The

HP Financial Advisor

HP innovation for the financial sector

Letter from the Editor

HP is a leading provider of infrastructure products, solutions and services for the financial services industry (FSI). We focus on three key markets—banking, capital markets and insurance—with a significant worldwide presence in all of the largest banks, brokerage firms, and insurance carriers, and every major stock and commodities exchange.

Drew Caola, VP of Sales and General Manager, Financial Services Industry Strategic Accounts, is responsible for HP's strategic accounts in financial services. Drew has been with HP since 1984, in a variety of services and sales management positions. Before joining HP, he worked for Arthur Andersen & Company.

Dear Reader,

We've certainly witnessed some interesting events recently. Congressional rescue plans and market volatality are adding to the unrest in our country.

On top of all the upheaval, chief information officers (CIOs) at financial services firms still need to focus on improving return on investment (ROI), mitigating risk, improving performance, increasing agility, and facilitating regulatory compliance—all of which will involve the effective use of information technology.

Many financial services companies are undergoing significant shifts in revenue sources, particularly in the capital markets and consumer banking areas. They need the right information to better understand the needs of customers and markets so they can cross-sell products and services. And of course everyone is trying to figure out how to drive higher quality and greater profits by more effectively automating processes.

HP is a leading provider of infrastructure products, solutions and services for the financial services industry (FSI). We focus on three key markets—banking, capital markets and insurance—with a significant worldwide presence in all of the largest banks, brokerage firms, and insurance carriers, and every major stock and commodities exchange. Our job as a technology and services provider is to help companies reduce costs, mitigate risk, increase efficiency, and deliver greater customer value.

The reason so many FSI customers rely on HP is because we're so focused on applying our technology expertise to your business problems. We're helping CIOs solve key business challenges by leveraging the wide breadth of our products and services in combination with our valued channel partners. In this premier edition of the HP Financial Advisor, we're pleased to present our efforts at helping you explore technology and services options for your company. Here's a brief sampling of what you'll find inside:

When EDS speaks...
Over the past year, HP has made a number of acquisitions, in both our business technology and business information areas, EDS being the most recent example. On page 4, you can read our interview with Mark DeBenedictus, EDS's Vice President for the financial sector. Mark has plenty to say about how EDS is helping customers address business challenges, and he also shares his thoughts on future market trends and how technology will help both address the current financial crisis and prevent its recurrence.

HP is helping companies with data center transformation and virtualization. Learn how we've joined forces with a number of ISV partners to help our customers virtualize solutions and modernize applications, to help achieve a more robust and efficient enterprise.

Greening the data center
If you've been in contact with HP recently, then you've probably heard about our own data center transformation. It was a huge undertaking, and a very successful one, I might add. We've learned a lot, and now we're using those lessons to help companies of all sizes achieve the benefits of transformation, including how to use green technologies to achieve major cooling and energy cost savings and rapid ROI. You can read about it in our Greening the Data Center section.

Transformative reading
You'll also find out how HP is helping companies with data center transformation and virtualization, in articles such as How Virtualized are You? and The Storage Virtualization Story. Learn how we've joined forces with a number of ISV partners to help our customers virtualize solutions and modernize applications, to help achieve a more robust and efficient enterprise. Of course part of transformation is making sure your data center is secure and compliant, so don't miss HP Helps Financial Institutions Defend Against Web Attacks With New Application Security Offerings, and Musings on Web App Security.

Intelligence you can use
Business intelligence (BI) is another topic of significant interest for our customers, and it's easy to see why: BI can help companies master the increasingly vast amounts of available information and grow their businesses by mining the information for useful intelligence. That's what business intelligence is all about—turning raw data into useful information. Companies that succeed in the BI arena become more competitive, increase revenues, and understand customers better. Read about it here, in articles such as Data, Data Everywhere and The Future of EDW.

You'll also find plenty of interesting reading for individuals in banking, capitol markets or insurance, along with specialty topics like radio frequency identification (RFID) and how it will impact the financial services sector. There's something for everyone, and if your company relies on information technology, you're sure to discover some interesting nuggets.

I'd like to thank you for your interest in The Financial Advisor. I hope you find it interesting and relevant, and I invite you to contact me or your HP sales representative with any questions or comments you might have.

Best regards,

Drew

EDS supports 200-plus financial services clients, including nine of the top-ten global financial services firms.

A conversation with Mark DeBenedictus from EDS an HP company

Mark DeBenedictus knows his way around information technology for the financial services industry. In his current role as Vice President of U.S. Financial Services for EDS, he's responsible for driving growth across banking, insurance, and capital markets, overseeing strategy and go-to-market plans in Canada, Mexico, and the U.S.

In his 25 years with EDS, Mark has spent 17 years working in the financial and insurance services industries. He has led all lines of business and delivery components: credit processing BPOs, large transformation and application projects, account management and new business development, and, most recently, delivery of all existing accounts in Australia and New Zealand focused on financial services, across all lines of business and industries.

The HP Financial Advisor (HPFA) caught up with Mark recently to find out how EDS is helping the financial services industry face current and future challenges, how the company is using SOA to enable powerful new capabilities, and to learn about the role of technology in preventing future subprime mortgage crises.

HPFA: Why don't we start out with a high-level overview of EDS's business?

MD: Sure, let me just throw out a few numbers to give you an idea of the scale of what we're doing. EDS supports 200-plus financial services clients, including nine of the top-ten global financial services firms. We originate more than one million loans for more than 20 financial services companies. We handle 45 million credit card accounts and 1.3 billion credit card transactions in 18 countries, and we service more than 2 million consumer loans. We're one of the top three processors of outsourced mortgage loans, servicing more than 2 million existing loans and originating more than 500,000 new loans. We provide services and systems for more than 10 million insurance policies. Every year, EDS processes 1.5 billion checks and 100 million remittance transactions and 83 million ACH transactions. To put all this in perspective, EDS touches one-in-five households in the U.S. through our network of services.

HPFA: How is EDS helping its customers in the U.S. address their business challenges?

MD: There are three key ways that we're helping our clients succeed in today's market. One: by reducing cost, which we do by bringing to bear best-in-class services and leveraging our investments. We can usually find a 20 percent cost efficiency in key offerings. Two: by increasing quality; our capabilities can drive outage reductions and provide end-to-end stability. This allows our clients to eliminate idle time and service their customers in this "always on" environment. And three: by simplifying their environments. We have capabilities that enable companies to unlock their legacy environments, creating "speed-to-market." We've seen where we can reduce test and development time in half by introducing major changes in these environments.

HPFA: What types of solutions is EDS offering within your primary segments—banking, capital markets, insurance, and professional services?

MD: There are three areas of focus that we provide in these segments. We deliver network services solutions that help clients transition and consolidate dispute networks, and move to a digital backbone. We provide a host of specific application development and testing services that require domain expertise; for example, we're currently developing a state-of-the-art portal for a client that we believe is game-changing in the insurance industry. And, finally, we're focusing on bringing our Financial Services Industry Service Oriented Architecture to lethargic environments that exist in this market.

HPFA: Does EDS offer any line-of-business applications for things like credit fraud detection?

MD: Good question. We actually do—in two different dimensions—through our alliance embedded in our services, and

in specific market niches where we believe we have a competitive advantage. For example, in commercial and life insurance with our EDS SOLCORP entity.

HPFA: What are some of the major trends impacting financial services in the near-to-medium term?

MD: This year, 2008, the first of 78 million baby boomers are turning 62, and the number of people age-60 and over will increase by 55 percent over the next 20 years. The major issue our clients will face is that this population will want open access to security and planning tools. Reliable networks that can deliver data and capabilities on demand will be key. All of this plays well to EDS's strengths given that innovation in these types of products and processes mean more multi-sourcing and integration, and that's where we come in.

HPFA: There's been some very grim economic news these past few weeks—how is EDS addressing some of the trends around that?

MD: Well, the credit crisis will certainly create significant market dynamics through 2008 and 2009, and there will also be significant opportunities for firms like ours. Our deep process and technical knowledge of securitization, trust reporting, and regulatory requirements puts us in a unique position. Guarding against fraud will take more data storage, more real-time analysis, and new checks and balances. We can do all of these things and thus add a lot of value to this market for investors and financial institutions.

HPFA: Looking at last year's sub-prime mortgage meltdown, do you see technology playing a role in preventing that from happening again?

MD: Yes, I do. One way technology can help is by providing the capacity to access data that wasn't there before. The thoroughness and the robustness of the data you're going to have to capture will require more storage and more infrastructure to cool that storage. Another way has to do with parsing the data in totally different ways. That's the only way investors can get the information they need to make appropriate decisions based on an accurate view of the overall risk involved. So technology firms will need to bring faster storage capabilities into play, along with better applications to process the data and provide reliable information to investors.

HPFA: So you think one of the problems was that some of the information just simply wasn't there?

MD: Yes, absolutely. If you think about what caused the problem, it's similar to the reinsurance loop: the process got so complicated that people were offering risk and no data to support it. It became a blind acquisition of risk. Because that information wasn't there, they took tranches—parts of the interest rate—and sold them, and it became so far removed from the actual asset, there was no way to see what kind of risk was involved. Eventually, after about twenty different companies portioned that out and the financial instrument got back to the pension funds, there was a lot more risk in them than was being communicated. So let's say, if there were data available that said that property A, which is part of security B, is located in Michigan, and the auto industry is having problems, then there's an additional level of risk that's going to come into play. Then you would know that real risk you held and possibly all others who share that risk with you in some way. If investors would have had access to that level of information, they probably would have had a different point of view for that investment.

HPFA: Do you anticipate that if the capability you described is perfected, it'll successfully evaluate risk by taking those outside-the-industry factors into play?

MD: Yes, when investors want to buy a CDO—collateralized debt obligation—they'll know in great detail what they're buying. So what will happen when someone tries to sell a CDO that's based on extremely risky sub-prime mortgages is that no one will buy them. Because right now, what's happened is that nobody can buy anything, so you see Fannie and Freddie as 70 to 80 percent of the mortgage business out there today, where they were only purchasing 40 to 50 percent prior to this meltdown. No one will buy even the good stuff because no one knows how to decipher it anymore. If you want to start charging higher interest rates, people are going to want to get back in the market, but only if they can get visibility. And that's where technology providers and enablers like us will play a big role.

Reduce Costs

Greening the Data Center

Environmental focus is good for business

HP adding business value by helping to preserve the environment

By Patsy Koetting

Whether you call it environmental responsibility, corporate citizenship or "going green"—as much of the media have coined it—one thing is clear: More and more IT companies are joining the movement. In today's highly competitive marketplace, more and more enterprises are realizing the financial benefits of reducing energy use, a large and growing expense. Companies are looking at energy efficient IT products and solutions as a way to reduce costs and their environmental impact. In fact, CEO Mark Hurd recently declared, "Environmental responsibility is good business. We've reached the tipping point where the price and performance of IT are no longer compromised by being green, but are now enhanced by it."

Indeed, HP's achievement in the environmental space is not going unnoticed.

In a recent Manufacturing Business Technology article titled, "HP proves being green makes good business sense," Contributing Editor Cole Ollinger summarizes HP's leading environmental positions, noting the company's desire to not only gain stature among the world's greenest companies, but also to cut energy consumption by 20 percent while expanding its industry-leading product reuse and recycling programs.

"HP sees its green efforts not just as fodder for the annual report, but as critical to various parts of its diverse business, including hardware and IT services," Ollinger writes. "From product and packaging design, to manufacturing and the supply chain, to reuse and recycling programs and marketing, HP uses green initiatives to cut costs and gain market share."

Data center electricity usage in the U.S. has more than doubled since 2000—now accounting for more electricity per year than all the television sets in the country combined. What's frightening for many companies is that in the near future it will cost more to power and cool a server over its lifetime than it will cost to buy the server itself.

One result of these ultra-intensive power consumption levels will be lower profits for the companies and further depletion of natural resources. In fact, HP scientists estimate business technology consumes more than 400 million tons of coal and produces 864 million tons of CO2 greenhouse emissions each year. To counter this, HP has developed ways to use less power to both preserve resources and save money—for
itself and its customers. As a result, HP has introduced a suite of products and services to reduce energy use from the desktop to the data center.

One example is HP Dynamic Smart Cooling (DSC) technology, which enables customers to change their data center energy costs from a fixed to a variable cost. This results in significant increases in IT scaling headroom and more efficient data centers. DSC allows companies to:

- Reduce cooling costs by 24-40 percent;
- Ensure automatic re-tuning if changes or disturbances threaten air-conditioning reliability;
- Support higher rack operating temperatures due to quick response times; and
- Operate fewer computer room air conditioners.

On the individual consumer product level, HP has introduced products such as the dc5700, dc5750 and dc7700 desktop PCs, which offer configuration options to use as little as half the energy of standard computers.

Through energy-efficient projects, including data center consolidation and using our own energy-efficient products and solutions, HP reduced our energy use by 27 million kWh/year ($1.9 million) in 2006. The company's overall goal is to reduce its global energy use by 20 percent below 2005 levels by 2010.

Remarkable reuse and recycling

HP's product reuse and recycling program has long been renowned among the industry's best. HP offers customers several choices to manage aging or unwanted computers while also minimizing the impact on the environment.

"We feel it's our duty as a business that's both environmentally conscious and bottom-line conscious to provide services for product reuse and recycling," Tiernan says. "The bottom line is that if there is value to the product, we will buy it back. If not, we will recycle it."

HP reuse and recycling services are available in more than 50 countries, regions and territories. In fact, last year, the program became the industry's first to reach the milestone of 1 billion pounds of recycled electronics, and HP expects to recover (reuse and recycle) another billion pounds of materials by 2010.

Various plastics and metals recovered from HP's recycled products have been used to make a range of new products, from auto body parts to plastic toys to fence posts to roof tiles. What's more, last year, HP released the rp5700 Long Lifecycle Business Desktop PC, made with as much as 95 percent of recycled components.

The business case

While there are a number of reasons why conserving energy and reusing products makes good business sense, the most straightforward example is that more and more customers are requiring it. Translation: If you don't play by our rules, you're not invited to our game. For example, governments as well as enterprise customers increasingly depend on eco-labels, such as ENERGY STAR, as standards for purchasing environmentally responsible products.

"If we didn't have products that meet the criteria, we would be excluded from these markets," said Tiernan. "That would not make good business sense."

In 2006 alone, HP recycled the equivalent weight of more than 600 jumbo airliners globally—a 16 percent increase over 2005.

HP Labs advances sustainable IT with new research projects

HP has new research initiatives from HP Labs, the company's central research arm, aimed at developing new technologies and business models that leave a lighter carbon footprint.

Initially, HP Labs will focus its research in sustainability on three major projects, including: an industry-first initiative to reduce the carbon footprint of data centers by 75 percent; groundbreaking research to replace copper wiring in servers with laser light beams; and tools for measuring and managing the amount of energy used to develop products.

"HP Labs will lead the industry in developing the technology that could dramatically reduce energy consumption and the carbon footprint of entire industries."

Sustainability is one of five major research themes of the newly redesigned HP Labs, which recently refocused its efforts to address the most complex challenges facing technology customers in the next decade.

"HP's long-standing commitment to the environment is second to none in the technology industry. Today, HP Labs extends our dedication with these important research initiatives that will advance the state of the art in sustainable IT," said Prith Banerjee, senior vice president, research, and director, HP Labs. "HP Labs will lead the industry in developing the technology that could dramatically reduce energy consumption and the carbon footprint of entire industries."

The ultimate sustainable data center
HP Labs unveiled its Sustainable Data Center project, which is focused on reducing the carbon footprint of data centers by 75 percent while simultaneously reducing the total cost of ownership. For example, an average data center that consumes five megawatts of electricity annually could power more than 4,300 homes in the United States for a year. This research project will enable companies to drastically reduce the amount of electricity consumed in the data center.

Under the leadership of Chandrakant Patel, HP Fellow and Director of the Sustainable IT Ecosystem Lab, researchers will study how energy is used and managed for the entire lifetime of a data center, from its design, synthesis, operation and end-of-life for its components. The research team, which includes computer scientists, materials scientists, physicists, and mechanical and electrical engineers, will use this information to develop data center technologies that achieve a massive reduction in resource consumption while maintaining performance, reliability and uptime requirements.

HP expects this research to open up new markets for its business by extending the technology to other areas such as smart buildings, grids and print factories.

Replacing copper with light to improve energy efficiency
A second sustainability research initiative is focused on replacing the copper-based electrical connections used in today's IT systems with optical laser communication links.

The Photonic Interconnect project, led by HP Senior Fellow and Director of Information and Quantum Systems Lab, R. Stanley Williams, builds on years of research dedicated to building photonic optical connections and components.

Photonic interconnections make it possible to fit dozens, and eventually hundreds, of processors on server system chips. In addition, the optical connections are 20 times more efficient than what is on the market today and will save companies multiple gigawatts of power annually, thus driving down IT costs. The photonic interconnects, which range in distance from 100 meters to 100 nanometers, also enable more flexible system configurations that can be quickly redeployed based on business needs.

New approach for modeling and measuring energy and material use
HP Labs also introduced a new project, to be led by Patel, focused on developing a set of tools that can model, predict, measure and manage the environmental impact of product manufacturing, supply chains and business processes.

HP will develop software and services tools to measure and manage key environmental impact metrics, such as carbon emissions, total energy usage and non-recoverable energy consumption. HP will use the tools to help customers re-engineer their businesses to be more sustainable and cost-effective through the innovative use of IT. This project will initially focus on three primary areas:

- HP Labs researchers are developing analyses of commercial printing and publishing industries that compare the sustainability impact of their current business models against a reduced impact that would result from the deployment of new research technologies. The aim is to identify and quantify how such research technologies can be best deployed to increase efficiency and reduce resource and energy use as well as carbon emissions. HP plans to extend this research to its customers in other vertical industries.

Continue on page 9

HP Labs advances sustainable IT with new research projects (continued)

- HP Labs researchers have developed a unique approach to quantify the costs and environmental impact of a product by looking at the amount of available energy, known as exergy, that was used in that product's lifecycle from extraction, manufacturing, shipping, usage and recycling. HP Labs and the University of California at Berkeley have jointly developed the Lifetime Exergy Advisor, a software tool designed to assess a product's total environmental impact through joules, units of available energy. The Lifetime Exergy Advisor can help organizations determine the environmental benefits gained from using alternative materials and processes across every phase of the product lifecycle. HP believes that as the world's energy resources are increasingly tapped, companies will measure the amount of joules associated with the creation of a product much they way they measure dollars, so joules will be valued as much as currency.
- To harness the knowledge of the world's leading experts in sustainability, HP Labs researchers plan to create an open online resource, called a "sustainability hub," to gather and share data and information about the sustainable design of products. Sustainability experts, researchers, scientists, engineers and academia from around the world are invited to contribute to the hub, which will have a repository of research information dedicated to the development of tools and methodologies for sustainability. The sustainability hub is expected to be available to the public in 2009. HP Labs intends to apply the data in future research to quantify the amount of available energy used when new products and supply chains are created across the entire global ecosystem.

HP reduces environmental impacts

By James Cook, VP Data Center Transformation

HP is a leader in designing green technologies into our enterprise products, and we've applied these same technologies to our own IT resources. For example, we've consolidated our eighty-five worldwide data centers into six environmentally friendly data centers in three locations.

This consolidation has generated significant energy savings through:

- Energy-efficient power and cooling
- Improved temperature management using "thermal zone mapping"
- Technology that optimizes DC power use and provides cooling as-needed
- A 200,000 square foot reduction in "white space"

As a result of these steps, HP expects a nearly 60 percent reduction in electricity use—enough to power every home in Palo Alto, California for a year.

Even print cartridges go green

By Terry Larsen

Consistent with HP's approach to provide products and services with the environment in mind—from product design through manufacturing, use and recycling, HP print cartridges are designed to help reduce energy consumption and waste. For example HP's recent packaging innovations for HP LaserJet and inkjet products alone will reduce greenhouse gas emissions by over 37 million pounds of CO2 in 2007. That's the equivalent to growing 325,000 tree seedlings for 10 years.

Over 15 years ago, HP's industry-leading Planet Partners recycling program was created to make it easy to recycle HP print cartridges, printers and other technology products responsibly. With operations in over 50 countries, HP has to date recycled 1 billion cumulative pounds of electronics and HP print cartridges with a goal of doubling our annual recovery rate to reach 2 billion pounds by 2010.

From the design perspective, HP reduces waste during use by engineering printers, cartridges and media to work together. Original HP print cartridges have fewer waste-creating problems—such as jamming, poor print quality, and inconsistent toner and ink yields. The design efforts also insure HP can effectively "demanufacture" and/or recycle printers and cartridges.

HP Data Center Consolidation Results:

- **Decreased number of data centers from 85 to six**
- **Decreased number of data marts from over 762 to one enterprise data warehouse**
- **Decreased number of applications used by 58%**