IBM

e-business case studies

IBM:

Promoting, Enabling and Embracing the e-business Vision

IBM (e)
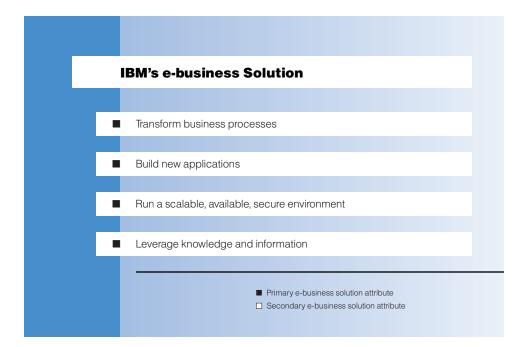an e-business solution ▶

Putting e-business to Work

Contents

Overview

e-business Case Study: IBM

As IBM promotes its vision of e-business in the marketplace, the company has been transforming itself to be an e-business, too. IBM's own e-business vision and strategies reaffirm that it does not simply use "e-business" as a marketing slogan; it has applied these principles to its own business operations with great success. IBM provides a clear example of how even the largest corporations can harness the power of e-business to compete and win in a global marketplace.

IBM's e-business transformation is about how IBM has Web-enabled its business processes to grow revenue and profits, reduce costs and enhance customer satisfaction and loyalty. IBM has been developing e-business applications to process transactions between companies and their supply chains. Using the Internet, intranets and extranets, information distribution and communications happens quickly and effectively to its valued worldwide audiences: its customers, business partners, suppliers, influencers, and its employees. IBM is "practicing what it preaches" — using its own technology and services to transform its business.

This case study shows how IBM has aggressively embraced e-business and reaped the benefits of Web-enabling its technology as it enters the new millennium.

IBM's e-business Solution

- ■ Transform business processes

- ■ Build new applications

- ■ Run a scalable, available, secure environment

- ■ Leverage knowledge and information

■ Primary e-business solution attribute
□ Secondary e-business solution attribute

IBM

The Company

- Employs over 300,000 worldwide, with revenues of over $80 billion

- Operating units include Lotus Corporation, Tivoli Systems and NetObjects

The Web Sites

- Main home page: *www.ibm.com*

- ShopIBM: *www.ibm.com/shop*

- Small business: *www.ibm.com/smallbusiness*

- Developers: *www.ibm.com/developer*

- Partners: *www.ibm.com/partners*

- Receives 7.8 million page hits per week

- Contains over 500,000 pages

- Localized in 70 countries

- Read in 16 languages

Sample Web Technology Initiatives

- IBM Net.Commerce is used as the primary platform for all IBM commerce initiatives

- Lotus® Domino™ and Lotus Notes® are used to support company-wide knowledge management, collaboration and distance learning

- IBM WebSphere™ Application Server is used to develop both internal and external Web applications

Sample Benefits

- Through e-procurement, IBM expects to procure $11 billion in goods and services over the Web, saving at least $240 million

- Through e-care for customers, IBM expects to handle more than 35 million self-service transactions — avoiding $750 million in support costs

IBM and e-business Today: A General Overview

As it has promoted the e-business vision since 1996, IBM has also moved far down the road toward becoming an e-business. By following the doctrine of "practice what you preach," IBM has positioned itself to thrive in the emerging network-centric economy of the twenty-first century. Looking at the trajectory of IBM's e-commerce revenue growth provides a glimpse of just how thoroughly — and quickly — IBM has become an e-business. From February 1998 to December 1998, IBM's monthly e-commerce revenue rose from $35 million to $1.2 billion, for a yearly total of $3.3 billion. This number is expected to more than triple in 1999.

According to Dick Anderson, general manager, IBM's Enterprise Web Management (EWM), IBM was quick to see the competitive implications of Web technology, and moved fast to capitalize on it. As EWM's general manager, Anderson's mission is to drive IBM's transformation into becoming the world's premier e-business by aligning business processes around the Web. "Within IBM, we quickly realized that being Web-enabled provided us the speed, competitiveness and efficiency necessary for growth," says Anderson. "As a result, IBM has become a better provider of goods and services by transforming itself into an e-business, and we've made incredibly fast progress in a short time.

Despite the prodigious growth of its e-commerce volume, IBM's e-business initiatives extend far beyond selling over the Web. With over 300,000 employees, Lotus Notes and Domino have proven to be crucial tools for Knowledge Management at IBM," says Anderson, who points out that IBM is the world's largest deployer of Notes and Domino. The centerpiece of IBM's Knowledge Management initiatives is ICM/AssetWeb, a Lotus Notes/Domino application that supports the gathering, managing and publishing of intellectual capital. Used by professionals within IBM's Global Services organization, ICM/AssetWeb has thus far produced more than $27 million in productivity improvements as its base of users has nearly tripled since the beginning of 1998. "The system also has increased win rates by as much as 90 percent for certain practice areas within Global Services and improved cycle times by up to 60 percent," adds Anderson.

The highly mobile nature of the IBM work force (approximately 40 percent of employees overall) makes it an ideal proving ground for Lotus Notes and Domino as a collaborative tool. "The Notes/Web platform enables IBM employees to stay up to speed on customer accounts, collaborate with colleagues across time zones and geographic distances, and never lose touch with what's happening in the business," says Anderson. Notes/Domino has also proven its mettle as a platform for distance learning through its Global Campus Web site, which has been used to deliver more than 500 computer-based courses. Anderson estimates that in 1999, 30 percent of IBM's internal education will employ Web-based distance learning, saving IBM more than $100 million.

The following sections examine the process by which IBM has transformed itself into an e-business, as well as the phenomenal payback that has resulted from its aggressive use of Web technology.

Tracing IBM's e-business Transformation

IBM has come a long way since 1993, when losses amounting to several billions of dollars brought it to the brink of financial disaster. As part of its mission to restore profitability, IBM scrutinized every aspect of its operations, searching for opportunities for operational improvement. As IBM's Anderson explains, we didn't have to look very far. "At the time, IBM was a maze of complexity," he says. "We had about 400,000 employees doing business in more than 160 countries. We went to market as 20 different businesses, each with its own fulfillment, manufacturing, accounting and payroll systems, its own IT structures and marketing strategies. Redundancy was everywhere." IBM's lack of organizational coherence also had a significant negative impact on customers' experiences, notes Anderson. "This complexity was not only difficult for us to manage, it also made IBM a confusing organization for our customers. There was no single IBM in the marketplace — no point of integration that brought our vast resources together on the customer's behalf."

In the years immediately following, IBM began to reengineer its business processes to reduce cost, eliminate redundancy and accelerate cycle times. At the same time, IBM began to deploy network-centric computing technologies, including Lotus Notes, to create the IT infrastructure that would serve as a foundation for today's more advanced e-business functions. Starting in 1995, IBM looked at how it managed key internal processes so it could produce products that customers wanted as fast and competitively as possible. This involved a variety of reengineering efforts to create a consistent, common global set of management systems and processes. The benefits were clear. For example, purchase order process time was reduced from 30 days to one day. IBM was getting products to market 75 percent faster. On-time delivery increased to 95 percent. Customer satisfaction jumped 5.5 points.

Then the Internet came along and IBM was presented with this incredible opportunity to use its own solutions to become even more responsive to its customers. In 1997, IBM realized it could use ibm.com as the gateway to a host of online services. Not only could the Web play a key role in terms of e-commerce, e-procurement and how IBM cared for its customers, it could link its business processes such as marketing, supply chain management and fulfillment. IBM's Web transformation is a "practice what you preach" story. Its entire Web infrastructure, including Web servers, data centers, networks and workstations is outsourced from IBM Global Services. IBM uses its own IBM Global Services and Interactive Multimedia Group for Web application development and IBM middleware and software in support of its e-business initiatives. A study designed to create a roadmap to deploy more advanced Internet-based applications in support of key processes was commissioned. According to Anderson, the study prioritized projects on the basis of their payback/ROI as well as their degree of difficulty. "Not surprisingly, the ones identified as 'quick hitters' we did right away. We really had to focus on business value to ensure we were doing what our customers wanted," says Anderson.

Another key finding from the 1997 study was the importance of targeting Web content and services to discrete audiences, each of whom have highly specific requirements and expectations. "Our research showed us very clearly that to use the Web effectively we would have to focus on key audiences," says Anderson. "In terms of priorities, our focus is on customers first and foremost, followed by our Business Partners — who are also customers of IBM. Other key stakeholders, listed in no particular order, include employees, what we call 'influencers' — such as the press — and our suppliers. Based on our research findings, we knew that by targeting our stakeholders in a more coordinated and thoughtful fashion, we would be able to maximize the value of the information and services we provide to them." To put this stakeholder-centric focus into practice, IBM began in mid-1999 to create Web content customized for six distinct audience types: Large Enterprises, Small and Medium Businesses, Business Partners, Developers, OEM customers and the general public. "We know from our ibm.com experience that listening to the needs of our customers pays dividends," says Anderson. "That's why we believe this focus on Audience Sites is so important."

ibm.com: The Transformation of a Digital Brand

As the previous section points out, the most fundamental changes wrought during IBM's e-business transformation related to business processes and IT architectures. However, another key aspect was the rationalization and standardization of ibm.com, the IBM company Web site. As IBM's Anderson notes, the site's main shortcomings related to its quilt-like growth since first being launched in May 1994. "Every organization was putting content on the site and everybody's page and navigation looked different," says Anderson. "While all of the smaller sites had their own merits, they were flawed because they were IBM organizationally driven — not customer driven." Moreover, in Anderson's view, the disparate nature of IBM's Web site was a barrier not only to content presentation, but to IBM's e-commerce ambitions. "It became clear to us that we had to make it easier for people to navigate, to buy, and to merchandise so that our customers would know what they could and could not buy."

Prior to the redesign of ibm.com, IBM carried out extensive customer research and usability testing. Beginning in September, 1998, IBM solicited the feedback of developers, IT decision makers, IT implementers, business, and general users. A key finding of the study was that the majority of respondents visit ibm.com for both product information and comparative shopping, and wanted relevant information presented in an easy-to-use format. Specific preferences included:

- clearer, integrated product and shopping information presented at the beginning of the shop process;

- the option to configure systems;

- easier navigation;

- improved search capability;

- shorter page loading times;

- more contact options, and

- fewer graphics.

IBM launched the latest redesign of ibm.com in February, 1999, the ninth such redesign since IBM first rolled out a Web site in early 1994. As part of the redesign, says Anderson, IBM focused on consistency — from the IBM home page to key sites that extend from it — leading to easier and faster navigation. This includes single-clickthroughs for key audiences like small business, consumers, developers, business partners and investors, as well as buttons for key functions like ShopIBM, Download and Support. IBM's retooled navigation system has already begun to yield measurable results. While page views to ibm.com have increased slightly between July 1998 and July 1999, visits have increased 111 percent, implying a dramatic increase in the navigational efficiency of the site. "Since the re-launch, time spent per visit continues to decrease, falling 28 percent between February and July," says Anderson. "While we attribute this to a whole range of factors — including faster page loading, more effective searches, and easier navigation — the one clear conclusion we've made is that users of ibm.com are getting what they want more quickly."

"Our research showed us very clearly that to use the Web effectively we would have to focus on key audiences...We knew that by targeting our stakeholders in a more coordinated and thoughtful fashion, we would be able to maximize the value of the information and services we provide to them."

— Dick Anderson, on Audience Segmentation

As evidence of this, ibm.com has received a number of awards and industry recognition, testimony to its competitive stance and best-of-breed presence. This fall, it was named Best Web Site by The Financial Times, Large Organization category, for how it used the Web as "the e-business hub of all company services." IBM was given the prize ahead of Dell, Gateway and UPS. It recognized the site's top navigation and ease of use. Other awards the site has received include:

• IBM earned Purchasing Magazine's Medal of Excellence.

• ibm.com named one of ZDNet's Top Ten e-commerce sites.

• PC Week Best Practices Award named Winner, Best e-commerce site — ibm.com.

• PC Week Best Practices Award named Winner, Return on Investment Category — A-Source.

• IBM named a PC Week Top 100 Networking Innovator.

• IBM's Manager QuickViews wins Award of Merit by Electronic Performance Support Systems.

• Business 2.0, "Fastest Growing Web Business".

• Financial Times Corporate University Xchange Excellence Award (Distributed Learning).

• Ziff Davis' Inter@ctive Enterprise Award at Network+Interop, May, 1999.

• Going Global, an IBM distributed learning site, was awarded Silver Finalist Recognition in the Axiem Awards Competition, which recognizes those who produce the best in media overall.

• Coaching Simulator, an IBM distributed learning management development site, was awarded the Copper Axiem Award, recognizing it as best in media overall.

• ibm.com Japan was rated number one site in Yahoo Japan's audience survey.

• IDC rates IBM's Small Business Web Sites 3 stars for "portal potential" and 4 stars for destination. This places it ahead of Compaq and Dell.

• The IBM Research 'Extended Supply Chain Management Group' won the 1999 Franz Edelman Award for Supply Chain Reengineering, sponsored by the Institute for Operations Research and Management Sciences.

Within the overall redesign story, one of the key highlights was the enhancement of ShopIBM, IBM's online shopping site, which has played the single most significant role in increasing traffic at the ibm.com site. "We completely rebuilt ShopIBM," says Anderson, "making it much easier for customers to find and configure products, and buy what they want." Featuring some 14,000 products, ShopIBM is built for efficiency, with all transaction processing consolidated on a single commerce engine: IBM Net.Commerce. Prior to the redesign of ShopIBM, IBM had employed approximately 30 commerce engines throughout the Web site.

While ShopIBM was designed (like the ibm.com site) to have a unified look, feel, and navigation system, its sophistication is even better illuminated by its robust transactional capabilities. For instance, its improved registration capability allows customers to store credit card and shipping information, "save" their electronic shopping cart, and view previous direct orders. Other enhancements to IBM's shopping cart capability include the ability to buy bundled products, configure PCs and validate that configuration. The redesigned ShopIBM has also expanded the range of products available online, including PC accessories and upgrades, and also enables customers to comparison shop for servers and PC products. What's more, customers purchasing on ShopIBM can now take delivery direct from IBM in a single, transparent transaction. "These features exemplify IBM's goal of providing maximum flexibility for our Web customers," says Anderson.

IBM and the "e-business Cycle"

As a result of its transformation into an e-business, IBM is now better equipped to compete in the emerging information economy, which demands speed, flexibility and the effective leveraging of information. Another significant benefit of IBM's transformation experience has been the ability to apply its own lessons learned — as well as those gleaned from thousands of customer engagements — to other businesses. This, says Anderson, has allowed IBM to effectively create an approach for companies seeking to become an e-business. This approach called the "e-business cycle," outlines four initiatives that organizations must address as they reinvent themselves for e-business. These initiatives are defined as:

• Transform business processes;

• Build new applications;

• Run a scalable, available, secure environment, and

• Leverage knowledge and information.

IBM's business process transformation has unfolded in three phases. Under the first phase, which began in 1993, IBM streamlined its general ledger, payroll and human resources operations and systems, and began a longer term effort designed to unify and integrate its worldwide organization. After completing the majority of its phase one goals in 1995, IBM then moved on to the second phase of its process redesign, which focused on business processes higher-up the value chain, such as Customer Relationship Management, Integrated Product Development, Integrated Supply Chain, Procurement, Production and Fulfillment.

"IBM's goal has been to streamline and standardize these processes, integrate them, and deploy them across the enterprise," says Anderson, who notes that while work toward these goals is ongoing, the efforts have already manifested solid increases in business value. One important case in point has been hardware development time, which IBM has cut from four years to an average of 16 months, with some products being developed in as few as six months. IBM is just now entering the third wave of its process redesign, which its defines as the Web-enabling of its business process and internal systems. These third-phase initiatives are outlined in detail in the following section.

Within the e-business cycle approach, the importance of building applications relates to the basic reality that very few companies can afford to scrap their legacy systems and applications and begin to build an e-business with a clean slate. Instead, the e-business cycle calls for companies to develop their systems and applications architectures by following three basic tenets:

• leverage some legacy applications and eliminate others;

• develop new applications when necessary, and purchase best-of-breed solutions when appropriate, and

• deploy middleware to enable heterogeneous systems and applications to work together.

As Anderson points out, IBM has been aggressive in deploying e-business applications, while closely following its tenets (outlined above). "About half of our e-business applications were off-the-shelf solutions — such as SAP R/3 — that we have customized to our work environment," notes Anderson. "IBM has abandoned the 'not-invented-here' bias that used to define our culture. We owe it to ourselves and to our customers to take advantage of best-of-breed technology."

> *"We completely rebuilt ShopIBM, making it much easier for customers to find and configure products, and buy what they want... These features exemplify IBM's goal of providing maximum flexibility for our Web customers."*
>
> — *Dick Anderson, on the Revamped ShopIBM*

Under the e-business cycle, running a scalable, available, and secure environment is important because its ensures that a company's IT strategy and investments are consistent with its overall business strategy. For IBM, following this guideline has been crucial to its efforts to integrate its global enterprise. At the root of IBM's e-business strategy is the Application Framework for e-business, a proven technical approach designed to help customers enable better integration between e-business applications and faster implementation of e-business platforms. IBM's internal adaptation of the Application Framework is called Global Web Architecture (GWA), a common Web architecture for all of its internal and external Web hosting in support of IBM's e-business initiatives. GWA is provided in partnership with IBM Global Services. Seven GWA centers in Raleigh, Southbury, Boulder, Schaumburg, Portsmouth, Kawasaki, and Sydney have been configured with standard hardware and software, systems management, and network and security components. "The Application Framework for e-business has also enabled us to use our e-business infrastructure to leverage existing data and applications, which has in turn reduced IT investment," says Anderson.

Core elements of GWA include VisualAge for Java, Lotus Notes/Domino, the DB2 family of products (databases and connectivity to mainframe DB2 databases), Net.Commerce, and MQSeries, which is used to link IBM's newer solutions with legacy systems. More recent additions to the Application Framework include WebSphere Application Server (used for developing both internal and external Web applications) as well as software products from NetObjects and Tivoli Systems, which are used to provide end-to-end application, system and network management. "Having GWA in place allows us to build speed and flexibility for e-business into our processes," says Anderson. "Without this infrastructure, we run the risk of obstructing the flow of information across the enterprise and impeding our responsiveness to customers."

Leveraging knowledge and information, the final ingredient of the IBM e-business cycle, is critical because it allows companies to apply knowledge to continue improving processes in their businesses and, on the IT side, to build better applications and to deploy them more efficiently. Prominent examples of IBM leveraging knowledge internally are seen in its widespread utilization of Lotus Notes and Domino for collaboration, training, and other knowledge-intensive activities. IBM has also leveraged the information it has gathered from its customers and Business Partners through its use of data mining and business intelligence tools.

Web-Enabled Processes: the Linchpin of e-business

As mentioned in the previous section, IBM has embarked on the third phase of process transformation, under which it has begun to Web-enable various business processes. IBM's Web initiatives were developed using its audience segmentation as a guiding framework, and include:

• e-commerce (Web-based selling of products and services);

• e-procurement (Web-based purchasing);

• e-care (Web-based delivery of services to key stakeholder groups);

• e-learning (Web-based distance learning, knowledge management and other intranet applications used by IBM employees), and

• e-marketing communications (use of the Web to extend IBM's brand image and market position).

These initiatives are discussed below.

IBM's e-commerce Initiatives

The key goals of IBM's e-commerce are to build revenues and reduce costs by selling IBM products and services online. In 1999, IBM expects to generate e-commerce revenues of about $11 billion. Anderson notes that the lion's share of IBM's e-commerce business volume is generated through its extranet links to its Business Partners, OEM partners, and large accounts, with middle market, small business, and consumers accounting for a smaller share. Top product categories among IBM's e-commerce transactions include PC products, storage products, midrange servers and software.

One of the highlights of IBM's revitalized e-commerce programs has been the redesign of ShopIBM. In May, 1999, IBM launched another major e-commerce initiative, Project Odyssey, with the goal of significantly expanding the scope of IBM's PC product offerings for direct purchase on ibm.com. "Project Odyssey will enable customers to use ibm.com to buy the complete line of PC products directly from IBM," says Anderson.

IBM has also made extranet-based linkages with large accounts and OEM customers a key element of its e-commerce strategy. Known as e-sites, these extranets provide customers with a customized, streamlined view of IBM's e-business offerings, including the IBM and Business Partner support team, customer-specific discount schedules, joint project information, and links to other IBM Web sites. A number of IBM customers have also taken advantage of IBM's online PC shopping tools, which deliver specialized customer PC pricing from both IBM and its Business Partners. On the OEM side, IBM's e-sites are designed to provide customers with time-to-market advantages and access to timely information they can use as a business intelligence tool. "Our relationships with OEM suppliers cover all ranges of the e-business chain, from basic product and inventory information to online ordering," says Anderson. "As an e-business leader, IBM views the Web as a key area where we can differentiate our offerings and provide our customers with the highest levels of service and value."

> *"By shifting a customer service transaction from a live employee to the Web, we reduce our costs by around 70 percent. In 1999, we expect to double the number of self-service transactions on the Web, enabling us to avoid costs of around $750 million over the year."*
>
> — *Dick Anderson, on e-care for Customers*

Through its Small Business Center Web sites, IBM is also using the Web to deliver value-added services to its small business customers. In May, 1999, IBM launched re-designed Web sites in 11 countries with the aim of providing advanced e-commerce and related services to small businesses who seek to leverage Internet technology. "These sites provide small customers access to personalized business, product and pricing information, as well as education and hosting services," says Anderson. "Our goal here is to help small businesses that want to expand their presence on the net."

IBM's e-procurement Initiatives

Under its e-procurement initiative, IBM expects to purchase $11 billion in goods and services over the Web, saving $240 million and nearly eliminating the 5 million invoices it receives yearly from its suppliers. According to Anderson, one of the major benefits of IBM's Web-based procurement program has been a quantum leap in the efficiency of purchasing within IBM, and a commensurate increase in satisfaction among IBM employees. "When our reengineering initiative began, 60 percent of IBMers were dissatisfied with the existing process," notes Anderson. "The reasons were obvious: It typically took 30 days to process a purchase order, contracts averaged more than 40 pages, and the entire contract cycle took up to a year." As a result of these inefficiencies, one in three IBM employees bypassed the standard procurement process to avoid the bureaucracy, often incurring higher costs as a result.

By Web-enabling the procurement process, IBM has reduced its complexity, shortened the procurement cycle, and enabled information sharing across the country, positioning IBM to better leverage economies of scale to strengthen its purchasing power. Some of the benefits: Purchasing outside of standard channels has fallen from more than 30 percent to less than 2 percent, while employee satisfaction has risen to more than 85 percent. Moreover, by sharing procurement information, IBM has been able to negotiate better contracts with its suppliers, contributing to a total savings of $4.2 billion between 1995 and 1998.

IBM's e-care Initiatives

IBM's e-care programs, segmented by audience, include e-care for Customers, e-care for Business Partners, e-care for Influencers (defined as press and consultants) and e-care for employees. Under the e-care for Customers program, IBM provides Web-based customer service and support to reduce costs and improve customer satisfaction. IBM expects to process more than 35 million self-service transactions in 1999. "Customers are using the Web more than ever to serve themselves, getting quick answers to simple sales and technical queries," says Anderson. "By shifting a customer service transaction from a live employee to the Web, we reduce our costs by around 70 percent," notes Anderson. "In 1999, we expect to double the number of self-service transactions on the Web, enabling us to avoid costs of around $750 million over the year. What's more, customer satisfaction improves because customers get quick answers to their questions around the clock."

IBM's e-care for Business Partners is designed to promote loyalty and revenue growth through Web-based programs. For instance, IBM's PartnerInfo application allows more than 45,000 business partners worldwide to access product and marketing information in 10 languages. PartnerCommerce, IBM's Web-based ordering tool for Business Partners, gives partners the ability to check on supply status, purchase products, and track orders on the Web. PartnerCommerce also offers Business Partners the means to apply for and receive credit and financing online through IBM Global Financing. IBM's QuickShip application has reduced Business Partners' order/shipping cycle from three days to less than 24 hours. Today, IBM Business Partners are able to purchase nearly all IBM products on the Web.

The e-care for Influencers program provides Web-based access to information and resources for such key stakeholders as press, IT consultants, financial analysts and shareholders, and prospective employees, with tailored Web sites on ibm.com providing easy and worldwide access to information. IBM's Press Room for the media offers access to company press releases, executive biographies and speeches, high-resolution photography and a worldwide database of press reps by beat.

IBM's e-care for Employees provides Web-based services such as distance learning to employees, with key Web features including online instruction, study groups and exams. According to Anderson, services such as Web-based distance learning dovetail closely with IBM's highly mobile workforce. "Mobile workers such as our field employees don't have time to spend in a classroom, but they do have a constant need to keep up-to-date," says Anderson. "This is why distance learning has been such a powerful and cost effective training tool for IBM." Anderson estimates that one-third of IBM's marketing training is conducted via distributed learning. Moreover, in the market intelligence area, a new 18-month training and accreditation program is 100 percent Web-based. This program, called Core Body of Knowledge, has resulted in 60-70% cost savings and significantly improved program effectiveness. IBM expects the share of total training carried out via distance learning to double from 1998 to 1999, yielding savings of over $100 million.

IBM's ROI for e-business Activities

IBM's business transformation efforts have produced strong returns in nearly all areas of its business. Anderson notes that during the first half of 1999, IBM met or exceeded nearly every goal with regards to cost savings, cost avoidance, usage, and revenue. "The ROI performance of our Web-based initiatives reaffirms the notion that IBM does not simply use 'e-business' as a marketing slogan. It has applied these principles to its own business operations with great success," says Anderson. "IBM provides a clear example of how even the largest corporations can harness the power of e-business to compete and win in a global marketplace. In fact, competitive benchmarking completed by IBM Global Services indicates that IBM is best-of-breed in Web-based procurement, distributed learning, and customer service."

Examples of strong ROI performance exhibited by IBM's e-business initiatives include:

- *ibm.com and ShopIBM* – In the one week after the new ibm.com site went live (in 2/99), the number of shoppers at the site increased 118 percent, with ShopIBM experiencing a 500,000 hit increase, and sales increasing by 400 percent – without the assistance of advertising or PR. Navigation-related benefits include a 63 percent increase in the revamped 'search' tool, coupled with an 84 percent decrease in the usage of the 'help' function.

- *e-commerce* – IBM's 3Q99 e-commerce revenue totaled approximately $3.7 billion, representing a seven-fold increase over 3Q98 revenues of $524 million. For the full year, e-commerce revenue is expected to be about $11 billion.

- *e-procurement* – Through 3Q99, IBM purchased $6.5 billion in goods and services over the Web, saving $176 million. In 1999, IBM expects to procure $11 billion in goods and services over the Web, saving at least $240 million through the implementation of e-procurement applications with suppliers. In 1999, IBM will reduce the number of paper invoices it processes from 5 million to virtually zero by replacing more costly paper processes and implementing Web applications that expand integration efforts with suppliers.

- *e-care for customers* – Through 3Q99, technical support self-service inquiries over ibm.com reached 29 million, resulting in cost avoidance estimated at $620 million. For the year, IBM expects to handle more than 35 million self-service transactions – avoiding $750 million in support costs. Since 4Q98, 58 percent of IBM's customer service transactions are done via the Web.

- *e-care for business partners* – Of IBM's more than 45,000 Business Partners worldwide, nearly 10,000 Business Partners currently use Global PartnerInfo on ibm.com to access product and marketing information in 10 languages. Business Partners will account for over $7 billion of IBM's e-commerce revenues in 1999.

- *e-care for employees* – For all of 1999, IBM expects 30 percent of internal training will be delivered via distributed learning, with anticipated savings and productivity gains of well over $100 million. One distance learning application, Coaching Simulator, operates at 90 percent lower cost than IBM's traditional Management Development classes, and can be used by an audience 10 times larger.

- *e-care for influencers* – IBM's Investor Homepage (www.ibm.com/investor) averages more than 90,000 page views per month. The 2Q99 earnings section received more than 50,000 page views in the three weeks following the release of earnings. IBM's 1998 Annual Report has received more than 950,000 page views since its posting in March, 1999. IBM's Press Room site gets more than 175,000 page views per month.

IBM's Lessons Learned for e-business Activities

Dick Anderson believes that IBM's transformation into an e-business has yielded valuable insights into what it takes for other companies to successfully make the transition. Among them:

• *The Need for Top-level Management Commitment* — "From the board of directors down, everyone needs to agree upon and commit to changes in business processes and strategies and prepare to undertake the necessary communications that help with the profound culture change which will result from the transformation. e-business isn't about IT, it's about new business models."

• *The Need for Speed* — "Change must be instigated at high speed, and employees will be required to adapt to capitalize on this new environment by learning new skills, changing their work habits and adapting to a matrixed organization."

• *The Web as a Digital Extension of Brand* — "Since the Web is a gateway to a company, online activities will reflect directly on your brand and should therefore be given very careful consideration."

• *The Need for Open Lines of Communication* — "Business and IT teams need to meet frequently to ensure that business units have the IT support they require and that IT staffs understand the information requirements of their internal customers."

• *The Need for Buy-In* — "Before deploying a new technology, it's important to make sure that the people who will be using it understand the strategic value of the technology and have the training they need to be productive from day one."

"e-business isn't about IT, it's about new business models."

— *Dick Anderson, on the Need for Top-level Management Commitment*

IBM's e-business: 2000 and Beyond

Under IBM's vision of the future of Web-based economy, scale will continue to represent major competitive advantages, although speed and flexibility will prove even more decisive factors. The Web is also expected to further destabilize relationships with customers and suppliers, as they become ever more opportunistic in using the Web to find the best deals for their business.

IBM also expects changes in technology — both evolutionary and revolutionary — to alter the complexion of Web-based computing. As part of what it calls "pervasive computing," IBM expects a far wider number of devices — from appliances to cars to products — to contain embedded semiconductor devices, and many of these devices will interface with the Internet. Within enterprises, more powerful processors married to more sophisticated algorithms in powerful software will enable enterprises to "datamine" for new insight and competitive advantage, while voice recognition will link with automatic translation to all but eradicate the issue of language differences as a barrier to communications.

"All this will lead to an Internet that is always on, in an economy that is never off," says Anderson. "The Internet — and the e-business techniques it has spawned — is really changing the way business gets done in the world. We've learned a great deal about using the Internet in our own transformation, but we are just beginning."

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