



Executive Primer

Cisco CIO Summit 2007

An Executive Primer for session topics discussed
at Cisco CIO Summit 2007



Cisco Internet Business Solutions Group (IBSG)

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About the Primer

To help facilitate lively discussions during the Cisco CIO Summit, we created a Primer that summarizes key trends, research, insights, and IBSG’s thought leadership* on selected session topics. This Primer addresses the following aspects of each topic:

- **Landscape:** How are business needs currently being addressed?
- **Drivers:** Which trends and inflections will compel changes?
- **Challenges:** What are the obstacles to meeting the needs?
- **Opportunities and Benefits:** Where are the opportunities for driving change, and how can CIOs benefit?

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* Thought leadership on “Takeaways: The New Business Intelligence” provided by Cisco IT Marketing



THOUGHT LEADERSHIP SHOP TALK

Takeaways: The New Business Intelligence

The Landscape

- **Data assets:** Today's businesses have data—too much data. But business intelligence (BI) surrounding that data is restricted to basic reporting of transactions, sharing data only within closed, limited communities that speak the same data language (finance, marketing, manufacturing, and so on). Most companies are underutilizing their biggest asset: customer data.
- **Data usage:** Next-generation BI (data analysis and modeling techniques) is proven and mature; data-mining applications are in use by forward-thinking companies in a broad range of industries. Limited numbers/kinds of businesses are employing next-generation BI.
- **Data challenge:** Businesses want to increase growth, but don't know how to extract insights from data to enable broad-reaching change.

Drivers

- Success of data-mining pioneers (Procter & Gamble, Harrah's).
- Pervasive use in some industries (e.g., banking) where products and services alone do not sell themselves. Targeted marketing campaigns based on in-depth customer and regional analysis are required for success. Huge profits in industries that effectively employ next-generation BI are garnering attention.
- Global markets require more aggressive marketing to stand out from the competition and to gain insights for optimizing operations and controlling costs. Global operations also tend to encourage the need for collaboration, a requirement for BI.
- Consumers are demanding that retailers/service providers understand their needs better and provide more tailored solutions and buying experiences.
- Enabling technologies:
 - Affordable, network-based storage (fast access; large-scale capacity).
 - Global networks, which can efficiently link previously disparate groups and their islands of information that are not being shared.
 - Broad range of available data analysis; modeling and mining tools.

Challenges

- Data is never perfect.
- Businesses often try to start too big, attempting to consolidate all corporate data at once. Aggregation and analysis must start with the most vital information.
- Most companies do not have the marketing discipline required to let data analysis lead programs. New skill sets are required to aggregate and analyze data, and to mine the data to encourage marketing efforts.

- Companies need a clear BI vision to effect change in the use of data assets. While technology is more intuitive and affordable for data management, and more BI tools are available today, the strategic level is harder with globally distributed teams.

Opportunities

- Businesses can establish the collaborative, open environments needed to take advantage of the insights gained with next-generation BI solutions.
- IT can fill the role of leadership by sharing best practices and in-house examples of how to define and carry out next-generation BI initiatives:
 - **Gaining a 360-degree view of customers:** Cisco created this strategy 18 months ago. By aggregating customer data from all functional areas, new patterns and insights will be available to global marketing and sales teams (e.g., any customer purchasing wireless solutions will trigger an alert for the account team to have discussions on security, thereby generating new leads).
 - **Sharing data with other businesses:** Take advantage of BI in the business-to-business space by sharing customer data with partners.
 - **Applying BI for internal cost controls:** By analyzing trends and patterns better, insights can be gained for controlling spending effectively.
 - **Using data to increase network intelligence:** BI can deliver insights that enable improved tailoring of the network to the business.

THOUGHT LEADERSHIP SHOP TALK

Growth: The Next Billion Customers

Landscape

The next billion customers reside in the emerging markets of the world. Enabling technologies such as cell phones and satellite receivers are booming in developing nations. For example, today in Africa, there are 140 million cell phone subscribers; this is projected to grow 100 percent by 2010. The falling cost of connectivity is enabling creative solutions for providing goods and services to populations previously underserved, or not served at all.

The economies and business clout of Brazil, Russia, India, and China (BRIC) are growing rapidly, and several other economies are close behind. In the retail sector, for instance, Vietnam, with its 84 million people, is close to the top 25 percent of the most promising countries for retail expansion (source: A.T. Kearney).

Drivers

- Falling cost of connectivity (cell phones, satellite receivers, Internet-connected community centers in rural and urban areas, and Internet cafés).
- In some cases, government-sponsored initiatives to drive connectivity into remote areas (as in Pakistan, where the government has made investments in building a core fiber network).
- The growing realization that underserved populations can save time, money, and effort if they have access to information, goods, and services via the Internet.
- The collective buying power of rural areas, because even the poor are willing to spend modest amounts to access needed services that were previously unattainable.

Challenges

- Lack of infrastructure throughout much of the developing world, especially in rural areas.
- Lack of education and understanding of how connectivity can benefit society.
- In some cases, outdated regulatory environments, or political environments that impede market penetration.
- In some parts of the world, economic growth will be slower due to poverty, war, disease, and multiple other factors. For example, Africa is not expected to reach India's current economic position for another 20 years.



- Penetration of emerging markets will not take place in the same mode as developed economies. New business models with features and services specially designed for the needs of these underserved populations must be developed to penetrate these new growth economies profitably.
 - For example, Brazil provided banking services to half of the adult population in less than five years. Four banks partnered with mom-and-pop retail stores in rural areas to provide services through mobile technologies, bringing access to financial services to the previously unbanked rural population.

Opportunities

- Worldwide, revenues from IP-enabled services are on a steep growth curve:
 - By 2010, India's and China's combined PC purchases will reach 120 million units—about 100 percent of the units purchased in 2007 (source: Forrester Research).
 - In FY07, the emerging markets account for 40.7 percent of the growth in orders of goods and services worldwide, with the United States and Canada combined accounting for only 43.5 percent (source: Lehman Brothers Equity Research, August 8, 2007).
 - It is estimated that by 2050, the buying power of the emerging economies will surpass that of the developed nations by 25 percent (source: Pricewaterhouse Coopers, March 2006).
- Organizations seen as being instrumental in country transformation and growth will be well positioned as these emerging economies become increasingly powerful players on the global stage.

GENERAL SESSION

Collaboration: Finding the Wisdom in Your Crowd

Landscape

Why is collaboration such a hot subject of discussion and a significant part of future IT strategy? Is it just a clever repackaging of what we already do, or is there a fundamental difference in what this activity now brings to the enterprise, governments, and consumers? The goal has always been to extract and take advantage of the vast informational and intellectual capital that already exists, but this capital has been a challenge to harness.

New technologies—from unified communications (e-mail, instant messaging, videoconferencing) to Web 2.0 tools (blogs, wikis, podcasts, newsgroups, virtual workplaces)—promise to improve collaboration and deliver significant increases in productivity and innovation.

Unified communications and Web 2.0 tools make a difference in the way companies and people collaborate because they foster better decision making and greater innovation by reducing barriers and enhancing collaboration—resulting in increased productivity, greater knowledge transfer, faster and simpler communications, streamlined business processes, and improved customer service.

According to the Corporate Executive Board, 70 percent of businesses use Web 2.0 technologies to interact with customers, and 51 percent use them to communicate with suppliers and business partners.

Forrester Research recently stated that “organizations are now looking ahead to a digital workplace, which will be seamless, guided, visual, role-based, multimodal, and aware of the physical world.”

Drivers

The need for collaboration is being driven by a number of factors, including:

- A globally distributed, mobile, and virtual workforce that needs to collaborate, be trained, and deliver productivity and innovation.
- A new generation of workers and consumers who are at ease with new modes of communications and demand a 24-hours-a-day, seven-days-a-week environment using real-time technologies.
- Social networking, a means by which customers and companies use multiple channels to collaborate, accounting for 6.5 percent of all Website visits.



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- Peer-to-peer (P2P) networks—network file distribution methods that allow users to share and download large files easily.
- IP, which is becoming a standard way to transmit voice and video across networks.
- Mandates to reduce IT costs, which are encouraging investments in self-service and collaborative technologies such as voice over IP (VoIP) .

Challenges

Creating a culture of collaboration is not as simple as it sounds. Here are some of the factors that work against collaboration in today's enterprise:

- **Misalignment:** Team missions are not aligned by senior management. Teams have different priorities and metrics, which can prevent effective collaboration.
- **Competition for relevance and resources:** Desire to show that the team is relevant means undermining others who could supply the same value. Teams “pile on” popular projects (even when not assigned) because they want to demonstrate relevance.
- **Fear of dependence:** Teams do not trust other teams to supply promised services, so they build interdependent capabilities (this is a particularly serious issue in military organizations). They fear de-prioritization in the event of a crisis.
- **Resource abundance:** When teams have their own internal resources, they can operate without collaborating. Shared resources reduce this tendency.
- **Ignorance:** When people don't know who has the information, resources, or experience required to help them in their mission, they will act in parallel or at cross-purposes to others.

Opportunities

- Companies that want to benefit from virtualization and SOA approaches need to break down the information silos within the enterprise as a step toward creating a collaborative culture.
- Implementing Web 2.0 capabilities gives people tools for collaboration (but doesn't change the culture; culture and technology must be addressed in tandem to create a collaborative environment). Here are some examples:
 - Using virtual reps/avatars, metaverses (3-D virtual spaces), click-to-chat, videoconferencing, blogs, and wikis to (1) collaborate, attract, educate, and service customers; (2) reduce customer service and travel costs; and (3) reach partners and employees.
 - Entering new markets or starting new businesses using P2P—for example, using a P2P facilitator to host a P2P exchange rather than participating directly in each transaction.
 - Taking advantage of VoIP—industry reports estimate that by 2010, there will be 25.5 million U.S. residential landline subscribers and 53 million IPTV subscribers worldwide.
- A seamless, collaborative environment increases employee productivity, knowledge, and revenue.
 - For example, IBM has begun to implement an “On Demand Workplace” using customized portals for its employees, based on their functional roles. These portals provide targeted information using contextual content delivery, facilitate collaboration with individuals and teams, take advantage of shared services to deliver consistent experiences, and integrate with back-end systems to simplify users' worlds, all on one interface (e.g., finance teams can access Siebel data without going to the Siebel interface).

- Organizations need to involve consumers to create or improve products and services.
 - For example, Dell's IdeaStorm community has contributed almost 6,000 new ideas and 25,000 comments to make environmentally friendly PCs.

Benefits

The top four perceived benefits for implementing collaboration tools, according to a Cisco survey of 2,100 corporate communicators, are:

- Improved employee engagement (71 percent).
- Improved internal collaboration (59 percent).
- Improved internal community development (51 percent).
- Improved two-way dialogue with senior executives (42 percent).

GENERAL SESSION

China and India: What's New, What's Next, What's Different?

Landscape

The world is experiencing the greatest economic shift in more than a century, according to the Economist Intelligence Unit. Countries designated as emerging markets account for more than 50 percent of the world's GDP (at purchasing-power parity). India and China are chief among these growing economic powerhouses:

- Among the top 100 global companies based in emerging countries, 44 are Chinese and 21 are Indian.
- By 2050, McKinsey predicts that China will surpass the economy of the United States by US\$9.3 trillion, at \$44.5 trillion.
 - India, at \$27.8 trillion, will lag the United States (at \$35.2 trillion) by only \$7.4 trillion.
 - The combined economies of India and China will be greater than the economies of the United States, Japan, Brazil, Russia, the United Kingdom, Germany, France, and Italy combined.
- Every eight seconds, 34 babies are born: five are Indian, four are Chinese, and one is American.
- In 10 years, the No. 1 English-speaking country will be China.
- In 2006, 1.3 million students graduated from colleges in the United States, compared to 3.1 million in India and 3.3 million in China.

Chinese and Indian companies know that to be a significant presence on the global stage, they need a comprehensive information and communications technology (ICT) infrastructure. In both countries, government is playing a major role in developing the ICT foundation that enterprises are using to deliver value-added services and products. With growing populations of educated people who have disposable income, India and China represent attractive markets for businesses around the world.

Drivers

- Demand by developed nations for lower-cost goods and services.
- Introduction of mobile technologies, especially mobile phones, that overcome the lack of a wired infrastructure.
- Web 2.0 technologies (video, blogging, telepresence, file sharing, and so forth), which overcome barriers imposed by globally distributed company venues, suppliers, and customers.
- Significant growth of the middle class in both countries, which is creating strong domestic demand.



Challenges

- China is lax in enforcing intellectual property rights, making it riskier for foreign companies to do business in that country.
- India's physical infrastructure is in poor condition, and the IT infrastructure is unreliable.
- Regulatory environments relating to labor and corporate governance are challenging in both countries.
- India and China both discourage university-industry collaboration and restrict start-up access to venture capital.
- Civil unrest and political unpredictability are ongoing threats to business.
- The long-term advantage of lower-cost labor will eventually disappear as these countries become wealthier.
- Rapid industrialization is accelerating use of fossil fuels, which are increasing in cost. This may eventually offset the advantage of low-cost labor.
- China and India both contain a diversity of cultures within their borders. Doing business in either country requires careful attention to these cultural differences.

Opportunities

- Companies that establish firm partnerships within India and China, and are perceived as contributors to the growth of prosperity and stability, will have an advantage over late-arriving competitors.
- Though not without risk, the size of the future markets in India and China hold the promise of great rewards to firms that approach these markets judiciously and with sensitivity to their political and cultural differences.

Benefits

- China and India will be eager markets for advanced technology (especially in the areas of mobile communications and IP-enabled technology) for a long time to come.
- The potential size of these economies will continue to open many new business opportunities.

GENERAL SESSION

Customers: The New Voice of Business

Landscape

The advent of pervasive, high-speed connectivity and enabling technologies such as mobile devices has resulted in a reversal of the relationship between customer and enterprise (whether retail or other); the consumer now has the upper hand in the relationship.

Empowered consumers are demanding a voice and role in the goods and services they purchase. Using blogs, wikis, and social networking sites like YouTube, consumers are sharing information, product reviews, and their personal experiences about companies, products, and services.

Drivers

- Pervasive broadband connectivity.
- Mobility.
- Enabling technologies:
 - IP for media and communications.
 - Blogs and wikis.
 - Social networking (MySpace, YouTube).
 - Virtual reality (Second Life).
 - Peer-to-peer computing (Joost, Zopa).
 - Rich media (Circuit City's Firedog customer support kiosks).
 - Mash-ups (E*Trade Intelligent Cash Optimizer).

Challenges

- Consumers are ready for new ways of interacting with businesses. Some challenges for business are:
 - Getting customers to spend money. They are willing to spend more money for a positive experience.
 - Providing new ways for companies to reach and interact with customers to increase sales and productivity.
 - Meeting new customer expectations. This requires a fundamental change to traditional business models.
- Businesses need to deliver a superior customer experience to be competitive.
 - Organizations must pay attention to the blogosphere, social networking sites, and wikis. Case in point: in 2004, a blogger posted a video showing how to pick a Kryptonite bike lock with a Bic pen. As the story gained steam, Kryptonite continued to assert that its locks were effective against theft.



- Ensuing outcry from bloggers pushed the story into mainstream media across the United States. The company issued a product recall one week later; after three years, a Google search still turns up the original video and many negative stories.
 - Personalization—the basis for creating a unique customer experience—is expensive. Only through aggressive use of IT can personalization be delivered reliably and with a profit premium.

Opportunities

- IT is the core capability that enables anytime/anywhere experiences for customers.
- The key to creating a differentiating customer experience is understanding customer behaviors and preferences. Again, IT is the critical enabler.
- Cisco IBSG recommends a framework for personalizing customer experience called CASA:
 - **Capture**: sense the environment and associate it with a unique customer or employee (example: track customer behaviors).
 - **Analyze**: detect patterns in customer behaviors, formulate insights, and determine appropriate policies to apply.
 - **Store**: retain accumulated information and associated policy decisions until the next interaction opportunity (example: when a customer calls for support, that customer's history with the enterprise is immediately available to the support person handling the case).
 - **Act**: apply the policy at subsequent interactions (example: when you buy a book at Amazon.com, the next time you go to Amazon, the system recommends related books to you).
- Personalization pays. Data from personalized transactions can be monetized across the entire supply chain.

THOUGHT LEADERSHIP SHOP TALK

Innovation: CIOs Creating the Environment

Landscape

“Most companies consider innovation important, often critical, to their business. Yet they’re increasingly frustrated,” said BCG Senior Partner James P. Andrew, the lead author of *Innovation 2007: A BCG Senior Management Survey*. “They feel they should be getting more from their innovation efforts: more and better new products and services; stronger internal processes; improved customer experiences, and more effective business models. Yet, in many cases, these benefits remain elusive.”

With innovation becoming integral to business growth and profit, the CIO’s role continues to grow. CIOs need a successful innovation strategy to connect with innovation resources, wherever they may be. These include marketing, manufacturing, R&D, partners, bloggers, academies, customers, focus groups, virtual worlds, design firms, and more. Innovation strategies that ensure collaboration, invention, adoption, and execution include Web 2.0 technologies like podcasts and virtual environments, and new collaboration technologies, social networks, and Second Life. The diversity of ideas from multiple resources leads to innovative solutions.

Drivers

- Increasing innovation investments in China, India, and other rapidly developing economies.
- Innovation breeds success: leading global innovators outperform their peers by nearly 400 basis points per year in terms of stock price.
- The need to connect innovation resources.
- The network, because it is a generative platform that solicits and enables innovation by those who are connected to it.
- The increase in collaboration tools.
- The requirement to collect, analyze, and turn vast amounts of data into a valuable asset for turning investments into technologies and revenue.

Challenges

- Risk-averse corporate cultures that fail to focus on speed when converting ideas to initial sales.
- Using the wrong metrics, “customer satisfaction,” and “overall revenue growth” instead of “time to market” and “return on innovation investment”.



Inhibiting innovation by not realizing the network's potential. The innovation network is expanding. The question is: are you reaching beyond its borders and tapping into the knowledge base of partners, customers, and other outside organizations?

- Stalling innovation by refusing to embrace collaboration. Collaboration is the simple idea that large groups of people are smarter than an elite few. Large groups are better at solving problems, fostering innovation, and, perhaps, even predicting the future.
- Creating a culture that can overcome innovation inertia and break down silos of information/communications. Failure to do so will hinder companies from aligning organizational structures and resources to enhance innovation effectiveness.

Opportunities

- New sales channels—YouTube, MySpace, Second Life.
- New customer experience—combining a camera, portable multimedia player, text messaging, visual voicemail, e-mail, Web browsing, and Wi-Fi in one device. Most recent example is the iPhone from Apple.
- New service—virtual reality. For example, Lands' End, which lets people “try on” clothes using “My Virtual Model” avatars that match customers' body types. Another is the Cisco Island in Second Life, where Cisco showcases products and trains employees and customers about products.
- New process—virtual design processes. For example, Boeing built a global collaboration design environment using a vast IT network that enables distributed teams to interact as if they were in the same room.
- New wikis and blogs. Examples include the following:
 - Wikipedia.com.
 - Idea Zone, Cisco's internal collaborative workspace wiki that encourages and supports development of new business ideas. Any Cisco employee can view, add, and comment on new product ideas, allowing Cisco to tap into the intelligence of all employees to get the best ideas.
 - FastLane, the General Motors blog that is a source of executive opinions, insights, company news, and podcasts.
- Involve customers via the Internet as a source of new ideas to create or improve products and services. For example, The Mars Corporation established Web-based customer polling to select new product colors and packaging for M&Ms. Nokia, on the other hand, created Concept Lounge, which invites consumers to share designs; winning ideas go into production and consumers are paid for their efforts.
- Collaborate both internally and externally.

Benefits

Innovation improves the quality of ideas, ensuring that ideas have a greater likelihood of feasibility, viability, and desirability. With these connections in place, products and services can reach markets faster.

THOUGHT LEADERSHIP SHOP TALK

The Big Spend

Landscape

Traditionally, IT has been about reducing costs and increasing productivity. But that role is changing. Forward-thinking organizations have begun looking to IT as the enabler of new ways of doing business, and as a catalyst for business innovation. When IT assumes this more powerful and strategic role, its importance to the enterprise becomes magnified. How can CIOs maintain their hard-earned status as strategic leaders amid the rising costs of maintaining legacy systems/service levels and energy-hungry data centers, as well as complying with various mandates?

According to a 2007 study by Forrester Research, the majority of CEOs do not view IT departments as effectively managing the assets (people and equipment) under their control. In companies where this view prevails, IT budgets will remain flat or tied to a percentage of revenue.

When IT is perceived as a source of business innovation and process improvement, funding is more likely to be viewed as an investment to fuel future growth, just as IT is considered an enabler of business results. CIOs should be influencing CEOs about the enormous value of reinvesting productivity gains into new initiatives.

Drivers

- Where expectations of IT are high, the drive for innovation is rooted in the need to:
 - Differentiate the customer experience.
 - Globalize.
 - Obtain access to remote locations and/or expertise.
 - Collaborate and communicate across the enterprise.
 - Obtain and use business intelligence.
- IT departments are getting better at employing a more discriminating outsourcing strategy by understanding what should be outsourced and what should be kept in-house.
- The need for business intelligence and content management is growing.

Challenges

- Define the right metrics and quantitatively demonstrate the value of IT spending across the enterprise.
- Address the fact that, according to Forrester, CEOs who are happiest with their IT groups and CIOs are also likely to have the lowest expectations.



- Shift the majority of IT spending from maintenance to new technological innovation.
 - According to an *InformationWeek* 500 survey, 60 cents of every IT dollar goes to maintaining existing systems, and only 40 cents are left for new projects and technology.
- Create a close working relationship with the CEO to take further advantage of the enterprise (and budget). This may or may not be possible in a given situation.
- Encourage proactive innovation. In the long-term, CIOs who do not make this move will be left behind.
- Educate senior management and provide the metrics to back it up—shifting IT from its traditional role to that of business innovation will require a great deal of effort on the part of the CIO.

Opportunities

- *CIO* magazine, in its 2007 “State of the CIO” report, says that an average of 43 percent of current business initiatives considered “innovations” are being driven by IT, up from 34 percent 12 to 24 months ago. This trend is predicted to accelerate.
- Using techniques such as applications scoring, CIOs and business executives can objectively evaluate the applications portfolio to identify where best to apply focus and resources, where to halt maintenance of applications, or where applications can be replaced or eliminated completely. For example, HP, as part of its IT restructuring, plans on reducing 5,000 applications to 1,500.

Benefits

- Building more successful enterprises.
- Delivering valuable customer experiences for competitive differentiation and increased profit margins.
- Increasing IT usage.
- Increasing IT budgets.
- Taking a proactive and recognized role in—and credit for—the success of the enterprise.

GENERAL SESSION

CEO/CIO Partnership: Expectations and Leadership

Landscape

CIOs believe they are trusted and respected business leaders, but do CEOs share the same view? The relevance of the CEO-CIO relationship to an organization's core mission has never been greater, but a gap persists in what CEOs say they want and what they *really* want—and between what CIOs *think* they are delivering and what they *really* are delivering.

The pace of technology is rapid; to partner effectively with the CIO, the CEO must tie the pace of business to the pace of technology change. According to senior executives who attended the Cisco.

CEO.CIO Leadership Council 2007, the leading concerns are:

- How to get closer to customers.
- How to earn a larger portion of the customer's spend.
- How to foresee and catch market transitions, along with the impact of market transitions on business models.
- How to understand compliance beyond Sarbanes-Oxley: the "green" revolution.

All of these issues can be addressed by IT, at least in part, when the CIO acts in the role of strategic partner to the CEO. Yet, getting to play that role can be difficult:

- Many CEOs say they want "world-class IT," but what they really want is IT to deliver reliable, cost-efficient, well-run IT services.
- CIOs have difficulty demonstrating how IT contributes to the overall success of the business.
- "Keeping the networks up and running is no longer what the CIO has to focus on—the IT part is essentially a commodity. The CIO has to focus on transformation and bringing value to the business, aligning business priorities with IT resources." Steven Brandrowczak, CIO of Nortel, quoted in the September 19, 2007 issue of the *Financial Times*.

Drivers

- **Rapid changes in the marketplace:** The new, empowered consumer expects businesses to deliver personalized, technology-enabled experiences.
- **Rapid changes in the global balance of economic power:** Emerging economies are growing faster than developed nations. New business models often depend on IT to execute company transformation and expedite new processes.
- **Rapid changes in technology:** New capabilities have been enabled by changes in mobility, connectivity, and communications.



Challenges

- Not all CEOs view IT as strategic.
- Not all CEOs understand how IT can support business strategies—what's the business impact?
- CIOs who come from the technology side often lack training and experience in strategic business issues, and therefore do not necessarily “speak the CEO’s language.”
- IT operations were traditionally organized around the technology stack (silos). This organization stifles innovation and collaboration—which should be IT’s greatest contributions to the enterprise.
- Refocusing on business transformation requires more than introducing new technologies to the organization. It requires rethinking the entire framework of IT and IT’s role in the enterprise. It requires the adoption of new models of doing business, showing how IT enables transformation, then linking business metrics to IT’s performance.

Opportunities

- The CIO has an opportunity to become the strategic partner of the CEO, and IT has an opportunity to become a strategic initiative instead of a cost center.
- IT’s contribution to increased productivity now lies in transforming business processes for customers, suppliers, and employees.
- New Web 2.0 capabilities—under the aegis of IT—enhance opportunities for communications and collaboration across the organization, while decreasing expenses.
- IT’s value extends across every function of the enterprise as never before. It is up to the CIO to clarify the role of IT in business transformation and in the achievement of business goals and objectives.

GENERAL SESSION

Drivers: The New Green Business

Landscape

The impact of climate change has investors calling for enterprise climate risk disclosure in record numbers, which is having a cumulative effect on stock valuations. Financial institutions are signing up to dedicated climate change policies. As environmentally aware consumers vote with their wallets, more businesses are launching green initiatives, balancing market opportunity alongside the need for real improvements to sustainability. The green economy for goods and services is growing twice as fast as its nongreen counterpart.

The information technology industry, in particular, is coming under increasing scrutiny, as it is directly responsible for up to three percent of global CO₂ emissions due to energy consumption. Gartner reports that information communications technology's (ICT) direct impact on CO₂ is more than 4.73 million tons a year.

Bringing information to users, instead of bringing users to the sources of information, is critical to cutting carbon emissions. Global positioning systems, radio frequency identification, Web services, unified communications, next-generation broadband, wireless, smart urban infrastructures, and other new integration technologies are making it possible for complex systems to be managed—and self-managed—in innovative ways. It is important that both the private and public sectors understand the role IT plays in reducing carbon emissions and in inspiring green business models.

Cisco launched the “Carbon to Collaboration” program in September 2006, committing to reduce emissions from employee air travel by up to 10 percent in FY2007. This has since been increased to a commitment to a 20 percent reduction in physical travel, which will reduce Cisco's CO₂ footprint by 10 percent. This commitment was accompanied by an investment of around \$20 million in collaborative tools such as TelePresence and Unified Communications, substituting collaborative tools for physical travel.

Drivers

- Increased carbon emissions and global warming.
- Increased commitments from private and public sector businesses:
 - Citi is targeting US\$50 billion for global climate change.
 - News Corporation has committed to becoming carbon neutral by 2010.
 - IBM allocated \$1 billion to advance green technology.
 - Abu Dhabi launched a Zero-Carbon City initiative.
 - Virgin Founder Richard Branson pledged \$3 billion to fight global warming.



- Increased corporate travel costs.
- Increased building-management costs; ICT helps optimize building efficiency.
- Increased IT costs (to run data centers, for example).
- Pressure from consumers and shareholders, who expect companies to be environmentally aware.
- Increased concerns about energy availability and efficiency.

Challenges

- Governments must be willing to invest time, resources, and money to connect their environments. Governments must also remove barriers within their organizations to set the stage for internal ICT readiness, which will guarantee the right level of leadership throughout the development of the project.
- Cities must agree to reduce their own carbon emissions.
- Some businesses and industries may not be well equipped to manage risks associated with climate change.
- More “green” leaders are needed. Despite some major commitments, there are only a handful of true green leaders today. General Electric, Tesco, and Sky Broadcasting are recognized globally for their leadership role, and they have been active for years, with real results. Advanced Micro Devices, Cisco, EMC, IBM, Intel, and Sun Microsystems are among the members of the U.S. Environmental Protection Agency’s Climate Leaders program, committed to reducing corporate carbon dioxide emissions.
- CEOs must have a passion for green and be genuinely committed to reducing CO2 emissions not only globally, but also within their companies.
- There is not enough awareness about green IT among enterprise IT professionals. Because of this, companies are challenged with translating their green concerns into tangible action items in procurement or operations.
- There isn’t enough information from vendors about green IT options, and IT buyers want to know the ROI from the products they buy.
- Marketing green IT is a challenge: creating differentiated messages (linking the green story to substantive features); broadcasting green literacy widely; tuning green messages to segmented target audiences; and busting IT myths such as “it’s better to run equipment 24 hours a day, seven days a week,” or “green costs more money.”

Opportunities

- Change business behavior.
 - Cisco implemented 110 TelePresence rooms around the world, cutting its travel budget by approximately \$150 million as part of Cisco’s “Carbon to Collaboration” commitment.
- Provide customer service in areas not well-served by resources.
 - In industries where face-to-face access to an adviser is required, such as healthcare and financial services, technology can be used to connect customers to those resources and save energy by minimizing travel costs.
- Consolidate data centers and buy energy-efficient IT equipment.

- Change business processes.
 - Use RFID tags to optimize the supply chain.
 - Foster employee contributions to green IT.
 - Improve the way energy use is monitored and reported.
- Buildings make up some 50 percent of global emissions, and the potential for CO2 reduction is substantial. Converging building management systems with IT systems on the same IP data network will help companies make better use of office space.

Benefits

- Fewer carbon emissions.
- Reduced travel costs.
- Improved quality of life: health, work, entertainment, and more.
- Increased savings: Typical savings for a 100,000-square-foot office are 1,500 tons of concrete, 280 tons of steel, and 2,850 tons of CO2 emissions. This is the equivalent of taking 560 cars off the road for a year.
 - Cisco's Connected Workplace initiative reduces space by 40 percent per employee, while increasing comfort, satisfaction, and productivity.
 - Bank of America's revolutionary office tower in New York City is a good example of a "green" building: energy consumption was reduced by 50 percent; potable water consumption by 50 percent; storm water contribution by 95 percent; and 50 percent of building materials were sourced locally.
- Decreased energy use: IBM, one of the largest data center operators, recently announced a project called "Project Big Green" aimed at virtualization and innovation cooling techniques. IBM uses virtual servers to make the hardware do more without using more energy, and cooling is done only when needed. Data center airflow is optimized with thermal engineering and 3-D modeling. The result: doubling capacity without increasing energy use (a 50 percent savings), saving 5 billion kilowatt hours per year.