of recyclable materials. End-of-life considerations such as designing for simplicity, improved disassembly sequencing, and easy component recovery have been institutionalized as part of our standard design process.

Product takeback
Customers worldwide who trade in or return EMC products can be assured that we recycle and dispose of the products securely and responsibly. Products are disassembled, and disk drives that hold data are electronically erased. Approximately one third of the component material by weight is re-processed at our manufacturing facilities. Our ITAD vendors responsibly recycle or resell almost two thirds of the material, and send less than 5 percent to waste-to-energy or landfill. Disk drives that are recycled are physically shredded prior to recycling as an added security precaution.

In 2009 we launched a workstream to examine the current product takeback and eWaste disposal program. In 2010 we are focusing on harmonizing practices across our disparate businesses.

Collaboration and Engagement

Employee engagement

To advance our journey toward environmental sustainability, we need the engagement of the more than 40,000 people who work at EMC every day. Our people are the best source of innovative ideas and our ambassadors to customers. We also recognize that environmental awareness and engagement makes EMC a more desirable place to work.

Our employees can get involved through their business function, engage in a program local to their country, or contribute as individuals. Although it is challenging to baseline and measure results, it is very exciting to unleash employees' talent and innovation on our environmental endeavors.

By the numbers

Less than 1 percent of our takeback product goes to landfill

"From the bottom up, the top down, and the middle across, we are evolving into a true global community that is focused on safeguarding the environment."

Kathrin Winkler
VP and Chief Sustainability
Officer, EMC

Environmental sustainability innovation award

EMC's annual Innovation Conference harnesses the collective power of our people's ideas to shape EMC's future offerings. In 2009, the first Sustainability Awards recognized two ideas at the Innovation Conference—one for a tool to measure and improve data center energy consumption, and another for a system that monitors an enterprise's carbon footprint by tracking and analyzing energy-related events.

Global Product Operations green initiative

EMC's Global Product Operations (GPO) organization launched a green initiative to reduce the environmental impact of their operations. By the end of 2009, the GPO had reduced paper use by more than 35 percent and cut energy use by more than 2 million kilowatt hours. Global Supply Chain Management and Logistics also launched formal programs to reduce environmental impact. To learn more about those programs, visit the Supply Chain and Logistics sections on this website.

Green Champions

The Office of Sustainability's Green Champions Program is connecting employee environmental advocates from around the world to share ideas and best practices. Among the initiatives of these local groups are:

- EMC Japan's five locations encourage actions to reduce power use, including turning off lights and computers at the end of the day, and turning down air conditioning
- EMC India's Center of Excellence maintains initiatives to reduce energy use in labs, and reduce paper and power use in offices
- EMC Australia and New Zealand launched an "e-team" to baseline greenhouse gas emissions, set targets for reduction, and track progress against targets
- EMC Israel implemented recycling programs and best practices for energy efficiency in their lab spaces

The Office of Sustainability also piloted an online tool to help communicate and drive Green Champions' initiatives. The tool will be rolled out company-wide in 2010.

Industry standards

Transforming the IT industry requires unprecedented collaboration among partners and competitors, and across all sectors, to dramatically reduce the direct and indirect impacts of IT products. Products from EMC and our peers run on common underlying hardware technology. Most importantly, maximum energy efficiency in the data center can be achieved only by looking at it as a holistic system.

Consortium memberships

EMC engineers, public policy experts, and sustainability professionals actively participate in the industry consortia that are helping to set the roadmap for the future. Our memberships include:

- The Green Grid, a global consortium of companies dedicated to advancing energy-efficient data centers. EMC's Vice President of Corporate Sustainability is a Director of The Green Grid.
- Storage Networking Industry Association (SNIA), which develops standards and educates on best practices in energy efficiency in the data center. EMC's Senior Technologist for the Office of the Chief Technology Officer is the Chairman of the Board of Directors.
- Distributed Management Task Force (DMTF), which defines protocols for measurement and management of energy efficiency. EMC's Senior Technologist for the Office of the Chief Technology Officer is a member of the Board of Directors.

Energy-efficient storage standards

Governments and industry groups are working together to set effective standards and metrics for energy-efficient hardware and software. In 2009, our participation included:

• Leading The Green Grid's task force working with the U.S. Environmental Protection Agency (EPA) to define ENERGY STAR® standards for Data Center Storage
• Active leadership to define SNIA's methodology to measure energy use by storage systems, and develop a taxonomy of information storage which was adopted by the U.S. EPA to help define energy efficiency standards. The effort included the support of EMC engineers who measured EMC systems and shared the results with the SNIA and the EPA.

Collaborating on best practices for data centers

By skillfully using storage, servers, software, and networks together, IT organizations can manage and store more information using less energy. It is a complicated business, however, and creating and disseminating best practices for efficient data center operations helps bring the entire industry along. EMC participates in the following:

• Contributing to The Green Grid's development of best practices, studies, and energy efficiency indicators for data centers
• Endorsing the European Commission Code of Conduct on Data Centres Energy Efficiency and contributing to its Best Practices for storage
• Working with Sustainable Energy Ireland to set energy-efficiency criteria for enterprise storage

Working for global change

Improving our performance

We must do our best in our own operations to be a credible and useful partner in global collaboration on environmental sustainability. Reporting our performance to NGOs and governments, being held accountable for our impact, and learning from experts, we are working to improve our environmental performance and reduce our operational impact. Our partnerships include:

• Ceres Corporate Network member
• U.S. Environmental Protection Agency Climate Leaders Program
• Ireland Environmental Protection Agency Climate Change Programme
• Carbon Disclosure Project
• U.S. EPA SmartWay

Supply chain collaboration

We are sponsoring and engaging in the World Resource Institute's Greenhouse Gas Protocol and Supply Chain Initiative, which is setting product lifecycle accounting standards and corporate value chain accounting guidelines. EMC participates in technical working groups that assist and inform the process of the protocol development. We submitted our input in the initial draft protocol released in 2009, to help shape a practical proposal in 2010.

We are also an active member of the Electronics Industry Citizenship Coalition (EICC), which works to improve labor and environmental conditions in the electronics supply chain. We participate on a number of EICC working groups, including the Tantalum Working Group which is developing a methodology for ethical sourcing of materials from Democratic Republic of Congo.

Low-carbon economic prosperity

Information technology has enormous potential to change the way people work and live, and to support a sustainable future. We participate in the World Economic Forum's Task Force on Low-Carbon Economic Prosperity, which generated recommendations for practical policies and incentives that will drive economic growth and contain GHG emissions.

The Task Force produced recommendations for policy-makers attending the United Nations Climate Change Conference 2009 held in Copenhagen. The recommendations cover energy efficiency, technology development, investment in developing countries, common standards and metrics, deforestation avoidance, market mechanisms, and adaptation to a changing climate.

Leveraging IT for broad energy efficiency

Information and communications technologies (ICT) can contribute to dramatic reduction of GHG emissions by increasing efficiency across the economy. The Digital Energy Solutions Campaign (DESC) promotes the innovative and effective use of ICT as an essential tool in managing climate change issues. EMC is a member of this organization of ICT companies, trade associations and non-governmental organizations, and is a contributor to their work of recommending policy and communicating the role of ICT in a low-carbon economy.

Supply Chain

EMC's Global Supply Chain Management organization is committed to establishing and maintaining a world-class supply network in a competitive landscape. Environmentally and socially responsible supply chain management is central to this commitment.

• Supply Chain Responsibility

• Supply Chain Emissions

• Supplier Diversity

• Supply Chain Security

Supply Chain Responsibility

EMC works closely with our suppliers and industry peers to advance social and environmental responsibility in the supply chain.

With suppliers, we communicate our standards, examine their programs and performance, and engage with them at events and special education programs.

We believe that it is important to collaborate with key stakeholders to implement industry standard best practices for supply chain social and environmental responsibility. As a member of the Electronics Industry Citizenship Coalition (EICC), we work with our peers to improve efficiency and social responsibility in our interconnected global supply chain.

Supplier Code of Conduct

EMC's Supplier Code of Conduct sets the minimum levels of behavior as a condition to do business with EMC. Adapted from the EICC's code of conduct, our Code includes guidance on environmental and social responsibility, such as:

• Employee health and safety
• Discrimination and harassment
• Environmental management

EMC asks all Tier 1 direct suppliers to acknowledge our Supplier Code of Conduct (Tier 1 direct suppliers sell EMC materials used in our products). In 2009, suppliers representing 98 percent of EMC's Tier 1 direct supplier spend acknowledged the Code. In 2010, we expect to have 100 percent of our Tier 1 direct suppliers acknowledge the Code.

Supplier self-assessments

We ask our suppliers to report their performance against key social, environmental, and health and safety measures by completing self-assessment questionnaires (SAQs). This gives us increased visibility into their practices. We use the EICC's SAQ which is available through an online tool called E-TASC.

100 percent of the suppliers who complete the SAQs receive detailed feedback from EMC on their performance. We collaborate with suppliers on specific areas of improvement and recognize the areas where they demonstrate exceptional performance. When suppliers score poorly overall or on certain "critical questions" we request remediation and corrective action plans. "Critical questions" are those designated as the most significant indicators of risk by the EICC and the Global e-Sustainability Initiative (GeSI), an organization focused on advancing sustainability in the Information and Communications Technology industry.

Overall, the majority of EMC's suppliers scored well on the self-assessment questionnaires (SAQs) in 2009, indicating that they have satisfactory systems in place to manage labor, ethics, health and safety, and the environment. The SAQs have two levels: the corporate level and the facility level. The corporate SAQ covers the entire corporation and addresses corporate-wide policies, procedures, and management systems. The facility SAQ focuses on specific manufacturing facilities and contains more targeted questions related to each facility's labor, ethics, health and safety, and environmental practices. If a supplier receives a low score on either the corporate or the facility SAQ, we require a

corrective action plan. We specify the timeframe within which we expect the supplier to complete its plan, and we will monitor its progress until the issues are resolved.

- Suppliers representing over two-thirds of Tier 1 direct spend achieved an 85 percent or higher score on either the corporate or facility SAQ.
- Suppliers representing 12 percent of our Tier 1 direct spend were asked for corrective action plans at the corporate or the facility level.

In 2010 we will be focused on continuing to drive participation from our suppliers in reporting their performance and will also ensure that suppliers who score poorly on the "critical questions" demonstrate improved performance.

Audits and education

Each year EMC performs onsite audits of key strategic suppliers. Along with many other factors, low performance on the SAQ can be a key indicator to driving an onsite audit.

Audits are performed by a qualified, third-party professional auditing firm. The audit questions assess compliance with EMC's Supplier Code of Conduct and international and local laws, standards, and regulations in the following areas:

- Labor
- Ethics
- Labor and Ethics Management Systems
- Health and Safety
- Environment
- Environment, Health and Safety Management Systems

Our audit scheme includes:

- Management interview and documents review
- EHS facility inspection, interview, and documents review
- Worker interviews
- Inspection of workers' living quarters (dormitories or hostels), if applicable

In addition to conducting third party audits, EMC participates in the EICC pilot Validated Audit Program (VAP). The VAP is a collaborative effort of EICC and GeSI that was developed and launched in 2009. Because many of our peers use the same suppliers as we do, the VAP ensures consistency, quality, and high standards in a common audit process.

EMC also considers Hazardous Materials practices when evaluating suppliers. EMC stresses full traceability of all processes and equipment used as a condition to be able to build product for EMC. Non-conformities are addressed by EMC and the supplier to ensure issues are corrected and closed.

Supplier collaboration

We take multiple opportunities to educate our supply base. Our annual Supplier Day agenda includes social and environmental program messaging and reviews. We encourage our suppliers to access online training available through the EICC, and in China, suppliers are invited by EMC to participate in regional EICC meetings focused on local issues.

Sourcing of minerals

EMC is committed to the ethical sourcing of minerals used in our products. The global supply chain for these minerals is complex. While we believe that it is currently not possible to trace certain minerals to their mine of origin reliably, we are taking steps to improve and systematically address this critical issue in the global supply chain.

We are members of the EICC Extractives workgroup—a collaboration of experts, NGOs, governments, academics, and others—which seeks to increase transparency and positively influence the social and environmental conditions in the metals extractives supply chain. The workgroup is currently developing responsible solutions for sourcing minerals mined in the eastern Democratic Republic of Congo (DRC). The minerals of concern include tantalum (Ta), tin (Sn), tungsten (W) and gold (Au), which are commonly used in electronics. EMC is also providing funding to the ITRI Tin Supply Chain Initiative that has launched a pilot project to track the origin of tin and tantalum in the DRC. In addition, we have asked our suppliers to provide assurances regarding their sources of tantalum in the DRC.

Related materials

• EMC Supplier Code of Conduct

Supply Chain Emissions

Accounting for our suppliers' greenhouse gas (GHG) emissions is essential to understanding the environmental impact of our supply chain. We are asking key suppliers, who represent a majority of our Tier 1 direct spend, to calculate and report their scope 1 (direct) and scope 2 (indirect) emissions as well as their reduction targets and performance.

Gathering data

In 2009, we began collecting GHG emissions data from key Tier 1 direct suppliers. Suppliers constituting approximately 80 percent of Tier 1 direct spend reported their 2008 GHG emissions data in 2009. Many of them reported strong climate change initiatives and have set GHG reduction targets. This data was collected through the EICC's online carbon reporting tool as well as through the Carbon Disclosure Project's Supply Chain initiative.

Challenges and lessons learned

In the first year of our program we saw a wide variation in data quality and completeness. While many suppliers demonstrated a high level of sophistication in GHG emissions reporting, others were still developing internal accounting processes and reported only partial data. Accordingly, because of the inconsistent quality of reporting, we are not currently publishing the aggregate emissions data.

Another challenge is that suppliers are not able to allocate a portion of their emissions to the products they built for EMC. While there are strategies to estimate our portion of the emissions from Tier 1 suppliers, we believe it would present an inaccurate picture to report such amounts until a credible and feasible methodology emerges as an industry best practice.

Refining methodologies and tracking performance

EMC works with our peers in the Electronics Industry Citizenship Coalition (EICC) workgroup to address past reporting challenges and streamline the GHG request and reporting process for our suppliers. EMC also participates in the World Resources Institute's GHG Protocol Initiative workgroups, where we work alongside businesses, NGOs, and experts on a protocol for measuring emissions from the product lifecycle and supply chain. We had input in the initial draft protocol released in 2009 through the Stakeholder Advisory Group, and hope to help shape a practical proposal in 2010.

Supplier Diversity

Supplier diversity broadens our supply base, expands opportunity for historically disadvantaged people, and builds economic strength in our communities. Our Supplier Diversity Program promotes diverse suppliers' participation in EMC contracting and procurement.

Outreach and education

Strategic outreach to diverse suppliers is the first step in broadening our supply base. Educating our purchasing personnel in best practices is an essential second step. Our program activities include:

• Participating in workshops, seminars, and trade fairs geared for diverse suppliers
• Quarterly training programs for EMC purchasing personnel
• Maintaining lists of prospective diverse suppliers for EMC buyers

Membership in key organizations gives us greater access to diverse suppliers. EMC's Office of Global Workforce Inclusion is a key internal partner in this work, helping us to manage and make the best use of our relationships with these organizations. EMC maintains memberships in:

• National Minority Supplier Development Council
• Women's Business Enterprise National Council

Goals and measurement

We set goals and assess performance regularly. We measure and track activity with certified Minority/Women-owned Business Enterprises and federally defined small businesses. We report to the U.S. Federal government in compliance with regulations. Although this report is confidential, quarterly excerpts of EMC's Small Business Subcontracting performance report are made available upon request.

In 2009 we successfully implemented our Small Business Subcontracting plan to increase contracts with small businesses and diverse suppliers. Our plan for 2010 has been approved by the U.S. Federal government.

Supply Chain Security

Business Continuity Planning

Our Business Continuity Planning (BCP) program ensures that the global supply chain is resilient, prepared and has strategies in place to adjust to disruptions and achieve continuous operation. This program assesses the business continuity preparedness levels of our suppliers, develops strategies for mitigation planning and implements the procedures necessary to recover in the event of a disruption.

Security certifications

To sustain our global business, EMC must rely on secure and timely transport of international supply chain shipments. At the same time, government officials around the world are working to improve their border security. We work with governments to attain certifications for our supply chain security programs. This certification gives us faster, simpler processing for our shipments coming through Customs Inspection, and helps government officials with securing their harbors and borders.

Our manufacturing facilities are based in the U.S. and Ireland, so our supply chain security certifications are especially important there. In the U.S., EMC is validated by the Customs Trade Partnership Against Terrorism (C-TPAT). We also work with C-TPAT to share best practices and cooperatively develop solutions to address potential vulnerabilities in shipments coming into the U.S.

The European Union Commission established the Authorized Economic Operator (AEO) certification for supply chain security. EMC Ireland received AEO certification in October 2009.

Governance and Integrity

At EMC, governance and integrity involves many actions, such as under-standing our customers, setting clear goals and priorities, having a well-informed, fully engaged Board of Directors, developing new leaders, building a culture that supports employees, operating with integrity, and being transparent and accountable to our stakeholders.

- Corporate Governance

- Stakeholder Engagement

- Ethics

- Information Privacy

- Organization Memberships

Corporate Governance

Strong corporate governance practices are essential to our company's sustained and profitable growth.

Governance structure

We recognize that corporate governance is only as strong as the board of directors behind it. At EMC, we are fortunate to have a highly experienced, well-informed, and fully engaged board.

EMC currently has 11 board members, nine of whom are independent (as defined in our Categorical Standards of independence and the listing standards of the New York Stock Exchange). All the members of the board's Audit, Corporate Governance and Nominating, and Leadership and Compensation Committees are independent. We require each board member to stand for election annually, and have adopted a majority vote standard for the election of directors. This gives our shareholders the opportunity to register their views each year on the performance of the board overall and of each individual member.

Our Bylaws and Corporate Governance Guidelines permit the roles of Chairman and CEO to be filled by the same or different individuals. This allows the Board flexibility to determine whether the two roles should be combined or separated, based on our needs and the Board's assessment of its leadership from time to time.

The Board believes that EMC and its shareholders are best served at this time by having a combined Chairman and CEO, together with an independent lead director. Combining the roles of Chairman and CEO makes clear that we have a single leader who is directly accountable to the Board, and through the Board, to our shareholders; establishes one voice who speaks for the Company; reinforces the CEO's overall responsibility for the Company's business and strategy, under the oversight and subject to the review of the Board; and strengthens the Board's decision-making process.

Our Corporate Governance Guidelines provide that if the Chairman is not an "independent director," then the independent directors will select a lead director. The lead director is an integral part of the Board's structure and a critical contributor to effective corporate governance. We have had a lead director since January 2006.

The lead director has significant responsibilities which include acting as a liaison between the independent directors and the Chairman; facilitating discussions among the independent directors on key issues and concerns outside of Board meetings; having the authority to call meetings of the independent directors; working with the Chairman to set the agenda for Board meetings; working with the Leadership and Compensation Committee to approve CEO goals, evaluate CEO performance, set CEO compensation levels and review CEO succession planning; working with the Corporate Governance and Nominating Committee to make recommendations to the Board regarding committee members and chairs and oversee the performance evaluations of the Board, each applicable committee, and the individual directors; and presiding at executive sessions of the "non-management" board members.

The active involvement of the independent directors, combined with the qualifications and significant responsibilities of our independent lead director, provide balance on the Board and promote strong, independent oversight of EMC's management and affairs.

Corporate Governance Guidelines

Our Corporate Governance Guidelines provide the framework for the effective governance of EMC. Topics addressed in the Corporate Governance Guidelines include board member criteria and director responsibilities, lead director responsibilities, management-succession planning, selection and evaluation of the CEO, director compensation, and assessment of board performance.

Sustainability oversight

The Corporate Governance and Nominating Committee is responsible for overseeing EMC's sustainability program. We believe that integrating environmental, social, and financial considerations in our business strategy and decisions is integral to growing the success of EMC, and benefits our shareholders, employees, customers, suppliers, and communities.

Contacting the board

EMC's board has made it easy for investors and other stakeholders to communicate directly with our Audit Committee, Leadership and Compensation Committee, and Non-Management Directors. Instructions may be found at "Contact the Board" on this website.

Related materials

• 2010 Proxy Statement

Stakeholder Engagement

We believe in dialogue and engagement with our stakeholders as an effective and productive approach to building their trust in the decisions our management makes and in the overall direction our business is heading. For many years now, EMC has been talking with stakeholders and soliciting their input, including engaging with employees, customers and shareholders.

Employee communications

Executives speak directly to all employees at quarterly meetings, where they report on the company's performance and strategy, and answer employee questions. Another essential form of receiving employee feedback is the Employee Satisfaction Measurement Survey (ESMS), where employees anonymously complete a questionnaire about the work environment at EMC.

In the 2009 ESMS survey, in which 92 percent of our employees participated, EMC scored as well or better on 24 out of 26 areas where external benchmark comparisons to the Information Technology Survey Group are available. Among these positive indicators were employees' high rates of engagement (86 percent) and satisfaction (83 percent) in their work.

The ESMS survey also showed that employees would like to see even more opportunities for professional growth and career development at EMC. In response to this, we are implementing an easy-to-use internal resume system in 2010, and encouraging managers and employees to see the value of cross-functional moves. We are also rolling out a global Reward and Recognition program, through which employees can nominate colleagues for extra financial award in appreciation of outstanding effort.

Customer feedback

EMC's Total Customer Experience (TCE) is a company-wide commitment to exceed customer expectations for quality, service, innovation, and interaction. We listen via an extensive "voice of the customer" survey process that evaluates the entire EMC relationship. We establish initiatives in areas that our customers have identified as most impactful to them. And we deliver results through a disciplined process for continuous improvement that is tied to specific metrics and targets.

To drive the importance of TCE at EMC, an annual TCE Excellence Award is presented to an individual or team who most demonstrates EMC's commitment to the Total Customer Experience. The 2009 winner was the Global Field Optimization team. Multiple customers had voiced concerns over time about EMC service delivery, and it was clear significant changes were needed. The Global Field Optimization team created a systemic approach to scheduling our Customer Engineers' time with customers to provide a higher value service and increase EMC productivity. The team:

- provided a centralized scheduling and dispatch function
- changed the way Customer Engineers are assigned to jobs
- introduced a new system of key performance indicators
- collapsed the segmented workforce into a larger, common pool of resources

The TCE program also leverages EMC's annual Innovation Conference, where we harness the collective power of our employees' talents to help shape EMC's future offerings. At the 2009 Innovation Conference, we offered the TCE award to a project called "The Virtual Customer Experience." This project focused on solving a significant customer pain point: support that crosses EMC product lines. Their proposal will enable more responsive customer support, using technology to improve Global Solution Support collaboration.

Our Customer Council program is EMC's research program designed to gather customer feedback on our products, services, and solutions. Since its launch in 1993, the Customer Council has served as an important sounding board for EMC, helping us set our roadmap and business strategy.

Shareholder engagement

EMC maintains multiple avenues of engagement with our shareholders. We have a robust communication program that includes an annual outreach to our large institutional investors. We speak with other shareholders throughout the year about various topics, including corporate governance, executive compensation, and other matters. Through this dialogue, shareholders have provided specific feedback and input on matters of mutual interest. We regularly update the Board of Directors on our interactions with shareholders.

In order to build constructive, informed relationships with shareholders and encourage transparency and accountability, directors also dialogue with shareholders from time to time. In the past, members of the Board have discussed a variety of topics with shareholders, including executive compensation, board leadership structure, sustainability and other governance topics. The Board values open communication with shareholders.

We believe that the exchange of information accomplished through our dialogue with shareholders has been very valuable to shareholders, management, and the Board of Directors.

Developing our program

In 2009, EMC joined Ceres, a leading network of investors, environmental groups and other public interest organizations working with companies to address sustainability challenges. In 2010 we will work with Ceres to develop a broader stakeholder engagement program.

Ethics

Ethical conduct builds relationships of trust with customers, partners, shareholders, communities, and other stakeholders. EMC's corporate compliance program drives employee awareness of ethical standards, and requires investigation of potential breaches. The Audit Committee of the Board of Directors oversees the corporate compliance program.

Business Conduct Guidelines

The centerpiece of the corporate compliance program is our Business Conduct Guidelines. Topics addressed in the Guidelines include:

• Acting with integrity
• Obeying the law and EMC policies
• Protecting EMC's confidential information
• Maintaining accurate and honest records and reporting
• Avoiding conflicts of interest

The Business Conduct Guidelines were created in 1999, and have been reviewed annually thereafter. In 2009 we added three new language translations for our Business Conduct Guidelines, to be more accessible to our employees worldwide. The guidelines are now available in Chinese, French, German, Hebrew, Italian, Japanese, Korean, Polish, Portuguese, Russian, and Spanish.

Employee training

All new hires are required to complete corporate compliance training. This training covers the Business Conduct Guidelines, as well as anti-harassment, insider trading, and anti-trust policies. We also offer additional training to existing employees as needed for their particular organization or geographic region.

Investigations

EMC takes seriously any communication about potential ethical breaches. There are multiple avenues for employees to raise concerns, and in 2009 we added a secure, confidential website in addition to the existing confidential hotline. Suspicions of a violation of laws, regulations, Business Conduct Guidelines, or EMC policies can be reported in the following ways:

• Contact the Office of the General Counsel by telephone (508-435-1000, extension 77267), facsimile (508-497-8079), or e-mail (General_Counsel@EMC.com).
• Contact EMC's hotline by telephone (877-764-0557) or via a secure web report at https://emccorporation.alertline.com.
• Contact the Audit Committee of the Board of Directors by e-mail (AuditCommitteeChairman@emc.com) or by mail (Alertline, PMB 3767, 13950 Ballantyne Corporate Place, Charlotte, NC 28277).

Related materials

• Business Conduct Guidelines
• Political Contributions Policy
• Political Contributions Disclosure Statement: Six Months Ended June 30, 2009
• Political Contributions Disclosure Statement: Six Months Ended December 31, 2009

By the numbers

100 percent of new hires required to do ethics training

Information Privacy

The approach we take to information security is straightforward: use appropriate administrative, technical, and physical measures to protect personal and confidential information. Our goal is to protect innovation and collaboration within our company, and secure confidential and personal information shared with us by our customers and partners. This is core to sustaining EMC's assets and preserving the trust of our customers.

We look at the security components at each point in our value chain, assess the vulnerabilities, and then implement solutions that advance overall business results. Our internal Board of Directors, which includes senior management, meets periodically to review and approve our information security strategy, which is delivered by our Global Security Organization (GSO).

R&D for security solutions

EMC's IT Proven Program is a test bed for EMC technologies in our IT operations. The GSO is implementing EMC security solutions across the enterprise, tackling the same problems that our customers face in their organizations. In so doing, we can test our own products, demonstrate their effectiveness in an enterprise, provide realistic feedback on their performance, and drive future product innovation.

The GSO even builds prototypes of new security solutions for the company to sell. For example, the GSO developed a Secure Management Infrastructure, using VMware®, Cisco, and RSA® technology to create a security management portal to manage our data centers.

Integrating security across the enterprise

In 2009, a key initiative was launched to advance the integration of information security incident management across EMC. We opened the Critical Incident Response Center (CIRC), which consolidates all information security incident management cases into our Critical Incident Response team with locations in Bedford, MA and Bangalore, India. This centralized management ensures more efficient and effective resolution.

Supply chain security

One component of EMC's security strategy is to ensure our ability to securely design, implement, deliver, and service our products. The GSO, in conjunction with the EMC Product Security Office (PSO), manages risk across the full supply chain. This includes credentialing, secure product design, the product development lifecycle, the protection of intellectual property, and our support and service delivery capabilities.

Customer Security Management Office

EMC's Customer Security Management Office (CSMO) is an intermediary between customers and the EMC business units that access customer information. The CSMO takes requests and suggestions from customers on the protection of their information, and works directly with EMC departments—from IT and product development, to customer service and finance—to continuously improve internal operations with the goal of meeting or exceeding industry best practices.

ISO 27001 certification

EMC's security program is based on the ISO 27001 standard for security management systems. We also seek ISO 27001 certification for select business units as the business need arises. In 2009 we received ISO 27001 certification for nine business units in four countries, including all of our RSA data centers servicing the RSA Identity Protection and Verification products.

Employee training and credentialing

EMC employees and contractors must complete annual security training sessions relating to protection of confidential and personal information. Employees who work on customer sites, including sales force members and field engineers, must undergo additional annual training. Our credentialing program makes a consistent, world-wide practice of conducting background checks for EMC employees to ensure they are not a risk to the company or our customers. As of December 2009, 100 percent of employees are credentialed.

Employee and contractor information

Just as we do for our customers, EMC protects the confidential and personal information of our employees and contractors. We use personal information for a variety of human resources programs and other functions related to employment. Beyond the necessary uses for business purposes, we do not share employees' personal information with third parties, except as otherwise permitted or required by applicable laws or regulations.

Security in a changing world

An ongoing challenge for our GSO is implementing security for new, rapidly changing technologies. As our company grows, we are becoming a hyper-extended enterprise, sharing information with more people, using more technology tools across more geographies than ever before. However, our strong information security strategy and practices are preparing us well for this challenge.

Organization Memberships

EMC is a member of various industry associations and advocacy organizations, including the following:

Business Roundtable (BRT)
An invitation-only association limited to CEOs of leading US corporations, which focuses on issues such as education reform, the economy, healthcare, and corporate governance. EMC's Chairman, President and CEO is a member.

Ceres
A network of investors, environmental groups, and other public interest organizations working with companies to address sustainability challenges. EMC is a member of the Ceres Corporate Network of companies that endeavor to make continuous strides in improving their sustainability performance and reporting practices, and engage with investors, environmental groups, and other stakeholders.

Digital Energy Solutions Campaign (DESC)
An organization of information and communications technology (ICT) companies, trade associations, and non-governmental organizations promoting the innovative and effective use of ICT as an essential tool in managing climate change issues. EMC is a member and contributor to their work.

Distributed Management Task Force (DMTF)
An Information Technology (IT) industry organization which defines protocols for measurement and management of energy efficiency in IT. EMC's Senior Technologist for the Office of the Chief Technology Officer is a member of the Board of Directors.

Electronics Industry Citizenship Coalition (EICC)
An organization of ICT companies which works to improve labor and environmental conditions in the electronics supply chain. EMC is a member and participates in a number of their working groups.

Healthcare Information and Management Systems Society (HIMSS)

A comprehensive healthcare-stakeholder membership organization exclusively focused on providing global leadership for the optimal use of IT and management systems for the betterment of healthcare. EMC is a Diamond Member of HIMSS, and EMC's Healthcare Solutions Executive is Board Counsel on the HIMSS New England Board.

Information Technology Industry Council (ITI)

A council representing approximately 40 leading U.S. IT companies. ITI's three main divisions are Environment and Sustainability, Global Policy, and Government Relations. EMC is a member.

Storage Networking Industry Association (SNIA)

An organization of IT companies which develops standards and educates on best practices in energy efficiency in the data center. EMC's Senior Technologist for the Office of the Chief Technology Officer is the Chairman of the Board of Directors.

TechAmerica

An organization representing the broad spectrum of the U.S. IT industry, including software, hardware, telecommunications products and services, Internet and online services, systems integration, and professional services companies. EMC is a member. EMC's Director of Government Relations is Chair of the Information Security Committee, and EMC's VP of State and Local Government Sales serves on the State and Local Government Board of Directors.

TECHNET

A bipartisan, political network of IT CEOs that promotes the growth of technology and the innovation economy. EMC's Chairman, President and CEO is a member of the National Council. EMC's Executive Vice President and President of RSA, The Security Division of EMC, is co-chair of TechNet New England.

Technology CEO Council

A group of CEOs from leading technology corporations which is dedicated to advancing policies that ensure and promote U.S. competitiveness through technology leadership. EMC's Chairman, President and CEO is a member.

The Green Grid

A global consortium of companies dedicated to advancing energy-efficient data centers. EMC is a member, and EMC's Vice President of Corporate Sustainability is on the Board of Directors.

World Economic Forum

An independent international organization committed to improving the state of the world by engaging leaders in partnerships to shape global, regional, and industry agendas. EMC is an industry partner, and participates in the Task Force on Low-Carbon Economic Prosperity and the Global Education Initiative.

World Resources Institute

An environmental think tank that goes beyond research to find practical ways to protect the earth and improve people's lives. EMC is a sponsor of and partner in their Greenhouse Gas Protocol and Supply Chain Initiative.

Product Safety

At EMC, we work across the product lifecycle to assess and improve safety. Our Global Product Compliance (GPC) organization is responsible for compliance with regulations on electrical and mechanical safety.

Product design and certification

Our GPC engineers play an integral role in product development, beginning with the design concept. These engineers plan, manage, and conduct required product review and testing during the product design phase. This ensures that 100 percent of EMC core hardware and power supplies are in compliance with international product safety standards or requirements.

The goal of EMC's product safety compliance program is to prevent potential damage to customer property and harm to people using EMC hardware. Our GPC organization works with external agencies to attain product safety certification. Relevant certifications include the international IEC 60950-1, European EN60950-1, and North American UL/CSA 60950-1 standards.

Manufacturing, labeling, and distribution

Staff in each of our EMC manufacturing plants monitors the manufacturing process to ensure that products are being built to safety standards. Every product has a device-rating label with applicable agencies' certification marks that confirm compliance with safety regulations of the country to which it is being shipped. The GPC has full and final authority for approval of product shipments.

Product use and end-of-life

EMC is committed to product safety for as long as the product is used by a customer. Any safety concern raised by EMC Manufacturing or our Customer Support organization is quickly escalated to the executive management of the hardware team and immediate actions are taken to contain and correct the issue.

Extending the scope

In 2010, the GPC will begin regulatory coordination with our subsidiaries, including Iomega, Data Domain®, and RSA.

Transformative IT

The environmental and social challenges we face in the world today require creativity and collaboration to overcome. Information technology (IT) plays a key role in addressing many of the challenges we confront. At EMC, we enable people to tackle these issues with the innovative use of IT, and are participating in the public debate. These are just three examples.

- Energy

- Healthcare

- Public Sector

Energy

The challenge

Energy is vital to economic growth and improving standards of living. Global demand for energy has been growing at an accelerating pace, propelled by population growth, the globalization of markets, and many millions more people living—or seeking to live—a middle-class lifestyle.

All of this activity has led to increased concentrations of carbon dioxide and other greenhouse gases, which, according to the scientific consensus, is dramatically impacting the global climate. It's incumbent on the world to build alternatives to traditional power generation methods and devise innovative ways to grow prosperity while reducing GHG emissions.

The role of IT

The Information and Communication Technology (ICT) industry has an important role to play in reducing energy use and managing climate change. The ICT industry accounts for about two to three percent of global greenhouse gas emissions, according to recent estimates, and while the total emissions continue to grow due to increase in demand, the industry has been dramatically increasing the energy efficiency of its own products and services, improving performance per kilowatt-hour in virtually every generation of product.

More to the point, the ICT industry has the capability to reduce energy use across the global economy, including the use of high-performance computer modeling to accelerate the design of new materials and technologies for clean energy and energy storage. A 2008 study by the Climate Group and the Global e-Sustainability Initiative, called the Smart 2020 report, found that the strategic use of ICT could reduce global GHG emissions by up to 15 percent.

The role of EMC

For more than two decades, EMC has been developing energy-efficient storage platforms for organizations around the world. Today we are improving the energy efficiency of not only our storage devices but also the data center as a whole with more efficient power and cooling architectures and features that allow products to adjust dynamically to the loads placed on them.

Our use of technologies such as virtualization, data deduplication, fully automated storage tiering, and solid state drives create huge energy savings. In addition, our vision of leading customers on a journey to private cloud computing, in which IT is delivered as a service much as electricity or telephony are, holds the promise of enabling unprecedented levels of efficiency.

With these technologies and services, customers can manage their information assets with the same rigor and efficiency with which they manage their other critical corporate assets, leading to environmental and financial savings. To learn more about this work, please visit the Environment section of this report.

Customers use EMC information infrastructure to support applications that help them reduce energy use in logistics. Better route planning, warehouse management, and other IT-informed logistics strategies could reduce GHG emissions by 1.5 gigatons by 2020, according to the Smart 2020 report.

Looking beyond the data center, EMC supports and encourages public policies to combat climate change. We believe that the U.S. should develop a market-based approach to put a price on carbon, set short- and long-term GHG emissions reduction targets, and take action to ensure that they are met. Our public policy position statement lays out our specific position on this issue.

Smart Grids

The emerging Smart Grid uses information technology to transmit rate, usage, and control data, and applies that data to address business challenges, including demand response, customer relationship management, billing, and improving the overall reliability of the grid through quick resolution of outages.

Consumers will have the information they need to understand the cost implications of their day-to-day choices, enabling them to adjust their behavior accordingly. And it is ICT security technology that will give consumers the confidence they need to participate in what must be an "all hands on deck" effort.

EMC products and solutions are supplying key elements that enable the flow of digital information through the Smart Grid between the utility and the consumer. Technology from RSA, the Security Division of EMC, will enable utilities to secure the end-to-end system from the home to the utility, so information is not lost, tampered with, or accessed by an unauthorized user.

EMC Information Infrastructure will optimize the performance of utility applications and will offer business intelligence, and combined with EMC Consulting, will enable the utilities to make better decisions from the data they are collecting.

Efficient utilities

Our EMC Ionix™ software suite delivers utilities a view of all their intelligent components in the Smart Grid. The use of this software provides much better and accurate information about failing or failed components. When an outage occurs, the utility can quickly identify the location of the failure virtually through Ionix, instead of sending people on trucks to search for the problem.

In addition, EMC's efficient IT will help utilities store and manage the volumes of data that will now be coming into their data centers through new meter data management systems. Not only will the data be well-managed and accessible, it will be stored efficiently using EMC technologies such as Fully Automated Storage Tiering (FAST) and data deduplication.

Smart meters

EMC provides the back-end infrastructure for meter data management systems (MDMS) that utilities use to collect, analyze, and report on the electricity use of their customer base. EMC optimizes the performance of the MDMS and provides efficient and secure technology to protect this mission-critical data in the most cost-effective manner.

Smarter consumers

Delivering data to consumers is not enough. To help people change their behavior and capture the full potential of energy savings through the Smart Grid, the data must be presented as useful, actionable information.

EMC Consulting, which has expertise in smart portal design and execution, can empower consumers by giving them more insight into the amount of energy they are consuming, allowing them to modify behavior by either cutting usage or shifting demand to off-peak hours.

The portals will also help to ensure electricity reliability for the utility company as they can more effectively manage demand, avoiding the consequences of usage peaks that can stress the grid.

Healthcare

The challenge

The U.S. healthcare system continues to face the challenges of: increasing medical costs, gaps in insurance coverage, and limited deployment of information technology (IT) due to inadequate financial resources.

There is global interest as governments, healthcare providers, insurers, employers, and families all encourage greater adoption of information technology to improve access, safety, quality, and cost control of healthcare, while protecting the privacy of individuals.

The role of IT

Because providing optimum patient care relies on the exchange of up-to-date information, IT plays an important role in enabling safer, more cost-effective patient care. For example, IT helps to improve clinical and quality outcomes with timely access to online patient information.

Today, fewer than 10 percent of U.S. hospitals have demonstrated meaningful use of a fully operational electronic health record (EHR) and less than four percent of small-practice physicians use an EHR for results reporting, prescribing, clinical documentation, and clinical decision support.

The RAND Corporation, a nonprofit research institution, estimates that U.S. $81 billion could be saved each year through wider adoption of electronic health records which can help to reduce the number of redundant tests, procedures, and treatment errors.

The role of EMC

At EMC, we are working with healthcare partners to develop integrated information infrastructure solutions that enable caregivers to securely access and exchange patient health information at the point of care.

Our efforts include collaboration with research and advocacy groups that are dedicated to improving the way healthcare is practiced. As an employer, we are providing our employees with online tools that enable them to store, access, and maintain their own comprehensive health information in a secure, centralized location. In fact, we were the first company in Massachusetts to provide our employees with an electronic Personal Health Record (PHR).

EMC solutions for healthcare

As healthcare organizations focus resources on achieving "meaningful use" of their Electronic Health Record (EHR), their clinical and business applications must be integrated with a highly available, high-performing, secure, and virtualized information infrastructure.

EMC integrated solutions help healthcare organizations accelerate time-to-deployment of an efficient and highly-automated IT infrastructure. In tandem with leading clinical application providers, we are creating solutions that help healthcare providers of all sizes capture, manage, and secure patient health information while gaining IT efficiencies. Medical images and patient information are quickly delivered to authorized clinicians for faster time-to-treatment.

EMC healthcare consulting

Our dedicated healthcare consulting group works directly with healthcare providers, helping them to improve information sharing to drive efficiencies for safer patient care; extend the capabilities of healthcare applications to automate workflow and optimize revenue; and to create an agile, resilient, secure, and optimized technology infrastructure to reduce IT costs and risks.

Optimizing our employees' health

EMC employees have access to a suite of online health applications and tools that can be customized to fit each individual's needs and interests. For example, our health management program enables our employees and their families to better manage their health conditions and help them monitor everything from prescription records to weight loss goals.

Advocating for a healthier society

By sharing our expertise, we are playing an important role in the development of new healthcare technology solutions and practical health management programs. We advise policy makers on legislative issues that affect the privacy and confidentiality of healthcare information. We partner with research and advocacy organizations to support their efforts to create a healthier society, including the rigorous analysis of patient outcomes to promote better clinical practices.

Public Sector

The challenge

Many public sector organizations around the world are facing declining tax bases but rising expectations for services. In response, they are working to improve their delivery of services, increase their operational efficiency, make it easier for citizens to interact securely with their information—and enable agencies to share information to maintain public safety and ensure the continuity of operations in the event of a disaster.

The role of IT

In the past, public sector organizations used IT mostly to improve the efficiency of their operations. Today they are focused more on the "I" in IT, the information in their organizations and the way it's managed, shared, and secured. To serve their constituents effectively, public sector organizations need the ability to collect, store, share, and retrieve information electronically.

The role of EMC

According to IDC, an IT industry analyst group, the digital universe will double every 18 months. Ever-increasing volumes of information generated by mandates for more record-keeping compliance, increased access to broadband communications, the rise of electronic health records, the arrival of smart electric grids, and many other developments are going to overwhelm public sector organizations that continue to operate with paper-based business processes and silos of information.

That's why we are strong advocates of "connected government," in which all information is digitized and information sharing among departments and agencies is orchestrated and secured by information infrastructure.

Public sector solutions

EMC solutions, often developed with partners, are designed to transform paper processes into connected government, where workflows are streamlined and automated. This enables public agencies to quickly access vital information and collaborate with their peers to achieve better outcomes for social services, ensure accurate revenue collection, and provide more effective public safety.

Our goal is to help public sector organizations implement and leverage their IT infrastructure in ways that enable them to optimize resources and serve the public's interest more efficiently and effectively.

EMC government consulting

We are working directly with our public sector customers, helping them streamline their processes, resolve data security issues, improve service delivery, ensure preparedness, and provide for public safety. Whether it's offering file assessment services or green IT improvements, or consulting on information management efficiencies, our consulting group excels at helping organizations reduce their costs while expanding their delivery of services to their constituents.

Related materials

• St. Petersburg: Preparing for Hurricanes

>> **Find out**

Redcar Case Study: How did EMC Documentum help the borough of Redcar, Cleveland?

2009 Goals and Performance

Workplace Goals and Performance

EMC is cultivating a culture of inclusiveness, innovation, and education, and creating a healthy workplace for employees to thrive. Here you can read the corporate goals we have set for ourselves, and our progress against those goals.

Employee Satisfaction

Performance

- 2009—92 percent of employees worldwide participated in our confidential Employee Satisfaction and Management Survey (ESMS)
  - The results were very positive for employee satisfaction and engagement in the workplace

Employee Satisfaction and Engagement, 2007–2009

	2007	2009
% participation	93%	92%
% satisfied	82%	83%
% engaged	question not asked in 2007	86%
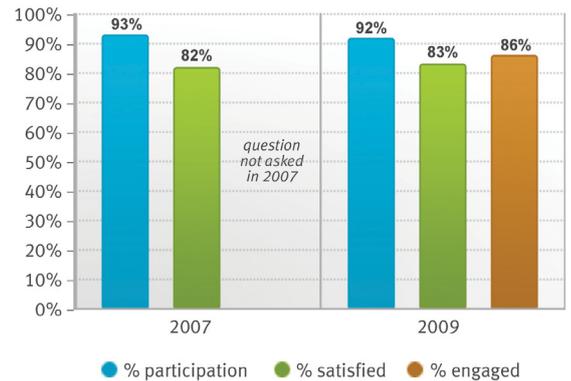
Global inclusion

Goals

- 2010—Develop and execute a diversity strategy to increase the pool of candidates for mid-to-senior-level openings
- 2010—Develop and execute a program to promote EMC's brand for diversity and inclusion
- 2010—Develop a targeted strategy to maximize EMC success by proactively addressing diversity and inclusion factors in key markets around the world

Performance

- 2009—Employees responded positively to these questions about diversity and inclusion in ESMS:
  - I understand the importance of diversity at EMC
  - EMC demonstrates a respect for employee diversity of opinions, work styles, gender, race and ethnic background
  - My work group has a climate in which diverse perspectives are valued

Satisfaction Management Survey, 2007–2009
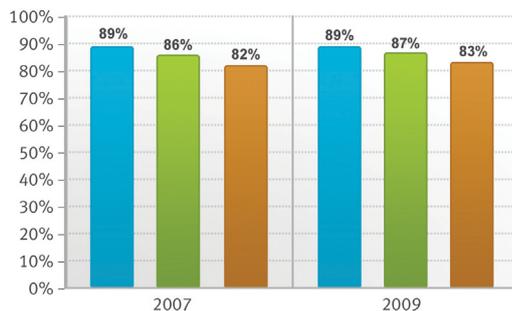
From Employee Satisfaction Management Survey, % of people who responded positively to:

- 🔵 I understand the importance of diversity at EMC
- 🟢 EMC demonstrates a respect for employee diversity of opinions, work styles, gender, race and ethnic background
- 🟠 My work group has a climate in which diverse perspectives are valued

Career development

Goal

- 2010—Expand automated talent management system to streamline the Organization and Talent Review process and make career development resources more readily available to employees

Performance

- 2009—More than tripled the number of identified high-potential employees who are receiving additional development opportunities

**Total number of identified high-potential employees**
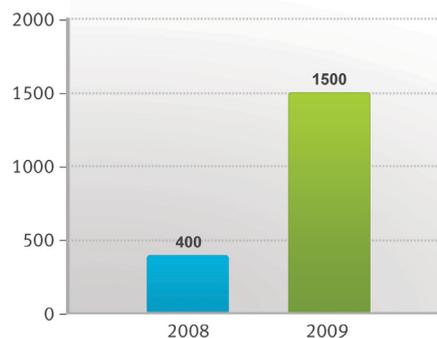
Average number of hours of training per employee

- 🔵 Average number of hours of trainng per employee (global)
- 🟢 Vice President and above
- 🟠 Director
- 🟣 Manager
- 🟡 Individual Contributor
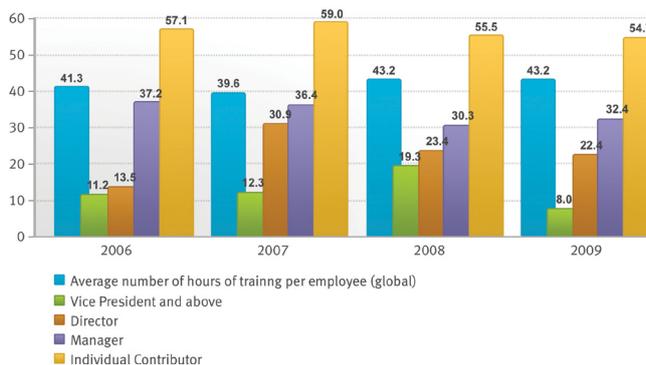
Innovation Conference

Performance

- 2009—Participation in the annual Innovation Conference increased, both by ideas submitted for consideration and by attendees to the event

Innovation Conference participation 2008–2009

- # of ideas submitted
- # of conference attendees
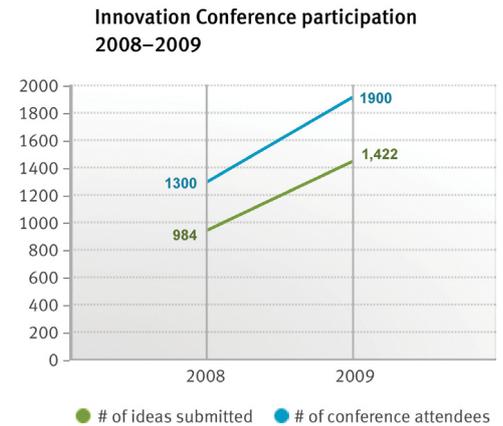
University relations

Goal

- 2010—Continue to focus college hiring in North America on key schools

Performance

- 2009—53 percent of college hires in North America came from key schools
- 2009—More than 70 percent of interns and coop students converted to full-time employment with EMC after graduation
  – This compares very favorably to the industry average of 52 percent, according to the National Association of Colleges and Employers (NACE)

Intern and coop conversion, 2006–2009
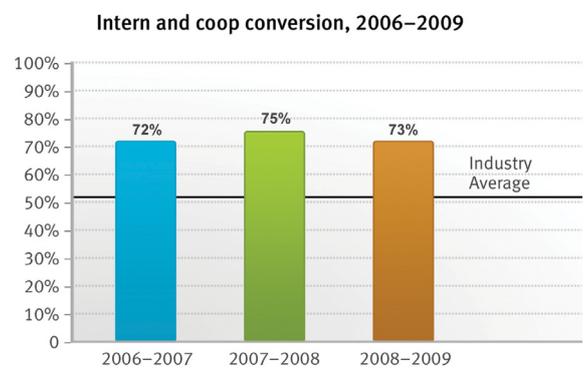
Health and wealth benefits

Goals

- 2010—Add functionality for healthcare providers to write notes in Personal Health Record (PHR)
- 2010—Enable portability for HealthLink, so that employees who leave EMC can continue to use PHR
- 2011—Add biometrics, such as blood pressure readings performed over phone lines, with the results added directly to the PHR
- 2011—Add x-ray record capability to PHRs

Percentage of employees who accessed HealthLink 2008–2009
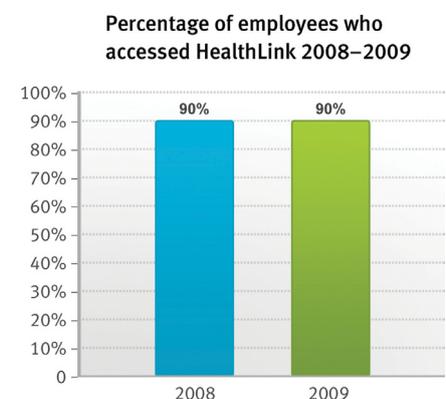
Health and safety

**Goal**

- 2010—achieve OHSAS 18001 certification for Apex Manufacturing

Performance

- 2009—Achieved OHSAS 18001 certification for our Massachusetts manufacturing facility
- 2009—Maintained Lost Time Injury Rate (LTIR) below industry average
  – LTIR is an indicator of workplace safety
  – According to U.S. Bureau of Labor Statistics, average LTIR in our industry is 0.2
  – We measure LTIR only in countries where we have manufacturing operations
- 2009—There was one employee fatality resulting from a motor vehicle accident while the employee was traveling on EMC business. The fatality resulted from a third party whose motor vehicle crossed the median and struck our employee's motor vehicle.

Lost Time Incedent Rate U.S. and Ireland 2006–2009
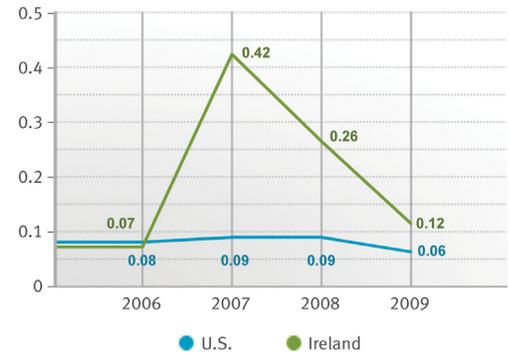
Social Investment Goals and Performance

EMC is expanding our social investment in our global markets. From education partnerships to Information Heritage, we are advancing our community investment of financial assistance and deep knowledge of technology.

Education partnerships

Goals
- 2010—Track volunteer hours and global social investment funding
- 2011—Report volunteer hours and global social investment funding

Performance
- 2009—Our global education partnerships and employee volunteer programs expanded to five additional countries, bringing our total number of countries with programs to 23

Education and community partnerships in 23 countries worldwide

U.S., Argentina, Brazil, Colombia, Mexico, Australia, China, India, Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, Austria, Ireland, Egypt, Israel, Italy, Kenya, Poland, Russia, South Africa

Academic alliance

Goals
- 2010—Continued growth in Academic Alliance partnerships with universities in emerging markets
- 2010—Publish "Information Storage and Management" textbook in Portuguese and Russian

Number of students educated on Information Storage and Management since 2006
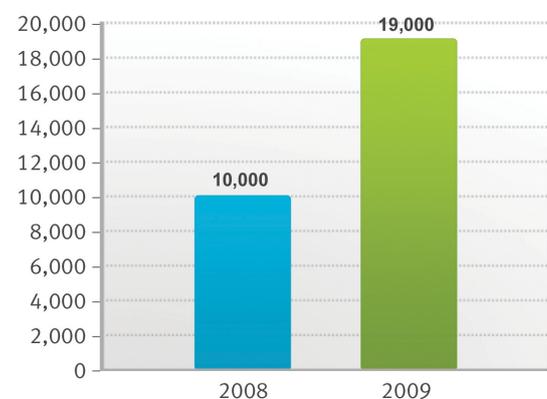
Information Heritage Initiative

Performance
- 2009—Launched a new Information Heritage Initiative with The Finca Vigia Foundation, preserving the home of Ernest Hemingway in Havana, Cuba
- 2009—Awarded cash grants to seven new grantees in the Heritage Trust Project

Environment Goals and Performance

We are committed to improving our performance and transparently reporting our progress. Our top environmental priorities are energy and climate change, and material use and waste. Here you can read the corporate goals we have set for ourselves, and our progress against those goals.

Climate change

Goals

- 2012—Reduce GHG emissions per square foot of our U.S. facilities to eight percent below 2005 levels, as committed to the U.S. EPA's Climate Leaders Program
- 2012—Reduce GHG emissions intensity per U.S. dollar revenue by 30 percent below 2005 levels
- 2015—Reduce GHG emissions intensity per U.S. dollar revenue by 40 percent below 2005 levels
- 2050—Reduce absolute GHG emissions 80 percent below 2000 estimated levels of 274,000 tonnes

Performance

- 2009—EMC is on track to meet our Climate Leaders goal
  - We achieved a 21 percent reduction below 2005 levels in GHG emissions per square foot in our U.S. owned or operated facilities
  - Our purchase of Green-e certified Renewable Energy Credits (RECs) offset 62,169 tonnes of GHG in 2009
- 2009—Our GHG emissions intensity per US dollar revenue decreased in 2009 to:
  - 11 percent below 2005 levels without RECs
  - 25 percent below 2005 levels with RECs
- 2009—Our absolute GHG emissions were 40 percent above 2000 estimated levels, while growing revenue 59 percent in the same time frame

**Progress Toward Climate Leaders Goal: U.S. Facilities GHG Emissions**

Source	2005	2006	2007	2008 (with RECS)	2009 (with RECS)
GHG per 1000 ft²	37.02	38.16	40.63	29.72	29.07
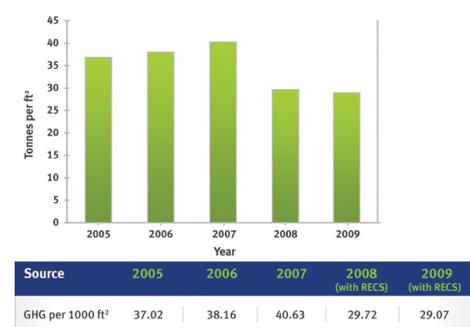
Global Facilities GHG Emissions Intensity (Scope 1 and 2), 2005–2009

- GHG per $1M revenue
- GHG per 1000 ft²
- GHG per $1M revenue with RECs
- GHG per 1000 ft² with RECs

Source	2005	2006	2007	2008	2008 (with RECS)	2009	2009 (with RECS)
Per revenue	30.89	28.41	27.14	25.25	21.06	27.54	23.11
Per 1000 ft²	28.55	27.84	27.67	29.58	24.66	27.55	23.12

RECS: 2009: offset 62,169 tonnes, 2008: offset 62,444 tonnes

In 2008 and 2009 we purchased Green-e certified Renewable Energy Credits (RECs) to offset (numbers above) respectively. *In our 2008 report we stated that we only offset 40,325 tonnes, due to an error from our REC vendor, who gave us numbers only for CO₂, not CO₂ and CO₂ equivalents (CO₂e)*

GHG Emissions by Source from EMC Global Facilities, 2005–2008

- Scope 1: Indirect emissions
- Scope 2: Indirect emissions

Source	2005	2006	2007	2008	2009
Scope 1: Direct Emissions	32,473	31,437	38,529	36,004	39,211
Scope 2: Indirect Emissions	266,014	285,458	320,560	339,682	347,052
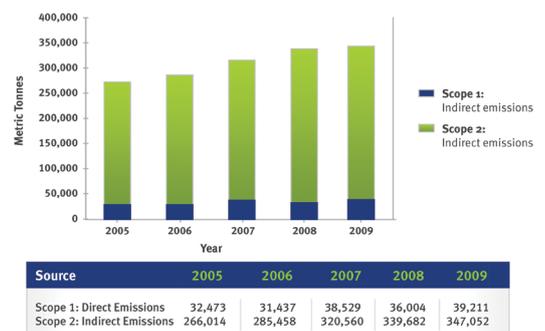
Efficient facilities

Goals

- 2010—Install energy management systems in major facilities worldwide
- 2012—Reduce energy consumption per employee in global facilities to 40 percent below 2005 levels
- 2040—Purchase 50 percent of electricity consumed in major global facilities from renewable resources

Performance

- 2009—New energy efficiency initiatives avoided the use of 2.25 million kWh of electricity in 2009, and will avoid the use of 4.5 million kWh annually going forward
- 2009—Our total electricity use increased by 2 percent over 2008
- 2009—Our natural gas use for heating facilities increased by 17 percent over 2008

Total Natural Gas Use by Therms and Gigajoules

Year	Therms	Gigajoules
2005	4,326,235 therms	456,442 GJ
2006	4,353,030 therms	459,269 GJ
2007	5,264,329 therms	555,416 GJ
2008	5,270,787 therms	556,098 GJ
2009	173,831 therms	651,374 GJ

Total Electricity Use by Megawatt Hours and Gigajoules

Year	Megawatt Hours	Gigajoules
2005	570,839 MWh	2,055,019 GJ
2006	635,287 MWh	2,287,033 GJ
2007	713,132 MWh	2,567,275 GJ
2008	733,730 MWh	2,641,427 GJ
2009	751,571 MWh	705,654 GJ

Travel

Performance

- 2009—EMC reduced GHG emissions from corporate travel to 21 percent below 2007 levels

GHG Emissions from Corporate Travel

- 2007: 89,290 tonnes
- 2008: 79,300 tonnes
- 2009: 70,787 tonnes
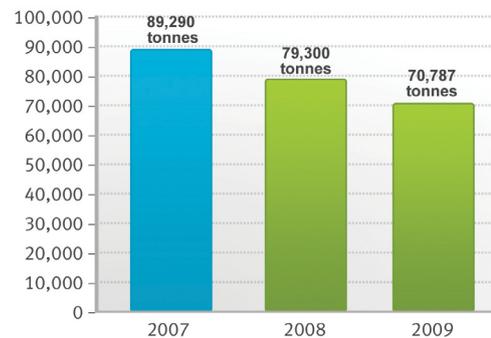
EMC data centers

Goal

- 2010—Open a new state-of-the-art, energy-efficient data center

Energy-efficient hardware

Goal

- 2010—Power supply efficiency at 90 percent or greater for all enterprise and midrange storage hardware under current and future development

Water

Goal

- 2010—Increase use of recycled water from our treatment plant by 30 percent over 2009 amounts

Performance

- 2009—We reused more than 15 million liters of treated "gray" water

Product material content

Goals

- 2010—Reduce the use of Polyvinyl Chlorides (PVCs) 50 percent by weight in generally available EMC core products by implementing an alternative material
- 2010—Reduce the use of brominated flame retardants (BFRs) 50 percent by weight in all newly designed printed circuit boards for EMC core products by substituting an alternative material where technically and economically feasible

Performance

- 2009—Because of challenges in availability, cost, and reliability of alternatives to BFRs, we will not meet our originally stated target of an absolute reduction of BFRs in generally available products by 50 percent by 2010
- 2009—We have qualified substitute material for PVCs in cable sheathing that meets our performance requirements, but this substitute does not yet meet our requirements for economic viability or continuity of supply
  - We are working with our suppliers to develop a transition plan

Packaging

Performance

- 2009—Our total new packaging for EMC core products, measured by weight, declined by 30 percent below 2008 levels. We attribute this to:
  - Increased reuse of packaging components such as disk drive cushions and metal brackets
  - Increased utilization of reusable packaging
  - Reduced sales in a global recession
- 2009—We saw a slight increase in the percentage of packaging reclaimed from our customers and recycled or reused by our packaging suppliers
  - These suppliers reuse the reusable packaging elements and recycle the corrugated cardboard, foam, and wood

**Total weight of packaging used for EMC core products**

2008: 7.6 M kg
2009: 5.3 M kg
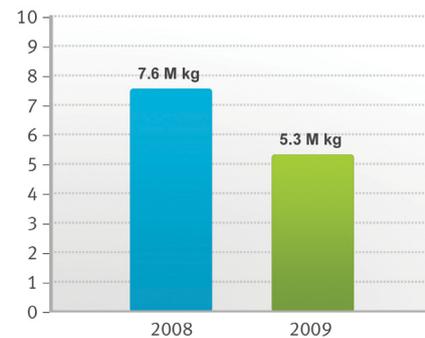
Total percentage of packaging reclaimed and recycled (by weight)

2008: 6.55 %
2009: 6.83 %
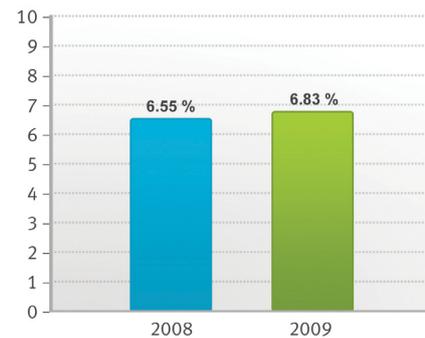
Product end-of-life

Performance

- 2009—The destination of our returned products (measured by weight) remained largely consistent with our 2008 statistics

Destination of returned products by weight, since 2008
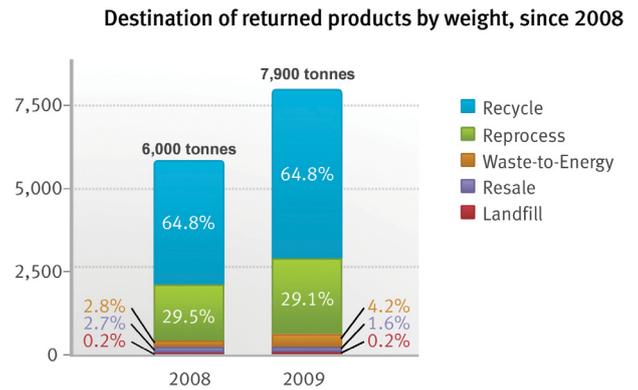
Supply Chain Goals and Performance
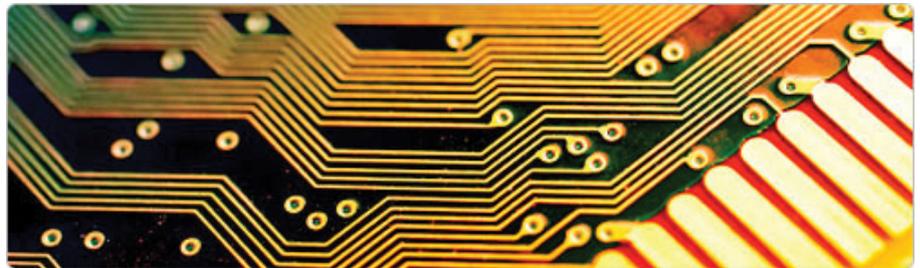
EMC's Global Supply Chain Management organization is working closely with suppliers and industry peers to advance environmental responsibility in the supply chain.

Supplier GHG emissions reporting

Goal

- 2010—Collect scope 1 and scope 2 GHG emissions data and reduction goals, from Tier 1 direct suppliers, constituting 95 percent coverage by spend, and measure their performance against their goals

Performance

- 2009—Suppliers constituting 80 percent of Tier 1 direct spend reported their 2008 GHG emissions data

Code of Conduct acknowledgement

Goal

- 2010—100 percent of active Tier 1 direct suppliers acknowledge EMC's revised Supplier Code of Conduct
- Revisions will be made in 2010 to remain consistent with EICC Code of Conduct updates

Performance

- 2009—Suppliers representing 98 percent of EMC's Tier 1 direct-supplier spend acknowledged EMC's Supplier Code of Conduct

Self-assessment questionnaire (SAQ)

Performance

- 2009—Suppliers constituting 67 percent of Tier 1 direct spend responded to the E-TASC SAQ

Governance and Integrity Goals and Performance

Our strong corporate governance and culture of integrity is sustaining our business success.

Stakeholder engagement

Goal

• 2010—Work with Ceres to develop a broader stakeholder engagement program

Ethics

Goal

• 2010—Develop and introduce at least one new training program for international employees and U.S. employees

Revenue

Performance

• Full-year 2009 consolidated revenue was $14.0 billion.
  – Revenue from EMC's Information Infrastructure business reached $12.0 billion and VMware contributed revenue of $2.0 billion

EMC Revenue in Billions, 2005–2009

Year	Revenue
2005	9.7 B
2006	11.1 B
2007	13.2 B
2008	14.9 B
2009	14.0 B
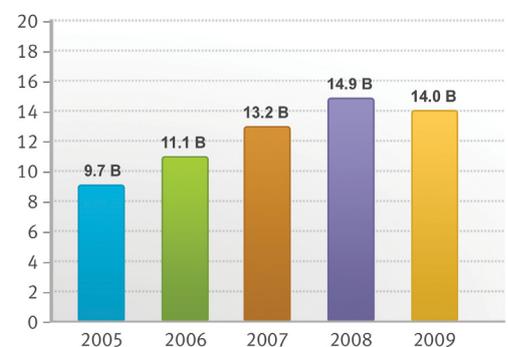
Research and development investment

Performance

• In 2009, EMC sustained aggressive investment in research and development, totaling 12 percent of annual consolidated 2009 revenue
  – Results from this innovation include EMC Virtual Matrix Architecture™, FAST technology, and more than 30 new services and solutions to drive the acceleration of cloud computing

EMC Investment in R&D, 2005–2009

Year	Investment
2005	1.0 B
2006	1.3 B
2007	1.5 B
2008	1.7 B
2009	1.6 B
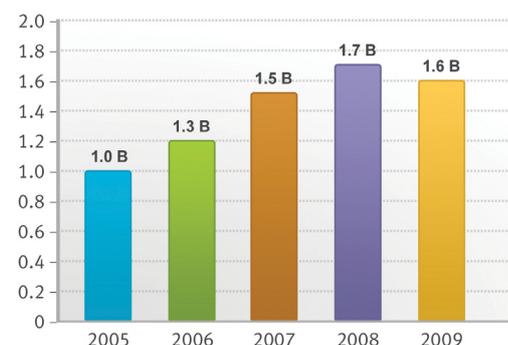
Information privacy

Performance

• 2009—Our credentialing program completed background checks on 100 percent of our employees

About This Report

Boundary and scope

Unless otherwise noted, this report covers EMC and its subsidiaries for the 2009 fiscal year (January 1, 2009 to December 31, 2009). In areas where the scope is defined as "EMC core," it does not include subsidiaries such as RSA, Iomega, and Data Domain.

Our global greenhouse gas (GHG) emissions data from our operations includes our subsidiaries and VMware. These emissions calculations were compiled according to the World Resources Institute Greenhouse Gas Protocol.

Information in this report on the environmental impact of our products, supply chain, and operations (excluding GHG emissions from our operations) is generally limited to EMC core. It is our intent to set comprehensive enterprise-wide metrics. This is a challenging undertaking, and we do not yet have a date by which we can be certain we will have these metrics in place. However, we are working diligently toward that goal and will report on our progress in subsequent sustainability reports.

Where we refer to "owned and operated" facilities, we are including buildings that we fully own and buildings that we lease, but over which we have operational control. These owned and operated facilities are primarily located in:

• Bedford, Franklin, Hopkinton, Southborough, and Westborough in Massachusetts
• Apex and Research Triangle Park in North Carolina
• Pleasanton and Santa Clara in California
• Cork, Ireland

The information on our workplace policies and programs is global and includes EMC and all of our subsidiaries.

Previous sustainability communications include EMC's 2008 report, "Looking Inward, Outward, Ahead," released in May 2009. Archives of our reports can be found at Sustainability Reports on EMC.com. We intend to publish updated reports annually, and continually update information on our Sustainability website on EMC.com.

Content and materiality

To determine the content for this report, we asked a third party to conduct a full issues assessment to identify the most material topics relevant to EMC and our industry, as well as expectations and requirements of our stakeholders. The process involved gathering input from publicly available sources, including traditional and online media, industry and trade associations, nonprofit groups, public agencies, as well as internal plans and stakeholder feedback. Once the findings were presented, we convened internal subject-matter experts to set priorities based on both internal and external views of materiality. The topics identified in this materiality assessment were:

• Corporate Governance and Ethics
• e-Waste
• Energy-efficient Products and Solutions
• Environmental Management
• Human Rights
• Inclusion and Diversity
• Information and Cyber Security
• Social Investment and Philanthropy
• Stakeholder Engagement
• Workplace Environment

We also used the Global Reporting Initiative (GRI) framework as a guide for including some additional information.

CERES offered feedback on the report content, and we appreciate their guidance and recommendations. We also contracted with a third-party consultancy that specializes in sustainability reporting to assist us with the process and the content.

EMC's Office of Sustainability is responsible for the preparation and integrity of the information in this report. Through a system of internal controls, including a comprehensive verification process involving internal subject matter experts, we believe this report fairly represents our sustainability activities and results for the fiscal year ended December 30, 2009.

Re-statements

Our GHG emissions disclosures in this report include re-statements of prior years to account for our acquisition of Data Domain, which took place in 2009. Data Domain represents 1.6 percent of EMC's consolidated revenue as of and for the year ended December 31, 2009, and added more than 200,000 square feet of office and lab space to our global portfolio. These additions represent less than 1 percent of our total GHG emissions.

We are also re-stating the GHG offsets from the Green-e certified Renewable Energy Credits (RECs) that we purchased in 2009. In our 2008 report, we stated that we only offset 40,325 tonnes, due to an error from our REC vendor, who gave us numbers only for CO_2, not CO_2 and CO_2 equivalents (CO_2e). The actual offsets in 2009 were 62,169 tonnes of GHG emissions.

In the course of compiling the 2009 report, we obtained more complete information about our emissions from corporate travel. As a result, we are also re-stating our GHG emissions from corporate travel for 2007 and 2008. Our travel emissions are being re-stated from 85,000 to 89,290 tonnes in 2007 and from 60,500 to 79,300 tonnes in 2008.

On page 14 of our 2009 report we included a graph labeled "Office eWaste Destinations, U.S. and Ireland, 2008." This graph was mislabeled. The graph actually showed the final destinations of the total eWaste EMC sent to IT Asset Disposal vendors.

Measures

Throughout this report:

- "tonnes" refers to metric tonnes
- all monetary units are in U.S. dollars

Contact

Please send any questions about this report or its contents to the Office of Sustainability at Office_of_Sustainability@emc.com.

GRI Index

The Global Reporting Initiative (GRI) is an international standard for sustainability reporting. EMC is self-declaring this report to GRI Application Level B. To help our readers, we have provided here a table of the GRI indicators covered in this document.

We also have a GRI index on EMC.com. The content on EMC.com is regularly updated with current information for our stakeholders. Therefore, that content will not necessarily be bounded by the 2009 reporting period.

GRI Indicator	Topic	Location	Coverage (Full or Partial)
STRATEGY AND ANALYSIS			
1.1	Statement from the CEO.	Letter from the CEO	F
1.2	Description of key impacts, risks, and opportunities	Letter from the CEO Our Priorities	F
ORGANIZATIONAL PROFILE			
2.1	Name of the organization.	Corporate Profile	F
2.2	Primary brands, products, and/or services.	Corporate Profile EMC Products EMC Solutions EMC Consulting and IT Services	F
2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures.	Corporate Profile 2009 10K	F
2.4	Location of organization's headquarters.	Contact Us	F
2.5	Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report.	Corporate Profile Contact Us	F
2.6	Nature of ownership and legal form.	Corporate Profile	F
2.7	Markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries).	Corporate Profile	F
2.8	Scale of the reporting organization.	2009 10K	F
2.9	Significant changes during the reporting period regarding size, structure, or ownership.	2009 10K	F
2.10	Awards received in the reporting period.	Awards and Recognition	F
REPORT PARAMETERS			
REPORT PROFILE			
3.1	Reporting period (e.g., fiscal/calendar year) for information provided.	About This Report	F
3.2	Date of most recent previous report (if any).	About This Report	F
3.3	Reporting cycle (annual, biennial, etc.).	About This Report	F
3.4	Contact point for questions regarding the report or its contents.	About This Report	F
REPORT SCOPE AND BOUNDARY			
3.5	Process for defining report content, including: Determining materiality; Prioritizing topics within the report; and Identifying stakeholders the organization expects to use the report.	About This Report	F
3.6	Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers). See GRI Boundary Protocol for further guidance.	About This Report	F
3.7	State any specific limitations on the boundary of the report.	About This Report	F
3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations.	About This Report	F
3.9	Data measurement techniques and the basis of calculations, including assumptions and techniques underlying estimations applied to the compilation of the indicators and other information in the report.	About This Report 2009 Carbon Disclosure Project Report 2009 Goals and Performance—Environment Supply Chain Emissions	F
3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement.	About This Report	F

GRI Indicator	Topic	Location	Coverage (Full or Partial)
3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report.	About This Report	F
GRI CONTENT INDEX			
3.12	Table identifying the location of the Standard Disclosures in the report.	GRI Index	F
3.13	Policy and current practice with regard to seeking external assurance for the report. If not included in the assurance report accompanying the sustainability report, explain the scope and basis of any external assurance provided.	About This Report	F
GOVERNANCE, COMMITMENTS, AND ENGAGEMENT			
GOVERNANCE			
4.1	Governance structure of the organization, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organizational oversight.	Corporate Governance Environmental Strategy	F
4.2	Indicate whether the Chair of the highest governance body is also an executive officer.	Corporate Governance	F
4.3	For organizations that have a unitary board structure, state the number of members of the highest governance body that are independent and/or non-executive members.	Corporate Governance	F
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body.	Contact the Board	F
4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives (including departure arrangements), and the organization's performance (including social and environmental performance).	Corporate Governance Guidelines 2010 Proxy Statement	F
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided.	Corporate Governance Guidelines	F
4.7	Process for determining the qualifications and expertise of the members of the highest governance body for guiding the organization's strategy on economic, environmental, and social topics.	Corporate Governance and Nominating Committee Charter	P
4.8	Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation.	Ethics	F
4.9	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles. Include frequency with which the highest governance body assesses sustainability performance.	2010 Proxy Statement Environmental Strategy	F
4.10	Processes for evaluating the highest governance body's own performance, particularly with respect to economic, environmental, and social performance.	Corporate Governance Guidelines	F
COMMITMENTS TO EXTERNAL INITIATIVES			
4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organization.	Product Material Content	F
4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses.	Environmental Strategy	F
4.13	Memberships in associations (such as industry associations) and/or national/ international advocacy organizations in which the organization: Has positions in governance bodies; Participates in projects or committees; Provides substantive funding.	Organization Memberships	F
STAKEHOLDER ENGAGEMENT			
4.14	List of stakeholder groups engaged by the organization. Examples of stakeholder groups are: Communities; Civil society; Customers; Shareholders and providers of capital; Suppliers; and Employees, other workers, and their trade unions.	Stakeholder Engagement	F
4.15	Basis for identification and selection of stakeholders with whom to engage. This includes the organization's process for defining its stakeholder groups, and for determining the groups with which to engage and not to engage.	Stakeholder Engagement	P
4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group.	Stakeholder Engagement	F

GRI Indicator	Topic	Location	Coverage (Full or Partial)
4.17	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting.	Stakeholder Engagement	F
ENVIRONMENTAL			
Management Approach: Our Environmental Strategy provides the overview for our environmental management approach. Each of the topics in this indicator is covered within the environmental section of the report, with the exception of biodiversity. Our impact on biodiversity is largely indirect, and we are evaluating how and when to approach this topic. In addition, our Environmental Policy can also be found on EMC.com.			
ENERGY			
EN3	Direct energy consumption by primary energy source.	2009 Goals and Performance—Environment	F
EN4	Indirect energy consumption by primary source.	2009 Goals and Performance—Environment	F
EN5	Energy saved due to conservation and efficiency improvements.	Efficient Facilities	F
EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.	Energy-Efficient Hardware Efficient Data Centers	F
EN7	Initiatives to reduce indirect energy consumption and reductions achieved.	Efficient Facilities	F
WATER			
EN10	Percentage and total volume of water recycled and reused.	Water	P
EMISSIONS, EFFLUENTS, AND WASTE			
EN16	Total direct and indirect greenhouse gas emissions by weight.	2009 Goals and Performance—Environment	F
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.	Efficient Facilities Data Centers and IT Travel and Commuting 2009 Goals and Performance—Environment 2009 Carbon Disclosure Project Report	F
EN23	Total number and volume of significant spills.	Facilities Recycling and Waste	F
PRODUCTS AND SERVICES			
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	Energy-Efficient Hardware Efficient Data Centers Product Material Content Packaging Product End-of-Life Industry Standards Supply Chain Responsibility Supply Chain Emissions	F
EN27	Percentage of products sold and their packaging materials that are reclaimed by category.	2009 Goals and Performance—Environment	P
COMPLIANCE			
EN28	Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with environmental laws and regulations.	Environmental Strategy	F
HUMAN RIGHTS			
Management Approach: EMC is committed to respecting our employees' basic human rights. Our Global Labor Principles set the standard for non-discrimination, freedom of association, and non-use of child, forced, or compulsory labor. The EMC Supplier Code of Conduct also sets the minimum levels of behavior as a condition to do business with EMC, including labor, health and safety, and non-discrimination standards. We cover the practice of reporting of concerns and ethical breaches in the Ethics section, and security of employee and contractor information in the Information Privacy section. At this time, any impact of our operations on indigenous rights is indirect, and we are not yet reporting on this topic.			
INVESTMENT AND PROCUREMENT PRACTICES			
HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken.	Supply Chain Responsibility	F
HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	Ethics	P

GRI Indicator	Topic	Location	Coverage (Full or Partial)
LABOR PRACTICES AND DECENT WORK			
Management Approach: At EMC we seek to create a safe, healthy, engaging, and supportive workplace for diverse employees to thrive. Employment, Health and Safety, Training and Education, and Diversity are covered in the Workplace section of this report. We discuss communications between employees and management in the Stakeholder Engagement section. And our Global Labor Principles state our commitment to respecting our employees' basic human rights.			
OCCUPATIONAL HEALTH AND SAFETY			
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region.	2009 Goals and Performance—Workplace	F
LA8	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.	Health and Wealth Benefits	P
TRAINING AND EDUCATION			
LA10	Average hours of training per year per employee by employee category.	2009 Goals and Performance—Workplace	F
LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	Career Development Managing Change	F
LA12	Percentage of employees receiving regular performance and career development reviews.	Career Development	F
SOCIETY			
Management Approach: Our investment in our local communities, which focuses on education and academic partnerships, is covered in the Social Investment section of this report. In the Ethics section of Governance and Integrity we discuss our corporate compliance program which drives employee awareness of ethical conduct. Our Political Contributions Policy states how EMC participates responsibly in the political process, and we disclose our political contributions twice a year. EMC's Business Conduct Guidelines include guidelines for anti-competitive behavior and compliance with the law.			
CORRUPTION			
SO3	Percentage of employees trained in organization's anti-corruption policies and procedures.	Ethics	F
SO4	Actions taken in response to incidents of corruption.	Ethics	P
PUBLIC POLICY			
SO5	Public policy positions and participation in public policy development.	Working for Global Change EMC Policy Statement on Climate Change Legislation Healthcare Education Public Policy Organization Memberships	F
SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country.	Political Contributions Disclosure Statements: Six Months Ended June 30, 2009 Political Contributions Disclosure Statements: Six Months Ended December 31, 2009	F
PRODUCT RESPONSIBILITY			
Management Approach: Our Product Safety section discussed how we work across the product lifecycle to assess and improve product safety, as well as labeling our products for different markets. Customer Privacy is addressed in our Information Privacy section.			
CUSTOMER HEALTH AND SAFETY			
PR1	Lifecycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.	Product Safety	F
ECONOMIC			
Management Approach: Our 10K document provides an overview of our economic performance, results of operations, and market presence. Our Corporate Governance Guidelines and Proxy Statement state the responsibilities and organization of our Board of Directors.			
ECONOMIC PERFORMANCE			
EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	2009 10K	F
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.	2009 Carbon Disclosure Project Report	F
INDIRECT ECONOMIC IMPACTS			
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.	Social Investment	F

EMC²
where information lives®