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YOUR NEWS

Sun Server, Storage Growth Continues

Did you know Sun was the only top-four server vendor to achieve year-over-year server factory revenue growth, posting a 13.7% gain, according to Gartner? And Sun also continued its growth in the disk storage market, growing faster than HP, IBM, EMC and Dell (per market analyst IDC) and extended its lead in the tape storage market.

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Learn how Sun is helping our identity customers achieve cost savings and quick return on investment.

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THE CEO PERSPECTIVE

Bubbles Precede Build Outs

About 15 years ago, the mass availability of Java and a simple Web browser launched the euphoria that led to the now infamous dot-com bubble. Lately, I find myself reminding people that bubbles precede build outs. Today, interest level and market opportunity are up, especially for the innovations that fuel the Internet. The global IT market is growing, Silicon Valley is hot again, and that's great news for all of us.

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Who Cares About Bridging the Divide?



[Jonathan on Innovation Delivers Opportunity »](#)



LEADING VISION

E-C-O Stands for Economy as well as Ecology

In August, Sun and Pacific Gas and Electric (PG&E) announced an energy incentive program that signifies an expanded awareness of the how critical energy efficiency is in the data center. Sun's Dave Douglas and PG&E's Mark Bramfitt give their perspectives on what is likely to be the first of many initiatives.

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EXPERT INSIGHT

The Pursuit of Excellence

Is performance excellence a goal for your company? In celebration of National Quality Month, Executive Boardroom presents a dialogue with Sun's Kay Kendall and Junaid Mohiuddin, who serve on the Board of Examiners for the Malcolm Baldrige National Quality Award, the premier award given to U.S. companies who demonstrate performance excellence in their operations.

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INDUSTRY FOCUS

Railroad Speeds IT User Identity Processes

With a large number of contractors working in 300 remote locations throughout North America, Burlington Northern and Santa Fe Railway needed to speed its provisioning and deprovisioning process and improve the security of IT systems access. The railroad turned to Sun.

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Bubbles Precede Build Outs

By Jonathan Schwartz

Throughout history, we've seen several examples of technology literally transforming society. The railroads, telegraph, electrical grid and interstate highway system are good examples. So is the Internet.

About 15 years ago, the mass availability of Java and a simple web browser launched the euphoria that led to the now infamous dot-com bubble.

Lately, I find myself reminding people that bubbles precede build outs. It happened with each of the technologies I mentioned above, and it's happening with the Internet today.

I've been spending a lot of time with newly-funded startups and the ballooning ranks of venture and private equity investors. Interest level and market opportunity are up, especially for the innovations that fuel the Internet. The global IT market is growing, Silicon Valley is hot again, and that's great news for all of us.

Next Phase of the Internet Will Connect the Planet

By many indications, the build out is underway. Whether you call it the Participation Age, the Writeable Web or Web 2.0, we've only begun to see what the Internet is capable of delivering. The next phase of the Internet will connect the planet and bring your business closer to opportunities everywhere.

Keep in mind that the majority of the world will first experience the Internet through their mobile phones. We sometimes forget that 10 times as many people bought handsets last year as PCs. Roughly one billion mobile phones shipped compared to around 100 million PCs. With that, the odds are much higher you'll watch broadcast content on your phone than on your PC. Now that the major handset manufacturers are the world's largest camera manufacturers, the odds are far higher you'll even create broadband content on your handset. Talk about change.

Times have changed, and the Participation Age will require a new approach. This year has seen a series of headlines about high energy prices and the rising costs of real estate. Both are important global phenomena. And while most consumers are accustomed to thinking about their impact on, say the airline industry, we have only recently started to talk about our impact on the computer industry.

Green Data Centers — Good for Environment and Business

We know that some computers consume a ton of energy. A large search company told me that electricity is their single biggest operating expense. And if you talk to some Web 2.0 startups, you'll hear many say their second-biggest operating expense, after salaries, is electricity. Map that challenge to every data center on earth, and you have a global power crisis as the network is built out. Suddenly, the notion of running an efficient, green data center is not only good environmentally but it's also smart business. Power matters.

Data center rents in cities across the globe are skyrocketing, too. Most companies try to avoid building a data center in the world's most expensive cities, such as London or Tokyo. But consider the financial services institutions, located in the largest cities around the world, that get a competitive advantage by how quickly they can perform transactions. Their proximity to exchanges is critical, and they are essentially limited by the speed of light.

Financial services companies are not alone. I'm hearing, almost daily, from CIOs who say: "My biggest problem is that I'm out of space and power, and I can't exhaust the heat from my existing facilities. I'm finding myself allocating more floor space to aisles than computers!"



» Jonathan's Blog

Find out what Sun's CEO and president is thinking

The Internet is more central to business than ever before and will only become more transformational over time. At Sun, we know you are investing to drive online relationships, fuel competitive advantage, and drive efficiencies for your business. That's why we're committed to delivering you the innovation and choice to fuel your IT build out. I look forward to leading Sun, and working with all of you through the next wave of network expansion.

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E-C-O Stands for Economy as well as Ecology



In August 2006, Sun and **Pacific Gas and Electric (PG&E)** announced an **energy incentive program** whereby California customers can receive a cash savings of \$700 to \$1,000 per server when they replace existing equipment with Sun's eco-responsible servers. This agreement signifies an expanded awareness of how critical energy efficiency is in the data center and is likely to be the first of many such initiatives. Sun's Vice President of Eco-Responsibility, Dave Douglas, shares insights with Boardroom readers on the impetus behind the initiative — and its significance for customers.

Q: How do businesses benefit from the announcement between Sun and PG&E?

A: PG&E recognized Sun's leadership in the area of energy efficient servers and made the T1000 and T2000 the first server products to receive a rebate. If you are a data center manager looking to upgrade your servers, you get this rebate on top of the money that you save in energy, as well as related cooling and power distribution costs. When you add all of that up, it becomes an attractive way to ease the overall energy burden, help the environment, and save money.

Q: Why is the timing for this initiative important?

A: There is a confluence of forces driving the timing for this type of incentive program. First, energy costs are going up. Analysts are saying that energy is now 15-20% of the budget of many large data centers, meaning that this has now become economically significant for IT and finance folks.

Second, in many geographic areas energy capacity is maxed out. This was especially acute during the summer hot spells on the West and East Coasts of the U.S. where Sun participated in voluntary energy reduction measures at our major sites in California and Massachusetts.

Third, many IT managers are hitting the limits of space, cooling, and power in their data centers. Their question is how to add compute capacity without taking on the expensive and lengthy process of building new data centers.

Finally, awareness of the environmental effects of energy usage is rising. More people understand that the size of your electricity bill is related to your contribution to green house gas emissions and other environmental issues.

This same confluence of forces has caused the U.S. Federal government to take action. On July 12th, the U.S. House of Representatives passed **House Bill 5646** which directs the Environmental Protection Agency (EPA) to analyze the rapid growth and energy consumption of computer data centers by the Federal government and private enterprises. [At press time, the bill awaited approval by the Senate.]

Q: How does PG&E benefit from this deal?

A: Large data centers are a big drain on power, particularly in information-rich economies such as Silicon Valley where many large data centers are located. PG&E has a long history of incenting customers to make more energy-efficient choices in an effort to moderate the demand growth and the resulting requirements for major new power plant investments. In this sense, Sun and PG&E are very aligned in helping customers understand the energy consequences of their IT purchasing decisions.

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Q: Is this a worldwide issue?

A: The need to increase energy efficiency in the data center is worldwide. Utilities around the world are looking for ways to decrease the demand on energy consumption, and data center operators are trying to manage their energy and data center costs. We will likely see programs such as the one sponsored by PG&E elsewhere in the near future.

This problem is magnified in rapidly-growing economies such as India and China where there is already a challenge to meet rapidly-expanding power needs. In other parts of the world, the focus is more on alternative energy sources, and in those cases, the issue is to keep data centers at power levels where alternate sources can start to have a major impact.

Q: Why is this initiative important to Sun?

A: We are entering the Participation Age, with businesses and individuals increasing their network presence. Three million people join the network every two weeks, resulting in steady increases in demand for computing. In order for the power of the network to be fully realized, the technology must be more efficient in order to keep up with the increased demand.

In addition, eco-responsibility is a core value at Sun. It's important that we minimize the impact to the planet while we enable this new age to come into being. With our current product line, we are well positioned to fuel the Participation Age in a responsible way. In particular, our **SunFire T1000 and T2000 products** have proven time and again that they are the ideal energy-efficient server for wide range of network applications and services.

This PG&E initiative raises awareness of the issue of server power consumption and provides a great incentive to customers on top of the savings they will see through their decrease in energy consumption.

Q: How much savings can customers expect?

A: Customers can save up to \$1,000 per server or up to 35% when combined with the **Sun Upgrade Advantage Program** when they replace existing equipment with Sun's eco-responsible servers as part of PG&E's Non-Residential Retrofit program. Check out **PG&E's rebate site** for specifics.

Eco-responsibility is good for the environment, but it's also good for business. I often tell people that E-C-O stands for both ecology and economy. I think these two will converge more and more as we move through the 21st century.

About Dave Douglas

As Vice President of Eco-Responsibility at Sun, Douglas is responsible for the strategy and execution of environmental initiatives across the company - including enhancements to Sun's products in the areas of energy efficiency, cooling technologies, product recycling and clean manufacturing - continued improvements in Sun's day-to-day operations, and management of Sun's asset sharing through programs, donations and access to Sun Grid resources. [Learn more.](#)

PG&E on Why Rebates Benefit Everyone

In light of Sun's announcement with **Pacific Gas and Electric Company (PG&E)**, Sun asked PG&E for its perspective on customer issues in the data center and the worldwide energy crunch. Mark Bramfitt is the Targeted Market Supervisor for PG&E's high-tech, biotech, and healthcare industries. His responsibilities include developing and delivering PG&E's portfolio of energy, services and offerings to those market segments. Excerpts from the interview follow.

Q: What is PG&E's viewpoint regarding energy usage in the data center?

A: Customers are encountering many issues around managing their data centers given the critical business need to vastly increase their computing capability. Expanding those capabilities within an existing energy footprint is becoming increasingly difficult. In other words, these data centers are reaching their capacity in terms of cooling ability and the amount of power available without making huge investments. Customers are basically saying, "Help us increase our computing capability without building new data centers."

Q: Are there incentives for PG&E to reduce demand for power?

A: PG&E has a regulatory mandate to deliver a certain amount of energy efficiency. This helps improve service quality (i.e. fewer rolling blackouts). There is also an economic development benefit because if the utility can help fund energy-efficient equipment for customers and the customer's energy bill decreases, that customer is more likely to stay within PG&E's service area rather than move some place where the cost of electricity is cheaper.

The best way to manage all of this is to use cost-effective energy efficiency programs rather than develop expensive new sources of energy. If we can provide solutions to data center owners that avoid building new data centers and/or power plants, it's in everyone's best interest.

Q: How critical is the problem?

A: I would be prognosticating to some extent, but clearly we had a problem in California in 2001 with rolling blackouts. We don't want to get into that situation again, and to avoid that, we must deliver energy efficiency services at levels we've never had to do before. We are attempting to deliver three times the level of energy efficiency savings in California over the next three years than we have in previous years. I can't say that if we don't hit those goals we are going to have blackouts, but we don't want to revisit 2001, so these programs are critical.

Q: Do you have any indication as to what the rest of the world is facing? Is it the same everywhere?

A: It is crucial in many other places. We're hearing from our utility compatriots in New York City that they're having issues with data centers and energy in general. Certainly there are other places in the world where it's an issue. Basically, if you don't pay attention to your energy efficiency now, you will get to that problem later. If other areas of the world follow the leads of the utilities and states that are aggressively pursuing efficiency, they'll be better situated to avoid the inevitable.

Q: How does PG&E benefit by offering financial incentives to customers who purchase energy-efficient servers or computing equipment?

A: I know it's counter-intuitive to people who see us trying to sell less of our product. The easiest way to explain it is if I can buy a kilowatt-hour of energy efficiency (in other words, help a customer use one kilowatt-hour less than they otherwise would), that's cheaper than going out in the generation market to buy a kilowatt-hour. I'm joined at the hip with the folks at PG&E who are making long-term power purchase agreements. They're asking me if I can do it cheaper than they can. Our energy efficiency programs, including the incentive programs, do this.

Q: What are you finding from working with customers on energy efficiency?

A: Depending on the company, there are an awful lot of barriers to energy efficiency. Increasingly, we are seeing customers who aren't looking at it only from the financial perspective but who realize that energy efficiency and environmental stewardship are good things for their business.

In past years, we knocked our heads against the wall talking to customers about how to save money. Major corporations with a spare dollar have numerous choices about what to do with that dollar. They can buy another company, grow their company, buy their stock back, etc. Selling an energy efficiency project that saves them money was up against all of those things and often didn't win. Now environmental responsibility joins the picture, and different motivations are coming to play that I think are very positive.

Q: Are you optimistic?

A: I'm hugely optimistic. Our company is in the data center market because we are hoping to achieve a lot of energy savings. We're also helping customers with a problem — we want to be more than just a utility provider, we want to be a business partner.

We've been very successful in helping companies manage their data center's air-conditioning systems, but the gap in our portfolio is the equipment that's in the racks. We're very pleased to be working with the industry — the Suns and AMDs of the world — who are leading the way on equipment efficiency because we need a comprehensive portfolio. I tip my hat to AMD and Sun and some of the key players in **the Green Grid**, because it shows they are listening to the industry. We're all hearing the same story — customers need more computing power to fit in an existing footprint. If PG&E and Sun can help customers with that, we've got a winning deal on our hands.

The Art and Science of ROI

Is performance excellence a goal for your company? In celebration of **National Quality Month**, Executive Boardroom presents a dialogue with Sun's Kay Kendall and Junaid Mohiuddin, who serve on the Board of Examiners for the **Malcolm Baldrige National Quality Award**, the premier award given to U.S. companies who demonstrate performance excellence in their operations.

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Q: For readers who may not be aware, what are the Baldrige awards?

Junaid: The Malcolm Baldrige National Quality Award is an award presented by the U.S. Department of Commerce to promote and enhance best practices within organizations to help the U.S. increase its competitiveness and effectiveness. The award is one of the country's highest honors and is facilitated by the President of the United States along with the U.S. Commerce Secretary. It began in 1987 with then-Commerce Secretary Malcolm Baldrige in the Reagan administration and has been around ever since.

Q: Do other countries have similar awards?

Kay: There are at least 76 countries with award programs and three regional awards that are based on the Baldrige criteria. There are 42 states with **state-based programs**.

Junaid: One of the interesting things I observed in my new examiner orientation was that many delegates from foreign countries were there to learn how Baldrige works in the U.S. with the intent of starting awards in their own, often newly-emerging, countries.

Q: How are board members nominated and what is required of them?

Kay: Examiners apply through a rigorous self-nomination process which includes referrals and references. Most people start off as examiners, and then some become senior examiners. Examiners are assigned to independently review applications with seven to nine examiners per application.

Judges, who are appointed by the Secretary of Commerce, decide which applicants have the most promise for the award, and then about half of those applicants move on to "consensus". Here, examiners discuss the applicant, the judges meet again, and applicants are chosen for site visits where the examination team goes onsite to validate role model practices.

Junaid: Kay and I are from different parts of the board hierarchy. I'm a first year examiner and Kay has climbed through the ranks and sat as a judge for the three-year term ending in 2005. She's back again this year as an Alumni Examiner.

Kay: My experience with the Baldrige program has been very positive. It has been by far the best executive education I've ever received, and I've been through formal programs at various universities. I've never found anything close to what I've learned with Baldrige.

Q: What are the business benefits to applying for and winning a performance excellence award such as Baldrige?

Kay: Let me start with the business benefits for using the criteria to assess your organization, because there are many organizations that are not going to apply but see a benefit in implementing the criteria. The criterion, which has been in place since 1987, goes through a rigorous annual improvement cycle to evolve with validated management

practices. It incorporates lessons learned throughout its history. The assessment is one of the few techniques I'm familiar with that doesn't have a functional bias. It looks at an organization holistically and fits the size of the organization as opposed to being a one-size-fits-all.

Junaid: This year there are seven assessment criteria. These include:

- Leadership
- Strategic planning
- Customer and market focus
- Measurement analysis and knowledge management
- Resource focus
- Process management
- Business results

The holistic attitude is key because different organizations in different industries subscribe to different methodologies. At Sun we're big proponents of **Six Sigma** and, to a certain extent, "**Lean**". Baldrige is high-level in that it can be used in evaluating any industry, any organization, for-profit and non-profit.

Q: Whether you apply or just take the framework, what are some of the tangible business benefits?

Kay: The framework creates clarity among your leadership around the important things. That sounds really simple, but organizations are very dynamic. In my experience working at other companies I facilitated a lot of internal assessments, and it was very hard for the leadership teams to agree on the most important markets and core products. If these folks aren't in alignment, the organization can't be.

Because organizations are complex, the framework also looks at linkages and interrelationships. As example, rather than viewing retaining key employees as just an HR issue, you see that there are broader ramifications in leadership, strategic planning, and the way that you reward and recognize people.

Junaid: One of the key things is the business results section. It's important to ensure that organizations are achieving the results they set out to achieve. So, if a university states that a goal is to measure the effectiveness of learning amongst its existing students, and then in the business results section they discuss how they grew enrollment, a linkage is missing. The linkages are important to a successful assessment.

Kay: There has long been a misconception about Baldrige being more of a "soft award," but if you look at how the points are awarded in the application process, 450 out of 1,000 points are for results. So if anybody thinks that Baldrige is about the softer side of quality, they don't understand it. You can't win if you don't achieve.

Q: Is it costly to undertake an assessment?

Kay: It depends on the applicant's category, but the application fee is minimal. For a non-profit in education it's \$500 and goes up to \$5,000 for profit-based companies. If you garner enough points in Stage 1 (written application) to qualify for Stage 2 (site visit), the foundation offsets some of those costs, but you pay for the travel expenses of the examiners which ranges from \$10,000 to \$35,000. It has often been referred to as the lowest-priced, highest-value consulting an organization can ever have.

Junaid: The primary cost for an organization is in the time to do the application properly. \$5,000 equates to one executive business trip to Europe for a week, so it's almost negligible.

Kay: I agree, and the organizations I've worked with who perceived the process as too costly were mostly concerned about it being hard work and uncomfortable. Dr. David Strong, a retired president from two Boeing divisions who were Baldrige Award recipients under his leadership, tells executives that the process is humbling. He likens it to a healthcare checkup where you check your weight and overall fitness but have to dig deeper to find silent conditions. His point is that you can't just casually look at your organization to get a true picture of reality. He also says that the further up you are in the organization, the more difficult it is for you to get candid feedback on the health of the organization.

Junaid: Many times examiners uncover gaps or inconsistencies in organizational strategy. Having those uncovered early is far less costly than figuring it out once you have customer defections, market capitalization declines, and even brand equity problems.

Q: Are there other reasons why a healthy company would spend the time, money or effort to apply?

Junaid: I'm evaluating one organization now that's on its fifth application attempt. They describe how they've gotten better since the first attempt, and it's impressive to see the gains they've made in such a short amount of time. While I would describe them as "healthy," there is no perfect company. This is their opportunity to get a continuous review. Every year different examiners find new things.

Kay: If companies are using the Baldrige framework as a way to improve rather than just get an award, they won't see the same problems repeatedly because, as they mature, examiners will recognize what they've done and help them get to the next level. The **National Institute of Standards and Technology (NIST)** publishes **Issue Sheets** which include success examples for CEOs and Baldrige findings on **what characteristics make award recipients top achievers**.

Q: How do those companies that have done well compare to those who don't?

Kay: Successful companies are relentless about who they are and what they do, and they understand themselves extremely well. That doesn't mean they can't shift as markets shift, but if they are in the business of healthcare, they know they're all about making people healthier. Successful companies are constantly comparing themselves to others and challenging themselves to get better.

Q: What do you get if you win the award — either directly or indirectly?

Kay: You get a huge amount of attention from other people who are on the journey, because they want to see what you're doing, what you know, what your best practices are. When you apply you agree to share best practices, excluding anything proprietary.

Junaid: Winning raises the eyebrows of every customer and potential customer. You get a lot of media coverage and everyone wants to know the secret to your success. All of a sudden your products and services get exposure that they would never have had prior to winning.

Kay: There are examples where previous recipients have come back to win the award a second time. They do this because they want to continue challenging themselves and facing that scrutiny.

Winners are presented with a 24-pound Steuben crystal trophy by the President of the United States. They also get to use the Malcolm Baldrige emblem on their letterheads and business cards, which gives them a lot of credibility.

There is a yearly conference in April called the **Quest for Excellence** that showcases award recipients. I've been a few times, and recipients are very candid about what they've learned and how they've succeeded in their quality journey. So even if an organization isn't interested in applying, there is much to be learned at this conference given the caliber of people in attendance.

About Kay Kendall

Kay Kendall, a Six Sigma Master Black Belt and Director, has served six years as an examiner and three as a judge for the Baldrige National Quality Program. She currently serves as a judge for the Baldrige-based state programs in California and Massachusetts and is a National Director on the Board for the American Society for Quality. Prior to joining Sun in 2004, Kay spent 15 years in the aerospace industry and another four in the semiconductor industry. She holds a B.S. from Purdue University and an MBA from the University of Arizona.



About Junaid Mohiuddin

Junaid Mohiuddin, a Six Sigma Black Belt in Global Sales and Service, oversees Sun's operational improvement teams in the Middle East, North Africa, India, and the Commonwealth of Independent States (CIS). He is serving as a first-year examiner in 2006, having been nominated by NIST after a highly-selective process with far more candidates than can be chosen to fill the 450-member examiner board. Prior to joining Sun, he advised business and government leaders as a management consultant in a variety of engagements across the globe. Mohiuddin earned a bachelor's degree from Northwestern University and attended the Graduate School of Engineering at Stanford University.