INSIDE: Look there! EMC adds a new option to its e-conferencing toolbelt.

EMC.now

Meet the introducers

Are Burt Kaliski and Rob Masson trying to disrupt EMC's business model—by helping it to uncover things that nobody has even *thought of* yet?

Q3 2009
A QUARTERLY MAGAZINE FOR THE EMC COMMUNITY WORLDWIDE

EMC² where information lives®

editor's desk Getting innovative about innovation

A few months ago, colleagues alerted me to two eye-catching headlines: "IBM Throws $100 Million at Mobile" on GigaOM.com, and "H-P Throws More Cash at Scientists" on WSJ.com.

With the headlines came a question: Is IT innovation growing ever-more expensive?

According to conventional wisdom, conducting the most advanced forms of far-reaching technology research does first require throwing a lot of cash at a corporate laboratory or think-tank. You know the places I mean—those impressive standalone technology-creation centers sited on landscaped campuses that, for decades, have unleashed upon us the transistor, the laser printer, Ethernet networking, the graphical user interface, the computer mouse, fiber-optic systems, and a thousand other game-changing technologies.

But at EMC, some advanced IT thinkers are proving that being innovative doesn't have to cost millions. These employees have been creating a research program that finds, shares, and creates knowledge without a lot of cash.

In this issue's cover story, you'll learn how the EMC Innovation Network is becoming a true IT research function for the 21st century—members are investing in academic partnerships and are using social networking to structure linkages throughout EMC and beyond it.

In doing so, they are creating a work-benefit/career-development engine for a lot of EMC people, they are fulfilling a competitive necessity, and they are likely shaping customers' perceptions of EMC in some very nice ways.

EMC operates in dozens of countries, many of them with cities boasting renowned technology-research or university districts. An innovation infrastructure already exists. EMC is making the most of it.

Our company has grown in large part by acquisition, and we now have a heterogeneous culture well-suited to being innovative about innovation. When a company is this full of people looking at different problems in different ways and bringing different viewpoints to the information they are being exposed to, it can translate into a real competitive advantage.

We have the ability to do so much more for customers and the IT industry by forming these connections within our walls and outward to the scholarly world—networking our product development groups, our advanced technology teams, and our innovation forums.

So, must sophisticated IT research cost millions? I think I'm seeing the catalyst for a very disruptive answer to that question.

Monya Keane

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EMC.now, *winner of 26 industry awards for communication excellence.*

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COVER PHOTOGRAPH BY ASIA KEPKA

from the tell emc files

THE past quarter's feedback included a question about Data Domain and the effect of the economy on EMC's recent acquisition activity.

S.T. TELLS EMC: Given how tough the economy has been and the cost-reduction efforts we've undertaken as a company, how can the business justify buying Data Domain for approximately $1.9 billion in cash? Where do we see Data Domain fitting in, long term, with our primary storage offerings?

B.J. JENKINS, SVP OF GLOBAL MARKETING, REPLIES:
Running a sustainably successful business means balancing the short term with the long term. At EMC, we strike a balance between meeting our near-term needs—for example, reducing our cost structure when the global economy is forcing customers to lower their IT spending—with investing for our long-term competitiveness and prosperity. EMC has been on a clear path toward becoming one of a handful of strategically vital IT partners for organizations of all types and sizes.

The purchase of Data Domain exemplifies EMC's effort to balance short-term needs with long-term prosperity.

This path requires understanding major trends and disruptive technologies and investing in both our own internal R&D and in the acquisition of key technologies to ensure that we can provide what our customers need. From this perspective, I think the question really is, "Can a global leader like EMC afford not to make strategic investments like this?"

Bringing Data Domain into EMC will help accelerate our growth by building our strength

Have something to say? If you're inside the EMC firewall, go to: www.channelemc.isus.emc.com/channelemc/Tellemc/toc.asp.

in what we believe will be one of the largest and fastest-growing market opportunities in IT—the next generation of backup, recovery, and archive solutions—a market that's expected to exceed $10 billion next year.

Data Domain is a technology, product, and market leader in deduplication storage systems. Deduplication technology eliminates redundant data, significantly shrinking storage requirements, increasing bandwidth efficiency, and improving service levels with faster backups and restores. This technology is permeating the entire storage infrastructure and transforming the way our industry stores, protects, and archives information. Data can be deduplicated at the source (or client), so that a backup application sends only new, unique segments across the network to the storage device. That's what our Avamar technology does, identifying redundant data at the client, minimizing backup data before it is sent over a local or wide area network. Data can also be deduplicated as it reaches its target, whether a server or storage system. That's what Data Domain does, eliminating redundant data across multiple applications, workloads, and sites for tape consolidation and network-efficient disaster recovery.

By making Data Domain an integral part of the EMC family, we now have the industry's best and broadest portfolio of deduplication systems and software. Just as important, we'll be able to speed the execution of our strategy to provide next-generation backup, recovery, and archiving solutions for our customers. In addition, when combined with the rest of our information infrastructure solutions, these powerful deduplication technologies will help us execute our vision of cloud computing. To function properly, next-generation data centers will require a new way of backing up, recovering, and archiving information that may reside in several places: a physical data center, a new virtualized data center, or within an external cloud computing infrastructure. Customers will need the ability to automatically tier, deduplicate, and compress their enormous volumes of information.

Data Domain is forming the foundation of a next-generation backup, recovery, and archiving product division within EMC's storage business. With Data Domain as a valued member of EMC's global family, we are going to change the storage marketplace and create new opportunities for sustainable growth.◆

Symmetrix DMX returned to the silver screen in **TRANSFORMERS: REVENGE OF THE FALLEN.** The systems (rear) lent authenticity to the set of a futuristic military facility. EMC loaned the empty cabinets to the production in a subtle, economical brand-exposure effort. Last year, systems from EMC appeared in the films **EAGLE EYE** and **BODY OF LIES.**

Quarterly earnings

EMC reported second-quarter 2009 consolidated revenue of **$3.26 billion**, an increase of **3%** sequentially. Second-quarter 2009 GAAP net income was **$205.2 million**, an increase of **6%** sequentially. Joe Tucci called it "another quarter of solid execution," adding, "EMC is focused on four of the hottest, fastest-growing areas of IT spending—next-generation fully virtualized data centers; cloud computing; virtualized desktops and clients; and next-generation backup, recovery, and archive solutions. When IT markets return to more normal spending rates, we expect EMC to resume generating double-digit revenue growth."

Awards and recognition

EMC received **CISCO**'s 2008 "Multi-theatre Partner of the Year Award," which recognizes exemplary channel partners across several regions. EMC and Cisco are collaborating on creating information infrastructures combining EMC and VMware technologies with Cisco's intelligent network and Unified Computing System.

For the 10th consecutive year, EMC Global Services Customer Support Centers achieved certification under the prestigious **SERVICE CAPABILITY AND PERFORMANCE SUPPORT STANDARD**. The standard quantifies the effectiveness of customer service according to stringent performance standards and industry best practices.

THE HONG KONG ICT (information and communication technologies) Silver Award in the Best Professional Development category went to EMC APJ's Partner Enablement Program, which trains EMC partners to sell EMC's products and solutions successfully. Says Program Director Ann Yau, "It is an honor that, in the second year of rolling out this program in APJ, EMC is being recognized by the industry for its efforts."

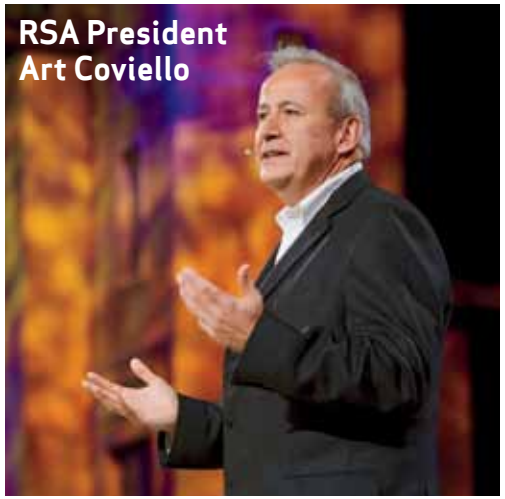
Eugene Demigillo, Manager, and Ann Yau, Director, Partner Enablement Program for EMC APJ, receive the HKICT award.

PRESIDENT'S AWARD

The 22-member Enterprise Flash Drive team captured the 2008 President's Award, EMC's highest honor. These technologists, developers, and strategists delivered flash storage for EMC Symmetrix, CLARiiON, and Celerra platforms starting in early 2008, taking the industry by storm. Joe Tucci and Vice Chairman Bill Teuber acknowledged the team's success at the Q109 Employee Quarterly Review in Southboro, Massachusetts.

CONFERENCES

Customers, partners, analysts, and journalists converged at **EMC WORLD 2009** in May. The event focused on ways to save money, maximize resources, build new service-delivery models, and align IT with business requirements. Joe Tucci and VMware President and CEO Paul Maritz discussed mega-trends shaping the industry, including cloud computing enabled by virtual data centers. In Orlando, EMC released its third sponsored IDC study tracking information growth, showing the digital universe continues to boom, despite the downturn. EMC also unveiled cloud storage service and information management offerings and expanded data deduplication and backup and recovery technologies.



Nearly 15,000 security professionals attended **RSA CONFERENCE 2009**, the largest information security event of the year held in April in San Francisco. In his keynote, RSA President Art Coviello outlined the forces leading to "inventive collaboration" in the industry: escalating global cyber threats, online fraud threats, intellectual property theft, internal attacks, and vandalism due to the economic downturn.

STRATEGY

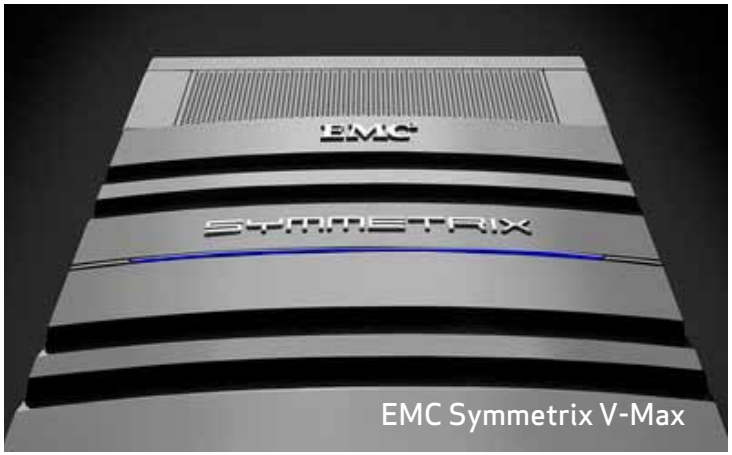
datadomain

EMC completed the acquisition of **Data Domain, Inc.**, on July 20. Data Domain President and CEO Frank Slootman said, "We are pleased to see the merger with EMC becoming a reality. We envision a great opportunity to accelerate our business through EMC's massive worldwide distribution network and customer base, and we can't wait to begin seeing that play out in the marketplace."

EMC acquired **Configuresoft**, a provider of server configuration, change, and compliance management software, with whom EMC had built a successful OEM relationship. EMC Server Configuration Manager and EMC Configuration Analytics Manager, formerly Configuresoft products, have been rebranded as **EMC Ionix** along with EMC ControlCenter and technologies from earlier acquisitions Smarts, nLayers, Voyence, and Infra—all previously parts of the Resource Management Software Group.

THEY RAN AS ONE

Team EMC fulfilled its goal to "Run as One," completing the 113th running of the famed Boston Marathon. The 18 employees, one customer, and one partner hailed from 12 countries, forming EMC's first truly global marathon team. All the team members completed the race and crossed the finish line. Their contributions, matched by EMC, raised $114,500 for the Michael Carter Lisnow Respite Center, a Hopkinton-based non-profit organization.



EMC Symmetrix V-Max

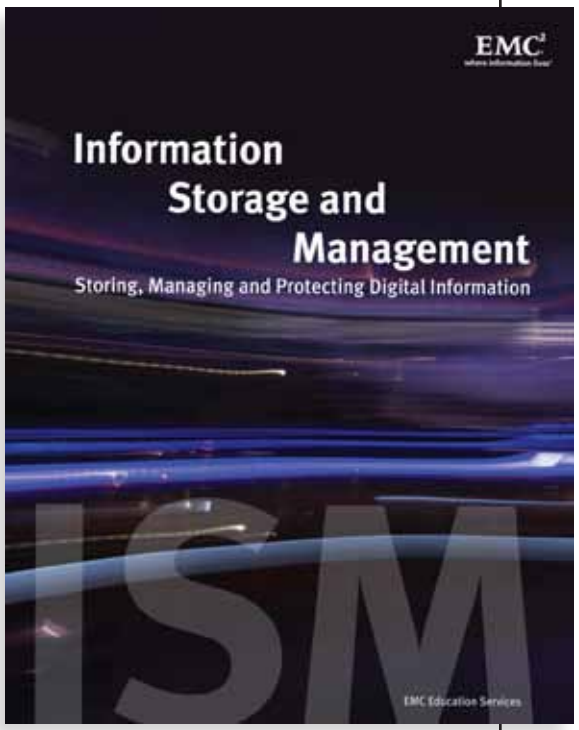
NEW PRODUCTS

On April 14, EMC unveiled the **EMC VIRTUAL MATRIX ARCHITECTURE**, an advanced storage architecture supporting virtual data centers, and **SYMMETRIX V-MAX**, a powerful, high-end storage array. With Enterprise Flash, Fibre Channel, and SATA drives, V-Max meets the widest range of requirements for high-performance, high-capacity storage in a single system.

Also in April, EMC introduced integrated information governance through **EMC SOURCEONE**—products and solutions for archiving, e-discovery, and compliance—replacing EmailXtender in the e-mail archiving market. Employees beta-tested SourceOne in Q1, providing vital information to development and support teams pre-release.

REFERENCE BOOK

Forty EMCers from Education Services, the CTO Office, and Engineering collaborated with tech publisher John Wiley & Sons to produce *Information Storage and Management*, a reference book for IT administrators. Content focuses on concepts, rather than products, and is intended to educate current and future storage professionals.



SUSTAINABILITY: In May, EMC published its "Looking Inward, Outward, Ahead" sustainability report. The report describes how EMC employees contributed to the sustainability of the company, environment, and community in 2008 and presents goals for 2009 and beyond. Read it at: www.emc.com/about/global-citizenship/2008-sustainability-report.htm.

Research collaboration expands

The EMC Innovation Network takes its next steps

BY BURT KALISKI AND ROB MASSON

ASIA KEPKA

BURT KALISKI (L.) AND ROB MASSON are, respectively, Senior Director of the EMC Innovation Network and Director of EMC Research Cambridge. Their two-part research mission is to expand knowledge and strengthen relationships.

THE GREAT THING about starting a corporate research program in the 21st century is that right away, the researchers in the program begin using teleconferencing and social media to transfer their knowledge to colleagues all around the world. That's certainly what happened when the EMC Innovation Network was started by our CTO, Jeff Nick, two years ago.

Today, our research groups connect into the company from any location; thus, we don't need to locate them physically near a corresponding product development organization. (The best "cross-cutting" research usually influences more than one development organization anyway.)

At EMC, we're not building multi-million-dollar advanced development centers. We're placing our advanced researchers near the universities that can help us understand what's on the information technology horizon and connecting them to the company's already remarkable R&D.

KNOWLEDGE TRANSFER ON A GLOBAL SCALE

The first new research group in the Innovation Network—EMC Research China—shows us that this approach works. Directed by Dr. Wenbo Mao in Beijing, EMC Research China is based near large universities in the Zhongguancun district, known as China's "Silicon Valley."

The Innovation Network program follows a simple model: "Expand knowledge locally; transfer it globally." A clear connection exists between the advanced research underway at EMC Research China and the product R&D happening at EMC labs in Beijing, Shanghai, Santa Clara, Seattle, Cambridge, and Hopkinton.

Around the world, EMC has access to top local

talent inside and outside the company. We make the most of that access by pursuing research in each region that matches that region's strengths. And we network the results together.

Our advanced researchers wear two hats. First, they expand EMC's collective knowledge in strategic areas of technology (such as cloud information management or trusted virtual infrastructure, two areas EMC Research China is exploring). Second, they transfer knowledge to EMC's product-development teams. For instance, they'll inject insights about trusted infrastructure into proofs of concept being built to test utility computing practices.

What they *study*—often in the context of university collaboration—can be general. What they *teach* is specific, and it is targeted to the development organization responsible for a particular EMC technology.

This continual flow of knowledge to different audiences in different timeframes and in different styles defines our research mission. Our researchers are not developing products; they're not closing business. Rather, they're providing valuable insights to employees who do perform that important work for the company.

We do not need a large research organization to conduct advanced IT research really well. What we need is a large research vision blooming within EMC's even larger, established, product-focused R&D operations. We need EMC's advanced technology researchers and its product developers to work with each other and with academic institutions to accelerate innovation.

KNOWLEDGE WORKS

The goal of all this "knowledge work" is straightforward: to cost-effectively infuse the company's decision-making with privileged insights into emerging technologies and trends.

The insights are "privileged" because, although much of the information we gather is available to other companies, it's complicated to determine how to put that information into practice. The problem in the research community isn't a lack of information about what's coming next; actually, there's too much information. The way to sort through it is to be there as it's being produced.

For example, EMC Research China has worked for a few years on the Daoli Trusted Infrastructure research project—collaborating with Fudan University, Huazhong University of Science and Technology (HUST), Tsinghua University, and Wuhan University. The research effort explores how, in a multi-tenant computing environment such as a cloud, tenants can be protected from one another

and the platform itself can be protected from the tenants. (Multi-tenant environments are a bit like "apartment buildings of IT." Rather than providing shelter, they supply IT platforms to large numbers of independent tenants.)

Today, for the most part, those tenants rely on the reputation of the cloud provider to keep them and their platforms secure. But as more cloud providers start competing with each other on cost, a good reputation won't be enough.

Our researchers are collaborating with these Chinese universities to understand new ways to protect tenants by, for instance, combining trusted computing with virtualization.

The Daoli project manifests itself in various ways. A public wiki (www.daoliproject.org) contains research material. University and industry collaborators discuss developments unfolding in the field. And participants sponsor academic events such as the Asia Pacific Trusted Infrastructure Technologies Conference organized in China by HUST in October 2008. Members of the EMC Innovation Network are continually present in the collaborations, interfacing the new knowledge to the rest of EMC.

In July 2009, EMC officially joined the MIT Media Lab as a Consortium Sponsor. Efforts are focusing initially on new models for data ownership and usage, interfaces for social and business transactions, and technologies to help consumers take control of their healthcare management. As part of the sponsorship, EMC gains full access to the lab's research environment.

BRIAN KEEGAN

APPLYING LESSONS FROM CHINA

Lately, we've turned our attention to Cambridge, Massachusetts. EMC has strong, long-term relationships with many Massachusetts universities, so our technology collaborations in the Boston area aren't new. But our model is improved.

In China, we saw first-hand the value of having a research-exploration group that is separate from product and business development teams. In our Innovation Network model, this group doesn't need to be large; it just needs to be focused and chartered.

We're applying those principles to our Boston-area presence.

Beyond learning about emerging technologies and trends, we want to get to know the people investigating them. We're building a people-network in the Boston academic world. We have tremen-

dous supporters who introduce us to their academic colleagues and show us where interesting things are happening. We'll expand our contacts and continue to gather information, meeting with faculty and students, attending seminars, and visiting labs.

The culture at MIT is especially helpful. We've been greeted warmly and been invited to work and socialize with faculty and students in various labs. We're also inviting university researchers to speak at EMC's offices—local events that have global outreach via videoconferencing, wikis, blogs, and other mixed media.

Our Innovation Network already is a collaboration among advanced technology groups from different EMC business units. In Cambridge and Boston, we're going a step further, as business units around EMC are placing some of their people into our advanced research group on a part-time basis. They complete a core group headed by the corporate CTO Office, which includes Dr. Ari Juels' team from RSA Labs sponsored by the RSA Security division. We've partially implemented this model in China, too.

These "virtual" research positions demand, at present, a one-day-per-month commitment. (Despite being a virtual team, we do have physical meetings.) In Cambridge, team members will attend seminars, talks, and luncheons focused on

What's EMC doing at the Massachusetts Institute of Technology?

Boston's universities offer so many academic connection points. We'll pursue them one step at a time.

Our EMC Research offices at 11 Cambridge Center, are, in fact, mere steps from the campus of one of the world's most well-regarded research institutions—MIT.

So that's where we're starting. We are linking ourselves into the breadth of information-related research programs happening at the MIT Media Lab, the MIT Sloan School of Management, the MIT Computer Science and Artificial Intelligence Lab, and MIT's other famous labs, with varying degrees of sponsorship.

It's natural that we'd want to devote lots of attention to interacting with MIT; it offers us a huge set of interesting, even visionary information-infrastructure topics to explore.

areas of relevance to their business unit. They'll involve their colleagues at EMC when possible and report back to their business units what they see and hear. This tight connection:

- Bridges gaps between EMC Research and EMC's product development groups.
- Helps our technologists evangelize to the product groups the advances happening in academic labs, and, ultimately, influences our product roadmaps positively.
- Exposes university researchers to real-life use-cases revealing the commercial opportunities their advanced research might someday spur.
- Finds opportunities for our employees to work with the world's top university researchers and perhaps even co-author papers.

Obviously, really deep technology explorations require full-time researchers. We anticipate that organizations motivated by the initial engagements will want to try-out, over time, a combination of

Beijing's Zhongguancun district is known as the Silicon Valley of China. More than 12,000 high-tech firms operate in the district's technology parks, including EMC Research China, the first research group in the EMC Innovation Network, based at the EMC China R&D center.

CHARLIE FONG

internships and rotational assignments to increase the engagement level.

We want to partner with other companies, too, to align or combine funding to increase the investment in exploring the same base of knowledge. Accordingly, we're inviting corporate strategic partners to join us. As we sponsor research together, we pursue conversations on the side about how our companies can mutually take advantage of the lessons learned.

Similarly, as we network with academic researchers, we're likely to hear about startups and early-stage efforts to commercialize research results. Our own business-development teams can help raise those activities to the next level, perhaps by providing venture capital, or maybe through a strategic partnership.

We'll also conduct business planning and market assessments to keep ourselves on track with the commercial potential of advanced IT research happening at universities and will look for opportunities to accelerate sales via those connections.

LOOKING BEYOND THE HORIZON

Within the context of R&D, there is always an activity of exploration and discovery. The resulting knowledge then flows into the engineering and development of new products.

What we are doing is focusing entirely on that "R" in R&D. Those of us in EMC Research are not building anything or identifying what the next generation of a product should be. Instead, we're asking, "What can we help EMC to explore?" "What can we help EMC to discover?"

We see ourselves as the facilitators—the introducers—to connect the company's R&D with university research. Like a ship's radar screen looking beyond the visible horizon, pinpointing where obstacles and opportunities are, our mission is to help EMC chart the best course to the future. Academic IT researchers at universities don't think about "product categories" or launch dates; they think about how the entirety of IT is evolving. We are connecting their dots of inspiration with EMC's.

At a time when EMC must get more from its current monetary investments, the research program must be innovative about how it moves beyond what the company looks like today. If EMC is to be effective with the resources it already has, then it must align those resources internally and externally.

It can be done—as we chart a course together toward the next horizon of technology. ◆

➜ READ MORE: http://www.xconomy.com/boston/2009/06/24/emc-opens-research-arm-in-cambridge-joins-mit-media-lab-as-sponsor/

Taking a cross-company look at how we all spend.

Ready, set, save

John Herrera is one of the people driving the EMC-wide cost-reduction strategy. He's been focusing on rapidly adjusting the company to current economic conditions while establishing long-term ways to keep expenses under control. *EMC.now* caught up with the company's VP of Global Delivery to get an inside view of what EMC is doing to save pennies, dollars, euros, yen, etcetera—all around the globe.

WHEN AND HOW DID WE LAUNCH THE COST TRANSFORMATION PROGRAM?

John: Many of EMC's cost-saving programs have been in place for more than a year; however, we kicked off the full Cost Transformation Program in mid-2008. It was designed to focus primarily on all of our non-people-related expenses. The program as a whole is sponsored by our CFO David Goulden and supported by senior EMC leaders and teams globally. I manage the program.

We went to work very rigorously analyzing all of our current expenses, and we looked for opportunities to reduce costs in the short term. However, we also saw a big transformational opportunity in front of us if we could succeed in accomplishing long-term adjustments of cost for the company in ways that still enable us to scale up when the downturn is over.

HAVEN'T SIMILAR EFFORTS HAPPENED IN THE PAST?

Yes, there have been other efforts, including the creation of the Office for Cost Efficiency, in the past. But nothing has been as extensive as CTP. Most previous efforts tended to be more departmentalized, and they focused on specific functions.

CTP is not only more all-encompassing, it also is unfolding at a more rapid pace. Above all, we are extremely interested in achieving systemic change, rather than simply taking a Band-Aid approach.

JOHN HERRERA, VP OF GLOBAL DELIVERY (R.), WITH GLOBAL EXPENSE OPTIMIZATION MANAGER MICHAEL LEBLANC.
John says, "We believe the opportunity is greatest when we focus on long-term improvements rather than just on short-term targets. In the end, we believe, the biggest benefits will come from transformational changes."

BUT HOW DO YOU FIND THE RIGHT BALANCE? HOW DO YOU HELP EMC SAVE THE MONEY WITHOUT HURTING PEOPLE'S PRODUCTIVENESS?

We didn't set out with a predefined approach or a specific balance of short-term versus long-term goals. As much as possible, we have tried to assess each spending area individually. Obviously, when we found areas where we believed we could make short-term adjustments that wouldn't negatively affect our people or our business, we have pursued them.

Nonetheless, we believe the opportunity is greatest when we focus on long-term improvements rather than just on short-term targets. In the end, we believe, the biggest benefits will come from transformational changes.

WHEN YOU ARE RUNNING A LARGE PROGRAM LIKE THIS, ONE THAT TOUCHES SO MANY PEOPLE, HOW DO YOU ATTAIN BUY-IN AND ONGOING SUPPORT?

Communication. From the start, we have tried to talk to everyone about the impact of all the small changes. However trivial all those "little" achievements may seem individually, taken together, they represent a substantial amount of money. David has been writing and sending detailed messages to everyone on this theme, and by engaging with employees early and repeatedly, he is reinforcing the importance of CTP and reminding us of the rewards it is delivering to our company as a whole.

DOES CTP GENERATE FAN MAIL, HATE MAIL, OR BOTH?

In general, the feedback has been positive. Employees really do understand that we are trying to make changes with as little impact as possible. In one recent message about CTP, David made the point that these changes can save additional jobs. So, in general, everyone has been supportive.

We have received negative feedback only when some kind of implementation hiccup occurred or when people felt the changes had brought about unpleasant challenges. For example, we changed the wireless phone policy and received dozens of questions and comments. We promptly made a few adjustments and sent out a clarification FAQ.

We do learn a lot from those kinds of communications. And, when we respond quickly to feedback like that, it is received very well.

TRAVEL-POLICY MODIFICATIONS SEEM LIKE A MICROCOSM OF HOW CTP WORKS. CAN YOU EXPLAIN WHAT KINDS OF CHANGES YOU HAVE MADE AND WHAT THEY HAVE ACHIEVED?

Among other things, our analyses uncovered suboptimal hotel-spending patterns. While we already had a number of preferred hotels when we started

CTP, we found that there was an opportunity for EMC to better leverage its corporate volume-buying power because no one had really approached these vendors in a formal, structured way to negotiate better rates.

Through strategic reductions in our number of preferred hotels per city, aggressive negotiations, and increased internal compliance, we found substantial opportunity for sustained savings. We are now averaging about a 20% lower room rate than previously—obviously, that's a very significant reduction. And we accomplished it without lowering the quality of the accommodations.

WHAT ABOUT NON-TRAVEL CHANGES?

We are seeing successes in all of the CTP work streams and in interesting ways. For example, one initiative underway in the IT space involves completely leveraging VMware technology to reduce 1,600 old physical servers to 40 large servers running virtual machines. This is saving us not only costly data center space, but also high-cost electricity.

We have implemented new purchasing programs to better leverage EMC's spend globally, and we have developed a strategy to better utilize our facilities and enhance our collaboration by forming R&D hubs on the Metrowest campus.

ISN'T ANOTHER CHALLENGE TO EXTEND CTP GLOBALLY?

We are a global company, so we have to put the right policies in place everywhere. We do sometimes need to tailor the program to different geographies. Travel policies, for example, often must be adjusted regionally because of significant differences in local practices and local accommodations.

HOW DO YOU THINK CTP HAS PERFORMED SO FAR, AND WHAT'S ON THE HORIZON?

The results of all of this, so far, have been very promising. At the start of 2009, David announced an estimated savings of $350 million for FY 2009, and we have expectations of $500 million in savings for 2010. Specific achievements include more than $50 million in travel and telecommunications savings, $25 million in contract labor savings, and $7 million in savings from field-office consolidations.

As far as looking forward goes, we know that a lot of this effort centers on changing EMC's underlying cost structure so that as the economy recovers, we can grow aggressively again without losing all of those savings. ◆

Next page: Way beyond bean counting >>>>

Way beyond bean counting

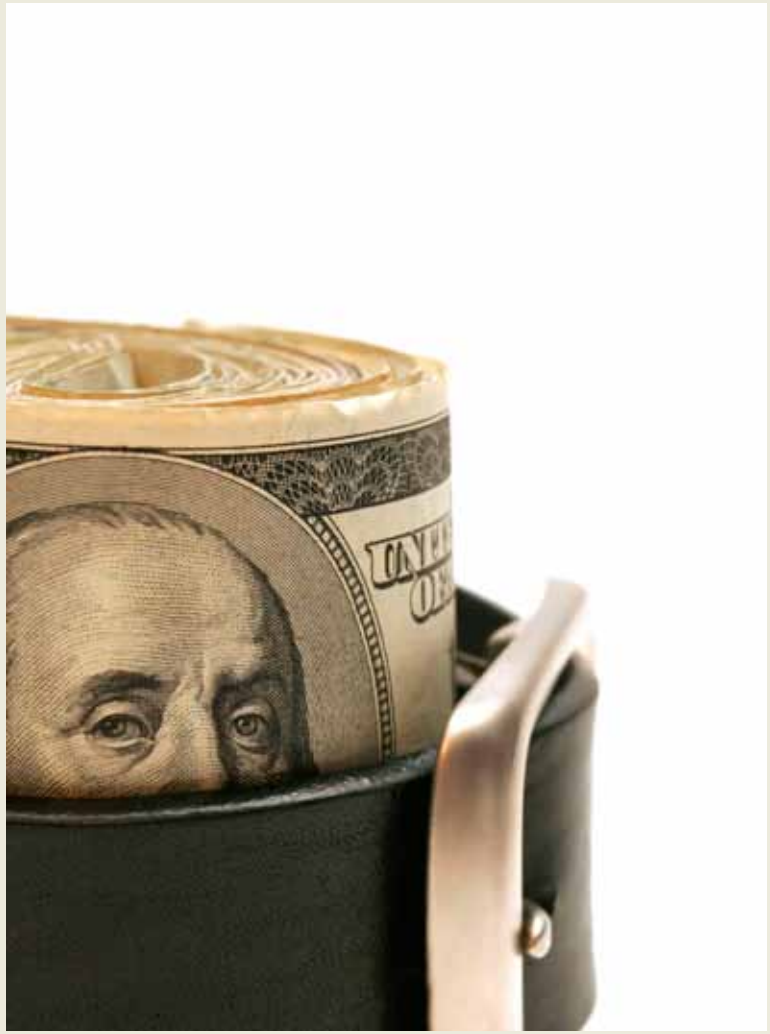
When companies need to adjust spending, it is not uncommon to hear some people dismiss the effort as "bean counting"—a metaphor that implies a rather trivial, even pointless effort.

But there's nothing trivial about the work being done by Michael LeBlanc, a manager in EMC's Global Expense Optimization (GEO) organization, who is tasked with improving the company's travel spending.

Indeed, according to Michael, the kind of work he and his team do is in many ways as leading-edge as the work done by people in charge of IT thought-leadership marketing. "We are constantly researching how EMC is spending money and trying to understand how all of us could spend it more effectively," he says.

Michael is working with other members of GEO, for example, to build a travel-spending data repository to give managers information and tools to see how much money is being spent and how that spending correlates with their goals.

"In the past, we were asking executives to 'do a better job of controlling expenses' without giv-



Way beyond bean counting

ing them sufficient visibility into how these extremely multi-faceted budgets were being spent," he says. With the travel-spending repository, managers will have better points of comparison and tools for analysis—and they'll be able to alter that spending more quickly. "We can then build-in more accountability—that way, when business conditions change, we can adapt better," Michael says.

EMC CFO David Goulden emphasizes the creative aspects of the CTP effort. "Costs exist at multiple levels," he says. "But because people are tied to particular organizations, they tend to see costs through those particular organizational silos." With that fact in mind, David's organization took a cross-company, independent "view of the world" that aimed to provide similar points of comparison: a common vantage point for looking at spending in areas as disparate as IT and real estate.

Almost like a research project, they stepped back from the usual boundaries to really understand how the company spends its money. It was no longer about "costs," it was about finding opportunities to invest in efficiency, or as David puts it, "It's not so much about slashing spending as it is about spending strategically."

For example, EMC is investing in advanced videoconferencing capability (see next story) because it's a proven way to make people more productive. That is not just a matter of saving airfares; it is a matter of making better use of people's time.

Still, Michael admits, change can be difficult. "You have to empathize with people and pick your battles," he says. "Some people will always say, 'What's the big deal? You are nickel and diming me.' However, overall, in this economic environment, people know it needs to be done. Our challenge is to demonstrate that the effort is succeeding, so that employees can see the savings and understand that the work we are doing isn't at all about putting pain into anyone's work life."

Virtually no illusion...

SEEING *really is* BELIEVING

E-conferencing is helping far-flung EMCers meet face to face without ever leaving the office.

PLEASANTON, NICE TO SEE YOU:
The Rockies conference room at EMC headquarters in Hopkinton underwent remodeling to meet optimal specifications for a three-screen TelePresence setup. The room is now sound insulated and features blackout curtains, non-reflective walls, and special lighting. It, along with similar rooms at EMC's offices in Brentford, U.K., and Pleasanton, California, went live on June 22, 2009.

Seeing really is believing

AS LATE AS the 1920s, the telephone was still so alien to the business world that many people avoided phones entirely in favor of in-person visits ... despite the extra time that travel involved. Talk wasn't cheap back then, in any case. When AT&T launched commercial transatlantic two-way radio service to London in 1927, the charge was US$75 (equivalent to $919 today) for a three-minute call.

Since then, phones, cellphones, conference calling, e-mail, and texting have become economical and pervasive. In the late 1980s, the first quasi-practical videoconferencing systems emerged.

Today, EMC uses the videoconferencing gold standard of the 21st century. Cisco TelePresence systems—the newest jewels in EMC's e-conferencing crown—will save EMC a lot of money and time while shrinking its carbon footprint.

Michelle Kerby is a Sr. Manager of Global Expense Optimization, supporting EMC's Cost Transformation Program. She says the company has made significant investments in deploying TelePresence centers across 11 sites globally, trying to enhance communication internally and with customers while cutting travel costs and making people more efficient.

The systems feature three high-definition monitors and dedicated communication channels that eliminate latency and certainly provide the illusion of meeting across a table rather than hundreds or thousands of miles away. EMC's rooms are set up identically, making the impression even more believable.

Two rooms have run at EMC (and have received rave reviews) for two years—they are located in the Hopkinton and Santa Clara Executive Briefing Centers. Now more sites are either operating or about to launch, including rooms at 176 South St., 228 South St., Cork, Pleasanton, Shanghai, Singapore, Brentford, Bangalore, and McLean, Virginia. Plans call for 11 three-screen systems and 14 one-screen systems, 25 in all. Locations are selected based on their money-saving potential.

Kathy Merz has managed the Hopkinton EBC site since the room was built. "I had no previous experience with running anything like this, and actually, managing it is just a small part of my job," she says. "But I quickly found it very easy to use."

EMC looks for every way to keep employees efficient. Traveling by air is not efficient. The systems enable people to accomplish more in less time—namely, in less travel time. "This is a huge factor for our briefing centers," Kathy notes. "We can 'send' a Hopkinton-based EMC expert to a Santa Clara customer briefing without having to fly them there."

Provocative stats

EMC's American Express booking data from Q308 to Q209 offers clear evidence that e-conferencing makes sense. According to the data:

17% of tickets booked by employees were for travel between existing or planned TelePresence locations. Videoconferencing will be a viable substitute.

23% of trips to now-planned TelePresence locations were same-day trips, and another **15%** covered just a night's stay—these trips may be avoidable.

INCREDIBLY REALISTIC

Users quickly become comfortable with the system. Still, Kathy likes to seat new EBC presenters in the TelePresence room before customers arrive to give them time to move beyond the "wow" factor. First-time presenters usually need a minute or two to become accustomed to looking into a camera rather than directly at peoples' screen images. After that adjustment, it all seems natural, just like being in a regular room.

"The first time we spoke with people in Santa Clara, I remember being amazed at how detailed everything was, from the audio clarity to the carbonation bubbles rising in someone's drinking bottle. It was as if I were right there," Kathy says. (Ed. note: Food and drink are no longer permitted in the rooms.)

Kathrin Winkler, Sr. Director of Corporate Sustainability, says, "A year or two ago, I participated in a TelePresence event involving EMC and another company. By chance, months later, I was introduced to one of the participants in person. He said, 'Haven't we met? You presented to us, but I can't remember if it was at our site or yours.' I replied, 'We did meet, through a screen, at both of our sites!'"

MORE THAN VIDEO

E-conferencing—audio, web, and video—is obviously strategically important to EMC, a company with physical facilities in more than 60 countries, with 40% of employees working outside the U.S., and doing business in 100 countries.

"We have to be able to connect effectively," Michelle says. "The experience of meeting in person

will never be supplanted, but it can be supplemented."

Only a few TelePresence centers have been installed at EMC so far, and the company continues to offer employees Microsoft Live Meeting and Polycom audioconferencing setups.

Altogether, Cisco TelePresence, Microsoft Live Meeting, and Polycom support internal and external meetings nearly everywhere EMCers work. These systems dramatically reduce the time required of participants, and they are slashing EMC's travel costs.

"From a strategic standpoint," says EVP and CFO David Goulden, "Our subject-matter experts will engage with each other and with our customers in more ways, and in more locales, than ever before. In 2008, we held more than 300 meetings using Cisco TelePresence alone, saving 3,000 hours of employee travel time. Every day, 500 hours of virtual meetings are conducted around EMC using Microsoft Live Meeting and Polycom, cutting even more nonproductive travel time."

Just as telephones appealed only to the business world's early adopters 100 years ago, videoconferencing, still rather uncommon, will eventually be widespread. "At the moment, the technology really only works within our firewall and with a small number of partners around the world," Michelle admits. "But we are working with a vendor that is helping us to connect to customers and prospects via TelePresence, and that will really open the floodgates."

IT'S COOL TO BE GREEN

Then there are the environmental benefits—an increasingly important measuring stick for any business initiative. Says Kathrin, "E-conferencing provides a very effective alternative to business travel, which is a major source of greenhouse gas emissions regardless of whether the traveling occurs by car or plane." Indeed, thanks to travel policy changes, increased e-conferencing, and the overall money-saving ingenuity of employees, EMC's travel-related carbon emissions declined by 29% in 2008 from 2007 levels.

Kathrin says acceptance of the technology is part of the challenge ahead: "People tend to resist change, and it is true that in certain situations, being there in person can be crucially important. But as people get comfortable with this technology, they broaden their vision of what they can accomplish with it—they mentally expand what they see as being possible."

On a recent trip to Dubai, for instance, Kathrin joined a web conference in which six people participated remotely (albeit for some, at 3:30 a.m., with one person wearing the inventive dress-shirt/tie/

pajama-bottom combo). The right experts were present, the interaction was flowing, and Kathrin in Dubai was providing the in-person touch. "It was the best of both worlds," she says.

On another occasion, the IT industry organization The Green Grid, which Kathrin supports as board member and EMC representative, held several meetings via Cisco TelePresence. (More than 400 organizations globally use TelePresence.) "We met with people in Austin, Texas; San Jose, California; and Boxborough, Massachusetts," she recalls. "We accomplished an amazing amount of work. Nobody had to travel more than an hour by car."

Slowing climate change will require changing how people conduct business and how they lead their lives. Technology itself isn't an obstacle, Kathrin believes, rather, it is how we use technology: "It's not a matter of just driving more efficiently; it is a matter of driving less." In that context, e-conferencing can help establish new norms, as phones did decades ago. "Over time, people will view face-to-face meetings as being less necessary and potentially wasteful. I do think we'll witness that cultural shift," she says.

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

Because business travel can be no fun at all

E-conferencing connects customers and partners with EMC execs and subject-matter experts, and it lets employees meet with their colleagues around the world to deliver presentations, hold staff meetings, conduct interviews, take training, view webinars, and more.

Next page: Where the screens are >>>>

Where are these rooms?

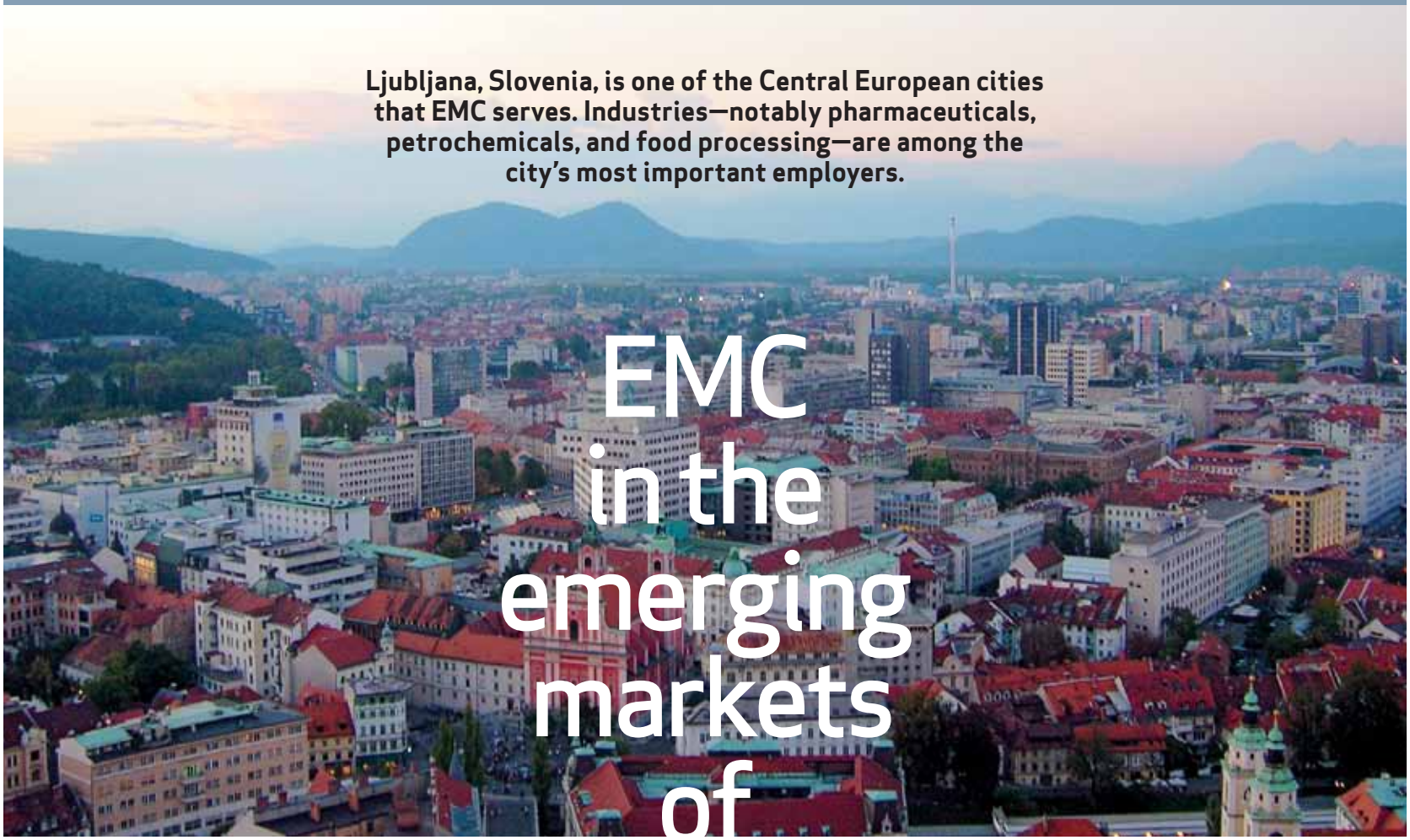
Meetings are necessary, but spending time traveling to them is not, especially when face-to-face collaboration requires crossing borders and oceans. Instead, more EMC employees are using the company's extensive set of e-conferencing tools to conduct meetings.

INDICATES
a one-screen or a three-screen system at that site.

LOCATIONS

1. *Hopkinton, Ma.*
2. *McLean, Va.*
3. *Atlanta, Ga.*
4. *Dallas, Tx.*
5. *Los Angeles, Ca.*
6. *Santa Clara, Ca.*
7. *Pleasanton, Ca.*
8. *Seattle, Wa.*
9. *Chicago, Il.*
10. *New York, N.Y.*
11. *Bedford, Ma.*
12. *Cambridge, Ma.*
13. *Cork, Ireland*
14. *Brentford, U.K.*
15. *Paris, France*
16. *Tel Aviv, Israel*
17. *Beijing, China*
18. *Tokyo, Japan*
19. *Shanghai, China*
20. *Hong Kong, China*
21. *Sydney, Australia*
22. *Singapore*
23. *Bangalore, India*

Ready to ride a new wave of growth after hiatus



Ljubljana, Slovenia, is one of the Central European cities that EMC serves. Industries—notably pharmaceuticals, petrochemicals, and food processing—are among the city's most important employers.

DAMIEN SMITH

EMC in the emerging markets of Central Europe

Perhaps there are as many ways to define Central Europe as there are historians and geographers studying the region.

Some academics look to the Middle Ages, with one noting in Wikipedia that a "criterion for defining Central Europe is by using the frontiers of medieval empires and kingdoms that largely correspond to the religious frontiers between the Roman Catholic West and the Orthodox East." Others say Central Europe is the area once dominated by the traditions of the Habsburg Empire and Empire of Hungary, or that it is simply "the place where East and West collide."

But for EMC, historian Charles Ingrao's characterization rings true. He calls the region "one of the [world's] richest sources of creative talent."

That richness is helping to drive EMC's recently intensified interest in the region, says Els Willems, Human Resources Manager for Central Europe. "This area's workforce is highly educated and very tech-savvy," she says. "No one disputes the excellence of universities across the entire region. The people who are graduating from those institutions definitely have the knowledge and skills that we need at EMC."

Paul St. John, EMC's Regional Director for Central Europe, reports that tremendous enthusiasm is ubiquitous among young people in Central Europe. "And their parents, many of whom survived terrible political and economic crises, are very encouraging. They view getting a position at a global company such as EMC as a huge opportunity for their kids."

MINING THE REGION'S WEALTH

EMC is hardly alone in its bid to leverage the wealth of talent and the business prospects of Central Europe. In fact, since the Iron Curtain fell in 1989-1992, businesses from all over the world have sought to take advantage of the region's unique energy and growth potential.

From the mid-1990s through 2007, the area enjoyed fantastic economic growth—8% or 9% year-to-year growth was common across the region, a result of the establishment of vibrant market economies.

But just as the rest of the world suffered

The major Central European industries that EMC serves include:

- Public sector
- Banking/financial
- Telecommunications
- Healthcare
- Energy
- Manufacturing (specifically automotive)

in the current recession, Central Europe saw its GDP growth rates erode to nothing, with some areas actually experiencing alarming declines of 12% to 13% in the first two quarters of 2009.

However, some analysts (including those from the World Bank and Swedbank) now expect to see significant improvement throughout 2010 and are forecasting a return to growth in 2011.

EMC serves these Central European countries:

- Albania
- Austria
- Bosnia and Herzegovina
- Bulgaria
- Croatia
- Czech Republic
- Estonia
- Hungary
- Kosovo
- Latvia
- Lithuania
- Macedonia
- Montenegro
- Poland
- Romania
- Serbia
- Slovakia
- Slovenia

It's a tumultuous time. But opportunities do remain for companies that understand the culture and needs of this region.

"Customers and prospects will continue to invest in order to cut costs and increase profit," Paul confirms. When an IT solution fills a business need (for example, EMC's Content Management and Archive solutions) and when it cuts costs (for example, EMC's storage or network management solutions), companies will invest.

As companies buy the solutions that can help them transform their IT organizations from cost centers to profit centers, many companies are "looking at more services, consulting, and productivity tools, beyond just hardware," Paul says. "Clearly, the purchasing pace dipped in 2009. But it is expected to rebound next year, and in fact, we are already seeing an increase in year-over-year business for EMC in places such as the Czech Republic, the Balkans, and the Adriatic region."

Funding and investment by European Union countries are making an impact on Central European public-sector projects, including projects tied to healthcare and the military. Some of the investments involve IT infrastructure build-outs and improvements.

Also, the International Monetary Fund expanded its crisis funding to help Central European countries keep their heads above the waves of economic uncertainty. Two countries quite hard-hit by the recession, Hungary and Latvia, have already received €10 billion in IMF emergency funding.

A LOWER COST OF DOING BUSINESS

As EMC's Prague-based Czech Country Manager Michal Fiser points out, other conditions, too, are working to help the region extricate itself from the recession's grip.

"IT is still underdeveloped in the Central Europe-

an region, and these companies need to continue to invest—not just to function efficiently, but also to meet certain standards, including, of course, European Union membership requirements," he says.

Michal explains that a low cost of doing business provides another moderating factor. "In an effort to find cost-saving opportunities, some companies headquartered in Western Europe and the U.S. are moving data centers and manufacturing to Central Europe," he says. "Those activities, in turn, create opportunities for us."

One example of the trend is the establishment of dozens of new auto and auto-parts manufacturing facilities across the region. According to a 2008 report by KPMG International, the region as a whole "is expected to double production [of autos] in the decade between 2001 and 2011, eventually topping six million a year for the entire region. In comparison, global production will grow by 4% overall, and manufacturing in Western Europe is expected to remain flat, and possibly decline slightly."

It's notable that people in Central Europe have been reacting somewhat distinctively from much of the rest of the world to the worldwide economic crisis.

Paul says, "Here, people have a different view of what constitutes a 'crisis.' In the not-so-distant

MASTI

WARSAW'S TELEKOMUNIKACJA POLSKA S.A. TOWER. EMC already serves all of Poland's major telcos and 18 of its 20 largest banks, but the country's commercial segment is offering fresh soil for cultivating new business.

Jasmina Stritar, leading by example

The team led by Southeastern Europe Area Manager Jasmina Stritar is leading by example. The team works very hard to be perceived as a force for driving change.

"That's the best kind of recognition we could ever want," Jasmina says. "This is not just about collecting revenue. We should see customers as being with us forever. Therefore, we treat these relationships as the valuable, long-term connections that they should be. I believe the technologies and opportunities for innovation that we and our partners bring to this region are incredibly important—they are important to our customers and to improving life for so many people in our area."

past, a tremendous amount of conflict coincided with the end of the Soviet influence and the Balkan crisis. People know how to deal with, and respond to, crisis situations. There isn't, therefore, the same sense of panic you see elsewhere. Regardless of this, we still observe much more planning and scrutiny going into every purchase."

Bernhard Grubelnig, EMC Technology Solutions Manager, Central Europe, believes it is the power of EMC's relationships within the region that will help the company continue to build business in the region, despite that increased scrutiny.

"In this recession, it has been vitally important that EMC had built long-term relationships with the biggest and most valuable customers in the region," he says.

BUILDING RELATIONSHIPS TO BUILD BUSINESS

EMC's approach to the Central European market is now all about building even stronger relationships.

EMC's business activity in Poland serves as an example. In that country, the first quarter of 2009 was particularly rough. Poland's currency, the złoty, had lost 60% of its value. Because people and businesses alike had borrowed quite a few dollars and euros, they suddenly owed a lot more. So, businesses were afraid to make any purchases at all.

The Polish currency devaluation made information technology—which is generally priced in dollars or euros—much more expensive. Now, EMC invoices its Polish customers in złotys to make their purchases more feasible. This move is just one way the EMC team there is partnering with customers to help them get through the global financial crisis.

Paul says, "We're working much more closely with customers now, helping them to analyze their

EPA PHOTO/CTK/LIBOR ZAVORAL

AN ASSEMBLY LINE AT CZECH CAR PRODUCER ŠKODA IN MLADÁ BOLESLAV, CZECH REPUBLIC.
IT spending by Czech Republic companies recently rose after contracting severely in the recession.

businesses, rather than just 'selling to them.' It is definitely a more personal, customized exercise. We have treated this downturn as a time to invest in solid customer relationships, so that when the collective mind-shift toward spending occurs again, we'll have a wider, more secure customer base."

Across the region, teams are building the base by reaching out beyond traditional enterprise customers to the commercial segment composed of relatively smaller businesses. In Poland, for example, EMC already serves all the major telecommunications firms and 18 of the 20 largest banks. The commercial space offers fresh soil for cultivating more business.

Also, Central European teams have been building partner and channel partner relationships more actively, and with good reason. As Paul points out, 100% of EMC's revenue in the region is formally recorded via partners.

Right now, EMC teams are working particularly closely with counterparts at Cisco and VMware to help spread the virtualization doctrine.

"We want our customers to know how important virtualization is in aiding cost-cutting," Paul says. "As the recession winds down and businesses start to refocus on optimizing for efficiency, we believe virtualization will become even bigger."

THE BEST AND THE BRIGHTEST

EMC Central Europe has been using the downturn period to refine business operations and recruitment strategies. This activity should help the company compete more effectively when the recessionary cloud lifts.

"In the high-growth years," Els says, "we were always just trying to keep up with the deal activity. It was run, run, run. This recession has actually, finally, given us some time to reflect on where we are and where we're going as a region—and to move forward and make changes with confidence."

In Central Europe before the crisis, "it was a lot easier to sell storage, and there was a lot of money with which to buy it," says Paul. "We didn't do much 'solution selling'; we were able to sell bright, shiny boxes without much effort. Now, with the crisis, and we believe it will continue after the crisis, every purchase will have to be based on a business case: What's the impact to the business? What's the risk of doing nothing? What's the return?, etc.

"The changes brought by the crisis will be transformational, as we will focus much more on services and consulting, solutions, and strategy—including virtualization—in order to survive. We are setting up that strategy now. We are optimizing our organization for this reality." ◆

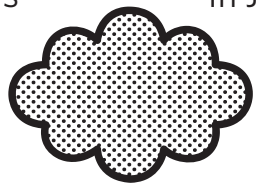
Virtualization services expand

EMC is helping customers enter a virtual world

As they move to 100% virtualized data centers, customers are looking for vendors with fresh technologies and an emphasis on service levels. EMC's capabilities in this area are growing dynamically.

WHEN A MAJOR U.S. bank needed to complete a physical-to-virtual conversion of 2,500 servers in just 18 months and define a new virtual data center model, it turned to EMC Consulting. When a major Israeli utility wanted to create a disaster-recovery system to safeguard its VMware environment, it relied on EMC Global Services. When a U.S. energy provider needed to automate recovery of its VMware Exchange environment, EMC Consulting designed the solution.

As organizations make these leaps toward a private cloud, EMC Global Services and VMware are providing resources and guidance. EMC Infrastructure Consulting Practice Marketing Lead Dave Buffo says, "Actually, the scale of our joint services and solutions does surprise people."



PRIVATE CLOUD: *An infrastructure that provides hosted services to people behind a firewall.*

LONG-TIME PARTNERSHIP DEEPENS

EMC has nurtured its VMware relationship since acquiring the company in 2003—integrating storage, data protection and management, and services with VMware server and desktop virtualization solutions.

In January 2009, EMC strengthened its alignment by becoming a gold-level VMware Authorized Consultant. (The program is now called the VMware Partner Network.) The affiliation made it easier for EMC to deliver VMware products and services and to incorporate VMware technology more broadly across its portfolio.

By June, EMC had launched more consulting, implementation, education, and residency services including the VMware vCenter Site Recovery Manager (to automate data recovery) integrated with EMC business continuity products. Additionally, hundreds of Global Services employees have been VMware certified since January. EMC also is now a VMware-authorized training center, offering courses to customers on how to use VMware technologies with tailored EMC solutions.

Steve Meyers, EMC Consulting Director, Enterprise Infrastructure, says, "Our virtualization services now extend from basic strategy to migration planning to the building out of end-state production envi-

ronments."

By working together, VMware and EMC also extend their market reach and their relationships with other big IT companies. "This services-focused partnership is helping us become an even broader IT infrastructure player," Dave confirms.

Adds Virtualization Global Competency Lead Martin Snellgrove, "We partner so openly and extensively now. And it's hard to view a premier VMware partner as 'just an enterprise storage company.'"

PRIMED FOR OPPORTUNITY

Years after the concepts of server and storage virtualization first piqued the interest of the IT world, companies were still behaving more optimistically than realistically about how much transition work would be needed. Unfortunately, "some of the world's biggest companies still are nowhere near meeting the virtualization goals they'd set for themselves two or three years ago," Steve says. "It's a huge opportunity for EMC and VMware right now."

Virtualization invariably brings cost and energy-use reductions, but despite that fact, most companies have virtualized only 20–30% of their IT environments. According to Dave, they often "hit a speed bump" while trying to adapt processes, procedures, and personnel for a virtualized environment. "Technically speaking, a server admin can create a virtual machine easily," he says. "But then procedures, employee skill sets, and management all must adapt, and the rest of the IT team must figure out how to backup the data and track the changes to the environment."

That's where EMC Global Services comes in. Its growing number of professionals with VMware expertise help companies at any stage of a virtualization journey.

EMC Consulting experts analyze customers' data sets and business objectives, then they design a virtualization roadmap with conversion activities chunked into three-year increments. Customers get advice about adapting procedures and processes for a virtualized environment, as well as business continuity and disaster-recovery solutions.

Importantly, EMC Consulting also helps with the cultural aspects of going virtual. "Stakeholders are letting go of a physical IT environment that they'd pampered for years," says Steve. "A mindset change must take place."

Martin agrees, estimating that the act of virtualizing an IT environment is actually only 30–40% technical. "The rest involves implementing processes and convincing stakeholders and manage-

ment to buy into those processes," he says. "We do a lot of people-work on the ground. When competitors treat data center virtualization merely as a technical effort, they miss that vital piece."

Looking beyond the infrastructure layer, EMC Consulting employees also have been answering customers' questions about how to virtualize applications, how to tie private clouds to third-party clouds, and how to use a virtual IT environment to drive new business models. (The organization's Infrastructure, Application, and Business Consulting capabilities help there.)

And when a client asks that EMC Consulting collaborate with other service providers, the organization's partner ecosystem provides the most comprehensive breadth of virtualization services available.

CRAFTING THE TRANSITION

After customers have a virtualization roadmap in hand, EMC's Global Services Technology Solutions

STEVE MEYERS:
"Stakeholders are letting go of a physical IT environment they'd pampered for years. A mindset change must take place."

and EMC's residents create a design, install the tools, oversee the physical-to-virtual migrations, train the customer's team to maintain the infrastructure, and if engaged to do so, they stay onsite as residents to help manage day-to-day operations.

Helping customers to feel comfortable with virtual technology's newness—such as losing the ability to "reach out and touch" a computer rack if something goes wrong—is part of the job. "We teach them to use the right tools to pinpoint where a problem is and to deploy the correct automatic recovery features," says Marisol Arroyave, TSS Offer Marketing Manager, Global Services.

EMC's security, deduplication, and disaster-recovery solutions provide an edge in building a virtual environment. Specifically, EMC offers EMC Proven Solutions for VMware, which are rigorously tested combinations of products, applications, and services to speed VMware deployments of virtualized mission-critical applications such as Microsoft Exchange, SharePoint, or SAP.

EMC Ionix (a collection of IT management products including EMC Smarts, nLayers, Voyence, Infra, EMC ControlCenter, and Configuresoft technologies) provides management across the physical and virtual data center.

And if customers want help in operating their virtual environment, including hearing about proactive recommendations and best practices, EMC Residency Services for VMware will provide formally certified experts.

EASING THE WAY INTO THE CLOUD

On August 31, EMC extended the portfolio further by launching a collection of services to accelerate a customer's journey to a private cloud.

The new offerings combine EMC's consulting, implementation, residency, and education services to address such customer challenges as virtualizing tier 1 (crucial, performance-intensive) applications; developing architectures for next-generation compute, network, and storage infrastructures; and integrating critical operations in a virtual environment, such as management, security, and data protection.

"Customers are starting to ask us, 'How do I optimize my data center for virtualization to take that big step into the private cloud?'" Dave says. "We're using our expertise to give them all the answers." ◆

➔ READ MORE On EMC.com: "Leading Global Energy Supplier Protects its Microsoft Exchange Environment with Help from EMC Consulting" http://www.emc.com/collateral/emc-perspective/h6319-global-energy-ep.pdf

Since 2007, a secure system has fulfilled a big commitment.

Locking up storage security

A few years ago, EMC created a better way for people to obtain temporary service-access to a Symmetrix system. The tool, called the Secure Service Credential (SSC), Secured by RSA, prevents someone from performing any unauthorized actions on a Symmetrix system's service processor.

By integrating RSA SecurID authentication technology with customization to control and track activity by EMC and partner technicians, SSC became another proof-point that Symmetrix is the most secure enterprise storage platform on the market.

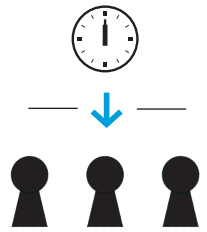
At EMC, a server receiving those access requests generates a distinct credential per user, per hour, per unit, controlling which personnel can access which Symmetrix systems, for what duration, and for what operation.

SHARPENING AN EDGE

SSC was the outcome of the first collaboration between EMC IT and RSA Security, a company acquired by EMC during SSC's development. It was an early manifestation of the desire to build product security in rather than "bolting it on."

All Symmetrix systems built since 2007 boast SSC capability, and 2–3 credentials are issued every minute of every day.

SSC addresses customers' data security concerns and helps them comply with regulatory requirements. SSC also gives EMC an edge over competitors who still rely on more rudimentary password-based access for their high-end arrays.



On average, EMC is issuing 2–3 security credentials via SSC, every minute of every day.

"SSC tells customers that we're serious about security," says Dan Reddy, Product Manager in the EMC Product Security Office. He adds that SSC has become a selling point in customers' decisions to upgrade their Symmetrix systems. The technology can be adopted by platforms across EMC so they, too, can differentiate their products in this security-sensitive market.

FAILURE NOT AN OPTION

EMC organizations including IT, Global Services, Symmetrix Engineering, Product Security, the Global Security Organization, and RSA collaborated to develop SSC.

EMC was expanding its focus on helping customers secure their data, and in fact, EMC's Product Security Office was responding to customers' urgently communicated requests that EMC improve service-personnel authentication.

Previously, service professionals had used a uniform set of static passwords for access, and their subsequent actions were not restricted or tracked.

Kathie Lyons, VP, Global Services Operations, led the 30-person team that created the secure system, as mandated by executives including Joe Tucci.

The team had eight months to create SSC "starting from something akin to a napkin sketch," recalls IT Program Manager Steve Doherty. SSC would launch with Enginuity operating system release 5772 for Symmetrix DMX-3 in Q107, so it *had* to be done on time.

"Our mantra was 'failure is not an option,'" recalls team member Steve Thompson, Program

THEY'RE USING EMC'S SECURE SERVICE CREDENTIAL, SECURED BY RSA. Via this Symmetrix V-Max system's service processor, IT Program Manager **Steve Doherty** (l.) and Project Architect **Sean Ward** test the log-in procedure that is being used thousands of times daily by service professionals worldwide.

Manager in Global Services Security. The project was even nicknamed FINAO by Brian Gallagher, SVP and GM of the Symmetrix Product Group.

Not only could SSC development problems have delayed the release of Enginuity 5772, but bugs could have meant disaster, too. "If SSC didn't work," says Steve, "our guys would be standing in front of boxes, at customer sites, unable to get in. Nor would remote access work. We'd even be halting Manufacturing, Customer Service, and some parts of Engineering and QA."

As the SSC team thought more and more about how the solution would benefit customers, Kathie says, "they really were energized." Team members extensively analyzed business processes, says Matt MacNeil, Platform Security Support Manager in Global Services, calling the result "a fantastic example of user-centered design."

ONLY EMC HAS IT

Some installed Symmetrix units are deliberately not phone-home connected and thus would never be able to access a central system to confirm authorization, notes Arnie Adelman, Security Consul-

tant for EMC's Global Security Office. Therefore, SSC would have to operate separately. RSA technology enabled the team to develop this authentication system totally independent of any network.

"No one else in the market has this capability," says Project Architect Sean Ward, an application development consultant in EMC IT. "Credentials are bound to the proper at a specific point in time, for a specific task, with a password for a specific user."

Users request a credential then use it, plus their own SSC password, to log-in for service. Sixteen levels of access conform to various job descriptions. For example, a service partner who handles routine drive replacements is allowed to perform only that function, while a diagnostic engineer has more extensive access.

More than 100 employees were beta testers. Pre-release training also was extensive.

Everyone vividly recalls the go-live. "This was a big shift," says Christopher Grondin, Global Services Sr. Manager, Security Operations. "You can't turn it off or work around it."

SSC launched on time with just a handful of hiccups, including a very brief disruption due to the shift to Daylight Saving Time.

This technology addresses an important customer need beyond service-centric security. Many customers are legally required to track who accesses their storage systems. With thousands of EMCers and partners performing onsite and remote service, Arnie says, keeping such logs "can become a horrendous burden." SSC lets customers automatically audit access. "In a way, we've offloaded a customer responsibility," he says.

EMC is now integrating SSC into other products, extending its commitment to provide information-centric, not perimeter-centric, security to customers. ◆

NEW: *SSC goes mobile*

Service technicians working on Symmetrix systems anywhere in the world now can obtain authorization codes via text message. Previously, these professionals would connect to the Web or call a live support line when they needed short-term access to a unit. Now, they receive their SSC authorizations within a minute via their pre-registered mobile phones.

Still brand new, the SMS Text Credential Request tool will likely save EMC hundreds of labor hours, resulting in significant productivity increases and major cost savings. And only EMC has it.

EMC extends its customer-service heritage with online improvements.

Global Services, IT, Marketing, all rewarded for an intense effort

PEOPLE FROM THREE EMC organizations work together to dramatically improve customer-support services delivered on the Web. Their multiyear collaboration turns into a perfect melding of ONE EMC and the Total Customer Experience. It also puts a new award into the EMC trophy case.

The Association of Support Professionals has named EMC's site as one of its "2009 Ten Best Web Support Sites," thereby giving to EMC one of the most prestigious honors attainable from the support industry.

After announcing this year's winners, the association's Executive Director Jeffrey Tarter said, "EMC has done a brilliant job of integrating support content from its acquisitions, at the same time that it undertook a large-scale upgrade of the online support tools on the Powerlink site. This was a remarkably ambitious project, but the effort produced one of the best web support sites we've ever seen."

An ambitious project produced one of the best web support sites that the Association of Support Professionals has ever seen.

Industry recognition is important, of course. But helping EMC's loyal customers is the real reward. And EMC's customers definitely are using these web-based support services.

According to Global Services Senior Vice President Tony Kolish, in the past two years, EMC has observed customer adoption rates double for Powerlink, EMC's online customer support portal. That growth is gratifying because "we've always set out to make Powerlink the preferred destination for customer service," Tony says.

What did EMC improve? In the past year, enhancements brought live chat, multiple support forums, and an ever-growing collection of support-by-product pages.

The upgrades are 100% customer driven. For example, the new support-by-product pages followed customers' requests for a more direct route

to getting help.

"Symmetrix customers should be able to go to a Symmetrix-centric page and find in one place all the support and documentation they need," says Tony. "You shouldn't have to navigate through any pages unrelated to your product or problem."

CUSTOMERS DELIGHTED

Sr. Systems Administrator Aran Hoffmann works for a major provider of U.S. workers' compensation solutions. He says, "We avoid a majority of problems in deploying apps simply by reading documentation beforehand on Powerlink.

"The fact that EMC constantly refreshes the material is a key factor; it sets this site apart. Going directly to product pages is a fantastic springboard for our problem-solving."

Aran has a warm spot in his heart for HEAT, the Host Environment Analysis Tool. Uploaded from a host to the online tool, HEAT analyzes a collection of diagnostic files, even warning of potential problems and how to fix them. "In minutes, we get the information we need. It is a huge time-saver," Aran says.

He's also a fan of the E-Lab Interoperability Navigator, which he calls "an amazing feature of Powerlink. You can drill down so specifically to learn if components in your environment are supported. I think it's unique to EMC."

And Aran regards the new support forums as "a great way to bounce ideas around with storage administrators from all over the world. Where else could I find that kind of collaboration?"

The work of Global Services, IT, and Global Marketing is far from complete, however. Through 2010, they will add more improvements, including enhanced search capabilities.

"Everyone's done a great job to ensure consistent quality," Tony says. "We all want customers to view Powerlink as being as dependable as a dial tone." ◆

EMC CUSTOMER
Aran Hoffmann says he's been avoiding problems and saving a lot of time by using the support forums.

coming up in the next issue

Accelerating a worldwide recovery: Governments are investing in creating good jobs immediately while laying the groundwork for a long-term economic revival. EMC wants to help make the planet and our global society better, standing shoulder to shoulder with the people now using stimulus funds to repair transportation infrastructures, create anti-pollution technologies, improve education, and more.

Plus, what is EMC Ionix? Managing IT for a virtualized environment is a pretty big deal: It is fundamentally different from managing a traditional physical environment. Learn how the new EMC Ionix family ushers in the next generation of IT management and how it fits into a Private Cloud strategy.

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