

PUND-IT RESEARCH

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EMC's Innovation Day 2007 – Three Perspectives

By Charles King, Pund-IT, Inc.

The word “Innovation,” so commonly used in the IT industry, borders on the cliché. Nevertheless, some companies manage to epitomize the word. For example, at the recent EMC Innovation Day 2007 event in Cambridge, Massachusetts the company claimed a stake in the word, explaining to an audience of over 100 industry analysts and journalists how the concept provided both a foundation and driver for EMC.

This article offers views on EMC's Innovation Day 2007 from three analysts who attended: David Hill of the Mesabi Group (www.mesabigroup.com), William Hurley of the Breakaway Information Group (www.big-analysis.com) and Charles King of Pund-IT, Inc. We are certainly not alone. Other analysts, including our friend Rob Enderle (www.enderlegroup.com), provided notable insights (<http://www.itbusinessedge.com/blogs/rob/?p=166>), as well. As for why we decided to join forces for this Review, we believe that EMC's story is so compelling and complex that multiple perspectives can provide a broader view that many readers will find helpful and (we hope) enjoyable.

Joe Tucci and EMC

By Charles King, Pund-IT, Inc.

Executive presentations are nothing new for industry analysts. They occur often and provide much of the fodder for considering product and company strategy. But the access to and conduct of upper-echelon executives is itself a point of interest. The presidents and CEOs of some large IT vendors are treated as if they were holiday ornaments, rolled out carefully for special occasions and placed well out of reach of analysts to avoid possible tarnishing or breakage.

Many executives are less ritualistic, but few are as informal as EMC's Joe Tucci, who regularly kicks off industry analyst events with a short presentation followed by a lengthy, unscripted question and answer session. Tucci's appearance at EMC's Innovation Day 2007 was familiar to those who have long followed the company, but also had a significantly different feel than past events. The reasons for this may have more to do with the company's current state than any change in his personal style.

To the uninitiated, Tucci appears a plainspoken guy who looks and sounds as if he would be more comfortable discussing baseball over a cold one than the sophisticated strategies of one of technology's leading lights. That assumption would be false, however, since EMC's performance under Tucci reveal a leader with an astute mind for business and IT. He joined the company as President and COO early in 2000, just in time for the final gasp of the dot.com boom and the precipitous bust that followed.

Since then, the company has served as a poster child for largely unrecognized (at least by investors) excellence. In 2002, EMC posted 5.4 billion in revenues and a \$119 million loss. Estimates of the company's 2007 performance suggest EMC will generate revenues of \$12.9 billion with a profit of \$1.44 billion. What drives this remarkable transformation? According to Tucci, two things: 1) annual R&D expenditures averaging 12% (or about \$2 billion in 2007) of total revenues focusing on the creation of leading, innovative products, and 2) some \$8 billion spent over the past four years on acquiring 30 mostly software companies..

During Tucci's reign, EMC acquired leading and emerging stars, including Documentum, VMware, SMARTS, nLayers, and RSA Security, and made a fundamental shift from an enterprise storage specialist to becoming a "Renaissance" vendor of information management solutions. Why is this important? Tucci pointed out that despite the fallout of the dot.com bust, information storage growth has enjoyed a stunning compound annual growth rate (CAGR) of some 60% during the last ten years. At that rate, according to the Expanding Digital Universe study (sponsored by EMC and conducted by IDC) the 161 billion gigabytes of information created in 2006 will expand to a stunning 988 billion gigabytes created in 2010.

The study also found that individuals, including consumers, will create 70% of this information, and that organizations will be responsible for maintaining the security, privacy, reliability, and compliance of 85% of it. To this point, Tucci expounded on the concept of information being a fundamental part of the IT infrastructure, placing it on an equal or superior footing with conventional IT hardware and software assets. Though he emphasized the continuing importance of storage products and solutions in EMC's future, Tucci also outlined a broader EMC "Information Infrastructure" strategy encompassing processes including Availability, Security, Archiving, Intelligent Information Management, Enterprise Content Management, Resource Management, and Virtualization.

Virtualization is one of particular importance to EMC given the company's ownership of VMware and its successful IPO of 10% of the company earlier this year. Tucci emphasized how VMware's "Virtual Infrastructure" offerings play in EMC's overall strategy, and clearly stated that the company has no intention of spinning off VMware completely. Instead, he carefully outlined synergies between VMware and EMC, describing them as expressing the "full power" of EMC and inferring that a closer working relationship between the pair was likely.

Overall, we believe that EMC is in an enviable position, both with existing clients in traditional markets and potential customers in emerging areas, including Web 2.0, SaaS, and SOA. While many of the company's systems vendor competitors have done an exemplary job of defining the value of server and network infrastructures in these areas they have been less successful in enumerating the roles information and storage management will play, a situation that clearly works to EMC's benefit. That does not mean that the future holds nothing but good times and clear sailing.

In many ways, helping an organization evolve is more difficult than turning a wayward company around. While Tucci's EMC strategy is eloquent and its execution has been notable, the larger market tends to define vendors by past behavior. For many, EMC remains an enterprise storage specialist (an erroneous perception encouraged by competitors), and for some, the company will always remain so. That does not detract from the fact that EMC today is a fundamentally different organization than it was five years ago. As EMC's Innovation Day 2007 demonstrated, the company's achievements under Joe Tucci suggest that if one carefully studies the market and prepares innovative solutions that anticipate customers' needs, achieving success shifts from the possible to the probable. In all likelihood, we believe that truism will continue to light the way ahead for EMC.

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About Pund-IT, Inc.

Pund-IT emphasizes understanding technology and product evolution and interpreting the effects these changes will have on business customers and the greater IT marketplace.

Innovation at EMC

By David G. Hill. Mesabi Group

When Jeffrey Nick, Chief Technology Officer and Senior Vice President, spoke on the subject of "Innovation at EMC," he described innovation as being made up of inspiration and perspiration. There are a number of forces within what Nick called the "IT vortex" that demand the change of fundamental areas: *Applications* must have integration, *Infrastructure* must deal with complexity, *Information* has to deal with its growth, and *Interaction* has to fulfill requirements for bandwidth and worldwide access. All require *Security* to function properly.

In order to move to the next paradigm, Nick proposed that the inflection points between these key areas have to be addressed. The move to *Service-Orientation* (as in SOA) addresses the inflection point between Applications and Infrastructure, and encompasses the changes that will come about through virtualization, model-based IT insight, and IT service orchestration. Between Infrastructure and Information is where *Policy* plays a key role including data classification, compliance, and ILM automation.

Between Information and Interaction is the *Semantic* inflection point. Although issues including metadata modeling, ontological (yes, ontological!) navigation, and knowledge from information may seem very exotic and ethereal to IT organizations, Nick pointed out that you need to find what you want in the context that you want it. This process is really not performed well by most companies, a situation that will need to change as information becomes ever more complex. And finally, Nick's *Edgeless* inflection point links Interaction and Applications including solutions such as Software as a Service (SaaS) and Web 2.0.

Although this all may seem complex, Nick's approach is a rich model that gives a comprehensive overview of where the transformation in IT is headed. And it also serves as a reference point upon which EMC can focus current and future innovation efforts designed to help IT make the transformation.

Nick then turned his attention to EMC's internal "Innovation Conference 2007," whose goal was to recognize the innovative brilliance of the company's people in developing new business models, processes, or products. The three day conference was held in October in Massachusetts with 400 people attending, but it was broadcast worldwide and not just for the company's technical audience.

The conference format included topical sessions, an innovation "science fair" showcase (representing 254 individuals from 25 countries), and a gala and award reception (including honoring 11 people who had five or more patents awarded in less than 12 months and recognizing Distinguished Engineers and Fellows!).

The important thing about this conference was that it reveals EMC's depth of commitment toward innovation in general, not just as a tool for product development, and that innovation can involve anyone, anywhere, a critical point for a company whose global reach is expanding dramatically. EMC's Innovation Conference 2007 demonstrated that the company understands that innovation is critical to increasing the competitive differentiation essential for continued growth in revenues and profitability.

Mr. Nick then concluded his presentation by describing some specific solutions that EMC is developing that address complex datacenters issues faced by its customers, including: getting a holistic view of a customer's environment, correlating information, understanding what is changing, and determining whether a new configuration is conformant with best practices, exploring how break-

ing out of navigating rigid structures can lead to new approaches and discoveries, and enabling contextual searches that are meaningful to individuals and organizations.

Nick's key message was that although details may change, IT organizations are going to be transformed in many ways and that EMC is aware of it and is focusing its innovation efforts to help company customers better cope with that transformation. That does not mean that EMC has all the answers, but it does suggest the company is fully aware of the problem and is working to address it.

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About the Mesabi Group

The Mesabi Group (www.mesabigroup.com) helps organizations make their complex storage, storage management, and interrelated IT infrastructure decisions easier by making the choices simpler and clearer to understand.

EMC's Lewis Pitches the Future

By William Hurley, BIG Analysis

The News

Against the background of Boston's Museum of Science, EMC executives and various product group members highlighted the company's embrace of innovation, counting both in-house development and acquisitions as innovation-driven behavior. All of the company's presenters spoke to innovation as a multi-faceted endeavor that involves more than novel technical invention but by necessity includes a distinct vision of market conditions, complementary development and business processes and a high degree of sensitivity to the real business and technology challenges faced by consumers of EMC's solutions.

Addressing the need to derive more than simple control over the overwhelming volume of data growth, Mark Lewis, President of EMC's Content Management and Archiving organization, spoke to the company's heritage as a rock-solid infrastructure provider uniquely positioned to meet the needs of information consumers across a broad spectrum of use cases and business conditions.

The Analysis

Lewis long ago assumed the role as the company's official seer, guiding executives above and developers below as to the proper direction in which the increasingly complex storage ship should sail. During the Innovation Day event, Lewis carried the standard for the business division he now oversees. More importantly, he presented a vision that wrapped together a clearly articulated view of fast-changing market dynamics and EMC's innovation-driven orientation all in light of the unstoppable wave of mounting volumes of data.

Lewis began by highlighting the fact that the internet as we now know it has liberated individuals to use and create more data going forward than even global corporations. Lewis' homage to data growth was his vehicle for describing a world where these massive volumes of data have unintentionally created both crisis and opportunity. Lewis focused on 5 problem areas:

- Infrastructure sprawl and energy consumption,
- Security,
- Regulatory and best practice compliance,
- Management complexity, and
- Process complexity.

EMC's vision, as articulated by Lewis, puts the company in a privileged position to address these problems because EMC is uniquely focused on the root of these problems - information sprawl.

Sticking closely to his role as visionary, Lewis described the ways in which these problems have evolved and have spawned innovations that, in some ways address the problems but in others leverage the condition by creating new information use scenarios. The scenarios Lewis invoked included social networking, mobility and services-orientation. Lewis also referred to wide ranging fields of innovation generally described as "Web 2.0" and Software as a Service (SaaS) as vehicles by which these problems can be addressed or overcome. In the end, Lewis was short on specifics pertaining to the ways in which EMC's legacy and innovative products will solve these problems while facilitating the new usage scenarios.

Incorporated in the vision delivered by Lewis was a refreshing embrace of the idea that knowledge is the ultimate concern of consumers, not wrestling with interfaces and data volumes. If Lewis's division in particular and EMC in general remain focused on this premise, success will result as this specific orientation is itself innovative among product-driven technology companies. Many companies pay lip service to actionable intelligence or information, but fail to understand that knowledge is ultimately in the beholder, whether that that "beholder" is an iPod-using teen or iPhone-dependent executive.

The Takeaways

- EMC sees innovation as a result achieved through in-house activity as well as acquisition.
- Knowledge is a logical outcome and key requirement of intelligent information infrastructure.
- EMC's vision is achievable, but requires a new willingness to partner and, at times, to follow these partners not lead.
- EMC needs to expand the discussion of why the problems it highlights will lead consumers to its door specifically.

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About BIG Analysis

Breakaway Information Group, Inc. (www.big-analysis.com) is an independent, technology-focused market research and advisory firm that delivers BIG insights and actionable guidance to stake-holders of all stripes active in the data storage and information infrastructure ecosystem.

EMC's Security Focus

By David G. Hill, Mesabi Group

Security is a critical concern at EMC, and the company's commitment to the issue comes straight from the top. Joe Tucci has emphasized that there is no difference between selling a reliable product and selling a secure product. EMC will not sell a product that does not have both reliability and security built-in.

With that in mind, Dennis Hoffman, the Chief Strategy Officer for EMC's RSA division, offered an overview of the company's approach to security innovation. The macro problem with security is that it needs to evolve from traditional perimeter-centric applications to more holistic information-

centric solutions. Historically, businesses have focused on building and protecting IT infrastructure perimeters with products such as the VPNs and firewalls.

The goal of information-centric security is to manage and protect information wherever it exists, via solutions including identity and access management, data encryption, rights management, and security information management. The key to EMC's approach is to consider information security first as an information management problem. The strategic objective, to secure information throughout its lifecycle, reflects the evolution of EMC's central strategic focus on "information" and its management. Yes, you still need to secure people, gear, and data. But you also need to understand business risk in order to be able to establish policies and the right priorities. At the end of the day, securing information successfully requires you to be able to understand, enforce, and audit security strategy.

Pursuing this objective has included purchasing key security technologies (and the RSA and subsequent security acquisitions are testament to that point), making both data security and infrastructure security inherent attributes of both EMC software and hardware products. EMC defines a "common security platform" as one that sets, enforces, and audits security policies across identities, data, and infrastructure.

Hoffman went into some detail on how EMC is going about delivering information-centric security, including developing strong authentication for access control and creating common core processes (data, identity, and infrastructure) for information-centric security. He also noted that the company is developing a common security platform for EMC to leverage across all its business units.

EMC's plans were questioned when it first purchased RSA, a deal that challenged many conventional views of the company. But RSA provided the foundation of a long-term EMC strategy, so the company was not as concerned about how the next quarter looked as many observers thought was wise. As a result of its foresightedness, however, EMC has become an even more strategic vendor to its customers as security discussions continue at ever higher level within enterprises. EMC's long term emphasis on security is well-founded and addresses one of the top — if not the top — concerns in IT today.

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Partnerships Key To EMC's "Innovation" Goals

By William Hurley, BIG Analysis

The News

Executive Vice President Howard Elias, who heads EMC's 11,000 strong Global Services and Resource Management Software Group, moderated a partner panel of some of high tech's biggest and most influential companies. They were:

- Jayshree Ullal; Cisco System's Senior Vice President DataCenter Switching & Security,
- Rich Halbert; Microsoft Corporation's Director of Business Development & Operations, and
- Douglas Tuttle; Deloitte's Principal and Director of Strategic Alliances.

The panel proceeded amicably, allowing each participant to highlight his or her company's capabilities and competencies in the storage and information management arena along with their strong

interest in cooperating with EMC. This disposition held true even after Elias opened the floor to questions from the gallery of assembled press and analysts.

The Analysis

The partner panel proved both interesting and revealing in several ways. First, the participants and the companies they represented telegraphed the message that even as much as things are new and/or innovative, they certainly carry a familiar air. That is that even the newest solutions, such as Web 2.0 and virtualization technologies, developed specifically to alleviate the complexities challenging effective implementation still require layers of experts and custom-tailoring to meet end-users' IT and business goals. The "upside" of this common condition is that EMC's partners recognize that today's solutions must truly address both business and IT issues and they have worked diligently to assure that individual products and combined solutions meet these requirements.

The panelists also discussed their commitment to not only co-market but to co-develop solutions for all markets, from sophisticated Enterprise environments to demanding but IT skills-challenged Small & Medium Businesses. The co-development programs discussed were largely technological in nature, but also included process and procedural innovations spear-headed by Deloitte integrators. One specific competency that drew on all four partners' products and abilities arose from the rapid implementation and customization of Microsoft Office SharePoint Server. Another is the development of EMC's Invista virtualization solution on the Cisco MDS storage fabric platform.

EMC's partnership with each of the participants is, in many ways, a peerage, with each vendor, including services specialist Deloitte, a leader in their respective markets. This web of partnerships appears strong as the panelists took time to highlight their own competitive goals along with objectives held in common with EMC or other panel participants. The partnerships discussed at Innovation Day 2007 are built on the open and undeniable fact of the companies' need to balance competitiveness with cooperation.

Still, even though partnerships such as these qualify more as a sample confederation of common interests than a formal group, exploiting the respective technologies each brings to market toward more intimate levels of sales, marketing and development cooperation may be necessary. The competitive example here is IBM's four year old OPAL program, a vehicle underwritten by IBM technology that allows IHVs, ISVs and channel partners to share leads and knowledge, access common "Best Practices" tools and participate in community-based solution development.

The Takeaways

- EMC recognizes the technological innovations are more readily adopted by cautious IT consumers when they're brought to market and supported by partners.
- The importance of systems integrators such as Deloitte can not be overlooked by technologists that seek a footprint in today's process-driven business environment.
- Cisco and Microsoft are partners who validate EMC in markets beyond the Enterprise data center.
- Partnerships buoy innovative solutions, but partnerships are not in-themselves communities.
- Partnerships equate to new routes to market, but must deliver tangible new revenues to the partner(s) if the route is to stay open.
- EMC's embrace of partners speaks to the growing maturity and complexity of the company's solution portfolio as it looks to pass \$13 billion in annual revenues.

EMC, the Mid-Market and Consumers

By Charles King. Pund-IT, Inc.

Expanding market presence nearly always presents a challenge for IT vendors, and with good reason. Vendors of every stripe tend to focus on areas that reflect their experience and expertise, a generally self-perpetuating dynamic. However, breaking that habit can yield excellent results, especially if accomplished with intelligence and foresight. At EMC's Innovation Day 2007, Rich Napolitano, Senior Vice President of Marketing for the company's Storage Division offered a presentation on the company's growing efforts among mid-market businesses.

Napolitano cited the critical role innovation plays in addressing these customers, both in delivering refined next-generation solutions and in developing entirely new capabilities. He also noted five specific drivers affecting EMC's delivery of mid-market solutions. First and foremost, many mid-tier companies are highly sophisticated IT users not driven by traditional "Mom & Pop" IT requirements. In addition, most such companies are considering IT consolidation efforts frequently driven by VMware. While the demand for IT among mid-market companies continues to grow, financial and staff resources do not – making ease and affordability critical points.

At the same time, dependable performance is a guiding point, with customers showing clear preference for tested solutions, proven best practices, and experienced service professionals. Finally, he emphasized the continuing importance of legislation and business exposure as drivers for security solutions, such as those provided by EMC's RSA division, a situation likely to expand over time.

To meet these needs, Napolitano said EMC is pursuing a number of areas in what he called "Non-Linear Innovation." First, the company continues to pursue a number of traditional top-down methods, including business strategies driven by the office of the CTO, numerous product development efforts, and the acquisition of new assets and organizations. EMC focuses on emerging business models, including storage as a service, while considering how best to leverage offerings directly among customers and via service provider partners.

EMC also supports Community Source, a program designed to equip company engineers with tools and resources they need to create innovative products. Community Source and EMC's Technology Network grant program stand as examples of EMC efforts to enable a "culture of innovation" throughout the company.

Jay Krone, a Director in EMC's Storage division, followed Napolitano with a presentation that described the development of one such innovative EMC project: code-named Lifeline. Lifeline is unique in a number of ways. First, this is EMC software that runs on other people's (in this case, Intel's) hardware. Second, the effort was a "skunk works" project driven initially by a single engineer, who believed that a huge opportunity existed for EMC in affordable commodity storage and enlisted other interested volunteers for the project.

Using inexpensive industry-standard components and leveraging a variety of collaboration tools, the Lifeline team developed a working prototype of a low-end, Intel-based NAS array featuring EMC software, including a Web-based GUI, and functions for both businesses and consumers. Lifeline is now available as the software in Intel's new Entry Storage System SS4200-E, the first-ever "Software by EMC" branded product.

Napolitano and Krone's presentations offered interesting takes on a common subject: the strategic and tactical value of innovation. Napolitano took a more strategic course, describing the larger company efforts necessary to develop and deliver innovative products for often unfamiliar or even entirely new mid-market customers. But we found Krone's Lifeline presentation particularly compelling in the way it illuminated the practical benefits of cultivating a "culture of innovation."

It is hard to say what the effects of Lifeline will be for EMC, both from a marketplace and economic perspective. But the fact that what began as a voluntary “skunk works” engineering effort is now available commercially suggests that EMC and its employees are living innovation, not just paying it lip service. With efforts such as Lifeline in its pocket, expansion of EMC’s reach into the mid-market and consumer sectors seems well within reach.

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