

Efficiency Engineers Comments on Strategic Technologies

“People are hesitant to make any changes in the current economic state. They want validation, *before* they make changes that the changes will lower costs, reduce inventory, increase throughput or velocity of their supply chain, improve patient care, or eliminate non-value-adding activities.

Simulation modeling provides an affordable, risk-free platform for making such decisions *before* any changes are made to the actual system. No wonder demand for such a tool is predicted to increase,” comments Julie Westbrooks, Business Development Director of Efficiency Engineers.

Efficiency Engineers have been building simulation models for Lehigh Valley customers for almost 10 years with a tool called Simul8. In the February Simul8 newsletter, Founder Mark Elder advised the following. He says, “It will, at last, fulfill one of my dreams – that we can point people to simulations to run, explore, change and learn from, on the web, without them having to get some software first – that means we will see mass public use of simulation to understand issues like: Why is it best in certain stages of an epidemic to close schools and yet not close schools at other times? Why is it best for a city to “share services” with another? When does one healthcare system work better than another?”

Mark continues to say, “So that will mean increased demand for simulation. Demand will also increase because of the recent Gartner announcement: In its “Top 10 technologies for 2010” Gartner, the firm of business analysts and researchers, has cited “simulation and optimization” as its number two in the list. To be fair to the analysts at Gartner they have actually been telling people in Business Process Management to use simulation for some years. But I think they have now put it in their top 10 because they are seeing such a sudden need to push cost-savings and efficiency and they know it is the only way to get that “right-first-time” – so they expect that to push demand.”

Immediately after the release of this newsletter, Efficiency Engineers’ Senior Project Engineer Alison Kulp knew this was big news!! She comments, “Simulation is often overlooked, forgotten, or just plain unknown as an optimization tool. If people knew more about simulation, I think it would be used much more frequently. It’s a powerful tool that yields powerful results. It is great that it is being promoted more heavily and gaining more recognition and acceptance.”

Please find the list of top 10 technologies on the page below.

Gartner Identifies the Top 10 Strategic Technologies for 2010

Analysts Examine Latest Industry Trends During Gartner Symposium/ITxpo, October 18-22, in Orlando

ORLANDO, Fla., October 20, 2009 —

Gartner, Inc. analysts today highlighted the top 10 technologies and trends that will be strategic for most organizations in 2010. The analysts presented their findings during Gartner Symposium/ITxpo, being held here through October 22.

Gartner defines a strategic technology as one with the potential for significant impact on the enterprise in the next three years. Factors that denote significant impact include a high potential for disruption to IT or the business, the need for a major dollar investment, or the risk of being late to adopt.

These technologies impact the organization's long-term plans, programs and initiatives. They may be strategic because they have matured to broad market use or because they enable strategic advantage from early adoption.

“Companies should factor the top 10 technologies into their strategic planning process by asking key questions and making deliberate decisions about them during the next two years,” said David Cearley, vice president and distinguished analyst at Gartner. “However, this does not necessarily mean adoption and investment in all of the technologies. They should determine which technologies will help and transform their individual business initiatives.”

The top 10 strategic technologies for 2010 include:

Cloud Computing. Cloud computing is a style of computing that characterizes a model in which providers deliver a variety of IT-enabled capabilities to consumers. Cloud-based services can be exploited in a variety of ways to develop an application or a solution. Using cloud resources does not eliminate the costs of IT solutions, but does re-arrange some and reduce others. In addition, consuming cloud services enterprises will increasingly act as cloud providers and deliver application, information or business process services to customers and business partners.

Advanced Analytics. Optimization and simulation is using analytical tools and models to maximize business process and decision effectiveness by examining alternative outcomes and scenarios, before, during and after process implementation and execution. This can be viewed as a third step in supporting operational business decisions. Fixed rules and prepared policies gave way to more informed decisions powered by the right information delivered at the right time, whether through customer relationship management (CRM) or enterprise resource planning (ERP) or other applications. The new step is to provide simulation, prediction, optimization and other analytics, not

simply information, to empower even more decision flexibility at the time and place of every business process action. The new step looks into the future, predicting what can or will happen.

Client Computing. Virtualization is bringing new ways of packaging client computing applications and capabilities. As a result, the choice of a particular PC hardware platform, and eventually the OS platform, becomes less critical. Enterprises should proactively build a five to eight year strategic client computing roadmap outlining an approach to device standards, ownership and support; operating system and application selection, deployment and update; and management and security plans to manage diversity.

IT for Green. IT can enable many green initiatives. The use of IT, particularly among the white collar staff, can greatly enhance an enterprise's green credentials. Common green initiatives include the use of e-documents, reducing travel and teleworking. IT can also provide the analytic tools that others in the enterprise may use to reduce energy consumption in the transportation of goods or other carbon management activities.

Reshaping the Data Center. In the past, design principles for data centers were simple: Figure out what you have, estimate growth for 15 to 20 years, then build to suit. Newly-built data centers often opened with huge areas of white floor space, fully powered and backed by a uninterruptible power supply (UPS), water-and air-cooled and mostly empty. However, costs are actually lower if enterprises adopt a pod-based approach to data center construction and expansion. If 9,000 square feet is expected to be needed during the life of a data center, then design the site to support it, but only build what's needed for five to seven years. Cutting operating expenses, which are a nontrivial part of the overall IT spend for most clients, frees up money to apply to other projects or investments either in IT or in the business itself.

Social Computing. Workers do not want two distinct environments to support their work – one for their own work products (whether personal or group) and another for accessing “external” information. Enterprises must focus both on use of social software and social media in the enterprise and participation and integration with externally facing enterprise-sponsored and public communities. Do not ignore the role of the social profile to bring communities together.

Security – Activity Monitoring. Traditionally, security has focused on putting up a perimeter fence to keep others out, but it has evolved to monitoring activities and identifying patterns that would have been missed before. Information security professionals face the challenge of detecting malicious activity in a constant stream of discrete events that are usually associated with an authorized user and are generated from multiple network, system and application sources. At the same time, security departments are facing increasing demands for ever-greater log analysis and reporting to support audit requirements. A variety of complimentary (and sometimes overlapping) monitoring and analysis tools help enterprises better detect and investigate suspicious activity – often with real-time alerting or transaction intervention. By understanding the strengths and weaknesses of these tools, enterprises can better understand how to use them to defend the enterprise and meet audit requirements.

Flash Memory. Flash memory is not new, but it is moving up to a new tier in the storage echelon. Flash memory is a semiconductor memory device, familiar from its use in USB memory sticks and

digital camera cards. It is much faster than rotating disk, but considerably more expensive, however this differential is shrinking. At the rate of price declines, the technology will enjoy more than a 100 percent compound annual growth rate during the new few years and become strategic in many IT areas including consumer devices, entertainment equipment and other embedded IT systems. In addition, it offers a new layer of the storage hierarchy in servers and client computers that has key advantages including space, heat, performance and ruggedness.

Virtualization for Availability. Virtualization has been on the list of top strategic technologies in previous years. It is on the list this year because Gartner emphasizes new elements such as live migration for availability that have longer term implications. Live migration is the movement of a running virtual machine (VM), while its operating system and other software continue to execute as if they remained on the original physical server. This takes place by replicating the state of physical memory between the source and destination VMs, then, at some instant in time, one instruction finishes execution on the source machine and the next instruction begins on the destination machine.

However, if replication of memory continues indefinitely, but execution of instructions remains on the source VM, and then the source VM fails the next instruction would now place on the destination machine. If the destination VM were to fail, just pick a new destination to start the indefinite migration, thus making very high availability possible.

The key value proposition is to displace a variety of separate mechanisms with a single “dial” that can be set to any level of availability from baseline to fault tolerance, all using a common mechanism and permitting the settings to be changed rapidly as needed. Expensive high-reliability hardware, with fail-over cluster software and perhaps even fault-tolerant hardware could be dispensed with, but still meet availability needs. This is key to cutting costs, lowering complexity, as well as increasing agility as needs shift.

Mobile Applications. By year-end 2010, 1.2 billion people will carry handsets capable of rich, mobile commerce providing a rich environment for the convergence of mobility and the Web. There are already many thousands of applications for platforms such as the Apple iPhone, in spite of the limited market and need for unique coding. It may take a newer version that is designed to flexibly operate on both full PC and miniature systems, but if the operating system interface and processor architecture were identical, that enabling factor would create a huge turn upwards in mobile application availability.

“This list should be used as a starting point and companies should adjust their list based on their industry, unique business needs and technology adoption mode,” said Carl Claunch, vice president and distinguished analyst at Gartner. “When determining what may be right for each company, the decision may not have anything to do with a particular technology. In other cases, it will be to continue investing in the technology at the current rate. In still other cases, the decision may be to test/pilot or more aggressively adopt/deploy the technology.”

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T: (610) 954-0733 | F: (610) 340-2513 | Info@EfficiencyEngineers.com | EfficiencyEngineers.com
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Contact:

Christy Pettey

Gartner

+1 408 468 8312

christy.pettey@gartner.com

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