



## e-business on demand: the next wave of IT services

*“The Net is an integrating medium. It makes it possible – it makes it imperative – to unify processes and information that in most institutions were splintered in the rush to decentralisation over the last few decades.”*

*— Lou Gerstner, IBM chairman and CEO*

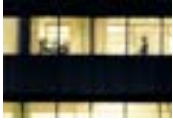
## The next IT services wave

In the midst of an uncertain economy, punctuated by the events of September 2001, enterprises everywhere are working to squeeze more value from their technology investments and placing corresponding pressures on Information Technology (IT) organisations to do more with less. At the same time, companies' data-intensive environments continue to consume more bandwidth, more storage capacity, newer technologies and expert capabilities.

Today's changed world finds IT executives and managers trapped between reactive and proactive demands. Unrelenting budget concerns and the daily business of maintaining a reliable, integrated and security-rich infrastructure can get in the way of piloting new initiatives, aligning IT assets with business needs and deploying new products and services — especially in the face of unexpected financial constraints and a growing skills deficit. Considering the rate of technology evolution, fluctuations in market and growth conditions and the complexities associated with mergers and acquisitions, it's no wonder that IT organisations are stretched to the limit.

### **Elevating the role of IT**

For e-business to make a difference, IT and business strategies must be tightly coupled. This, in turn, means that CIOs and business executives must focus on increasingly common goals. As new initiatives and new technologies evolve, so too will the role of the IT organisation, which is today the foundation for launching new strategies, rendering new services and creating competitive advantages. According to the *Harvard Business Review*,<sup>2</sup> CIOs will become strategists and entrepreneurs, knowledge brokers, relationship managers and negotiators. Additionally, IT managers will turn to service providers for traditional IT functions and will rely on internal resources to hone core competencies and develop distinctive services. Moreover, IT departments will need to integrate new sets of skills in areas like enterprise application architecture, application development and integration, security and IT operations. IT managers will also take the lead in developing required operational standards for business and industry communities.



***e-business on demand***

*“We believe the value proposition of purchasing technology as a service is becoming increasingly clear to business and IT managers. Buying technology as a service allows companies to obtain best-of-breed integrated solutions faster, at a lower cost and avoids the disruption and expense caused by continuous upgrades and technology refreshes.”*

*— J.P. Morgan Securities, Inc.<sup>3</sup>*

The idea of paying only for the IT and business processes you need, when you need them — much like people pay for electricity service — is quickly gaining ground. This concept, which IBM calls *e-business on demand*<sup>3</sup>, refers to the delivery of standardised processes, applications and infrastructure over the network, as a service.



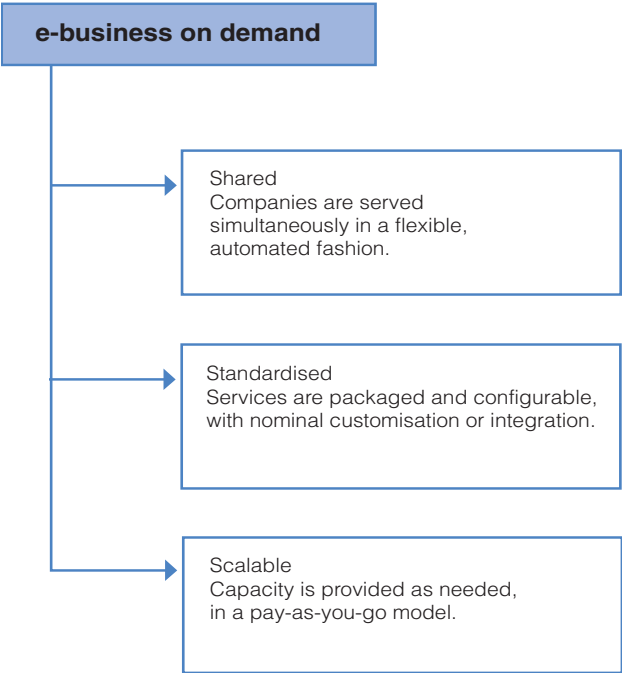
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e-business on demand relies on a security-rich, standards-based infrastructure of repeatable and scalable elements made available to multiple organisations. In most instances, only nominal customisation or integration is required; companies can tap into bandwidth, processing power, storage, applications and Web-based services *as needed*. As a recent article in *InformationWeek* pointed out, “The common practice at many companies is to buy more computer power than is usually needed in order to be ready for spikes in demand. But it’s an inherently inefficient approach.” The article also quoted Jim Pierce, director of Business Systems Development at Anixter Inc., a US\$3.8 billion wiring and cabling manufacturer: “Why would you want to pay for peak capacity if you’re not using it?”<sup>4</sup>

CIOs and IT managers can apply e-business on demand to help control costs, improve implementation and cycle times, reduce risk and more directly correlate IT spending with business returns. Companies pay for the IT they need; infrastructure, processes and applications are security-enhanced, automated, prequalified and pre-integrated; systems and skills are best-of-breed and upgrades, operation and maintenance are furnished via the expertise of the service provider, who is responsible for supporting optimum IT efficiency and desired performance levels. Value accrues exponentially — minus the costs and complexities associated with owning and maintaining a dynamic e-business environment. Basic services are mass-customised, enabling IT organisations to shift their attention to aligning e-business strategies, gaining differentiation and forging new relationships — dynamically. IT becomes an asset — not a liability.

*“For Small to Medium-sized Businesses (SMBs), mass-customised services will drive the price for basic services down and make entry-level services more attractive.”*

— Gartner, Inc.<sup>5</sup>

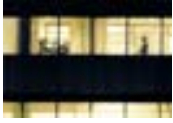


### How e-business on demand complements traditional IT outsourcing

*“Demand for solutions hosting and other IT utility or access services is nearly as strong as for traditionally delivered outsourcing services.”*

— Gartner, Inc.<sup>6</sup>

e-business on demand is a logical and complementary extension of traditional IT outsourcing. Conventional outsourcing involves the delivery of a dedicated, customised infrastructure, technologies and services tailored to an organisation's unique needs. This model often entails the transfer of human and physical assets from the customer to the service provider, who in turn 'leases' those resources back to the customer. Traditional outsourcing is similar to e-business on demand in that IT is provided as a service that leverages the provider's expertise to support a cost-effective, reliable technology platform. e-business on demand adds a number of important innovations to this successful model: essential infrastructure components that include business processes; bandwidth; hardware, middleware and software; managed services; and process know-how. These elements are supplied on demand to a well-guarded e-business community whose 'residents' can access capabilities as required.



## *Trends and directions*

IBM has identified three technology trends driving e-business on demand:

- **Bandwidth and space/cost reductions**

Bandwidth is rapidly becoming a commodity — available in whatever amounts are required and at a lower price point. According to IBM calculations, optical technologies double carrying capacity every year, causing long-haul connection costs to drop correspondingly. This should make it possible in the future for virtual private networks among data centres to support load sharing and distributed architectures.

- **Distributed architectures**

As the Internet penetrates virtually every corner of the world, content (e.g., customer data, applications and video) will shift from a single point of origin (the centralised model) to several distributed sites across the network — thereby helping to reduce costs and optimise service and resilience.

- **Creation of virtual server and storage capacity**

Server and storage virtualisation allows service providers to divide and assign capacity on processors and storage systems more flexibly than ever before — without compromising performance, reliability or security features. Along with enabling the independence of physical devices and their location, this capability is designed to refine hardware performance and lower the cost of shared infrastructures.

e-business on demand is a natural progression. The concepts of this model, *sharing* and *usage-based pricing*, play to the evolution of e-business. By leveraging standards and new technology, service providers are able to extend the key attributes of the Internet itself — a shared platform built using common standards — to deliver a shared, yet reliable and flexible, foundation.

From an IT standpoint, e-business on demand can reduce the complexities and headaches associated with integrating technologies, thereby helping to accelerate implementation time and improve performance, reliability, scalability and security features.

### **Grid computing: the promise of an intelligent, self-managing infrastructure**

*“New middleware, architecture and delivery models are knitting together existing data centres and networks into a powerful and flexible grid, or fabric, of IT resources that are available on demand and billed on usage.”*

— *Gartner, Inc.*<sup>7</sup>

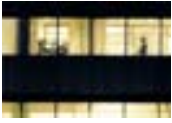
e-business on demand signals the coming age of computing, in which the provision of IT resources will be autonomically administered and dispensed from huge computing grids — strings of servers linked logically on the Internet and supported by open protocols within a security-rich, standards-based environment. Grids can regulate demands and tasks, day and night, without the need for human intervention. Customers' needs dictate processing requirements, which are available when needed and relinquished when not.

Grid protocols, established by the Globus open source group, allow the formation of virtual communities where companies can access and share applications, data and computing power over the Internet. The value of the grid lies in its ability to drive close collaboration and monumental efficiencies across organisational sites and industries. Today, grid systems and services are limited primarily to the scientific and technical industries, where researchers can take advantage of an 'intelligent,' self-managing grid and enormous amounts of processing power to perform experiments, obtain results, then turn the processing capability over for use by others. Soon, that may change.

Grid capabilities are already extending to the commercial marketplace. Project eLiza<sup>7</sup>, a major IBM program dedicated to developing systems that are self-configuring, self-healing, self-optimising and self-protecting, has announced three new e-business management services available for the IBM @server product family. This portfolio includes services to automate key e-business processes that predict, identify and intercept problems in realtime; a partner program that enables leading IT vendors and their customers to develop a blueprint for advanced e-business technology and technologies for infrastructure security and management, including IBM Tivoli<sup>®</sup> software.

The National Science Foundation recently contracted with IBM, Intel and Qwest Communications International Inc. to build a US\$53 million teragrid. Scheduled for completion in 2003, the grid is designed to connect 3,300 processors, contain 600 trillion bytes of storage and be capable of handling nearly 13 trillion operations per second over a 40-gigabit-per-second backbone — nearly 16 times faster than any other research network currently in place.<sup>8</sup>

In November 2001, IBM and MCNC, a nonprofit organisation that supplies technologies to support IT-based economic development in North Carolina, announced an alliance to develop one of the nation's first computer grids for life-sciences research. Involving the collaboration of more than 60 organisations in the academic, business and biomedical fields, The North Carolina Bioinformatics Grid is designed to allow thousands of the state's researchers and educators to accelerate genomics research, an effort that could lead to breakthroughs in fighting disease and supplying nourishment for the world's population. It is also important to note that IBM has built its own computing grid — a geographically distributed 'supercomputer' linking the company's R&D labs around the world — and has contracts in place to help build the United Kingdom's National Grid.

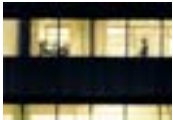


### *What to look for in a service provider*

e-business on demand, while simple to utilise, requires experience and know-how to deliver. The very practical aspects of delivering this new model are hard-won.

The expertise it takes to administer complex infrastructures and remove capacity constraints is formidable — especially considering the rate of technology innovation and business uncertainties that can alter requirements at any given time. When turning to a service provider, companies should specify the following characteristics and capabilities:

- Extensive experience in addressing both business, industry and technological challenges
- Expertise in Internet-based technologies
- A proven track record in provisioning the IT infrastructure and its applications — front-end, backend and legacy alike — as an integrated service
- A documented commitment to open technologies with a history of solid performance
- Hardened around-the-clock Internet data centres
- Advanced server and application monitoring
- Geographically dispersed load balancing
- Access to high-bandwidth Internet connectivity
- Virtually unlimited capacity
- The capability to deploy services rapidly and reliably, whenever needed
- Financial stability
- Global reach and scope.



## The IBM model for e-business on demand



INTRODUCING E-BUSINESS ON DEMAND  
THE NEXT UTILITY

**Infrastructure on demand** — the underlying platform — is a shared, scalable computing environment made up of *standardised core services* that furnish capacity-on-demand, including processing, storage and bandwidth provided through our groundbreaking business relationships with the industry's leading telecommunications companies. *Management services* operate, optimise and administer the shared technical platform, which is security-enhanced, open and standard.

**Business process on demand** enables enterprises to quickly acquire and deploy e-business applications — as well as entire business processes — over the network, on a pay-as-you-go basis. These services deliver pre-integrated software from IBM and other principal brands and encompass *horizontal processes* (e-procurement and business intelligence), as well as *vertical processes*. These applications are supported by an underlying Application Hosting Platform for Service Providers.

**Know-how** — includes consulting support from the people of IBM Global Services and our globally based IBM Business Partners. Through our consulting organisation — the largest of its kind in the world — we are prepared to help companies in virtually any industry select the appropriate applications and infrastructure components and accelerate their ability to integrate, run and manage those assets. We are strengthened by our more than 175 data centres, IBM Research (among the world's largest IT research organisations, averaging several patents a day), the IBM e-business Innovation Institute and the IBM Advanced e-business Council.

Today, IBM is investing in global hosting centres that will serve as our e-business on demand hubs; plus, we are forging alliances with leading software vendors and telecommunications companies worldwide to support superior delivery of our services. Currently, IBM offerings for e-business on demand centre around:

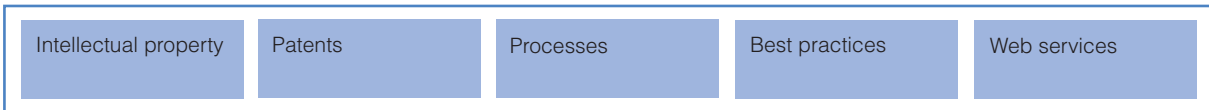
- e-procurement
- e-commerce
- Business intelligence
- Application and managed hosting services
- Storage services
- Content distribution
- Data and document exchange
- Project management.

We are involved in numerous engagements that will further cement our abilities.

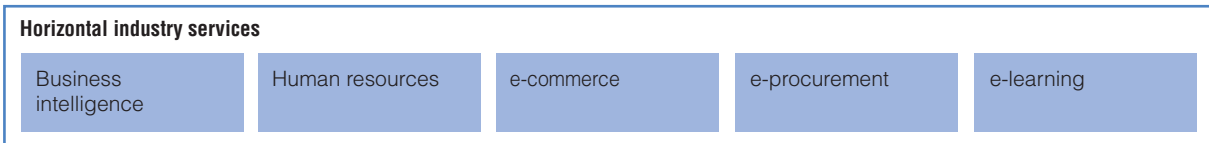
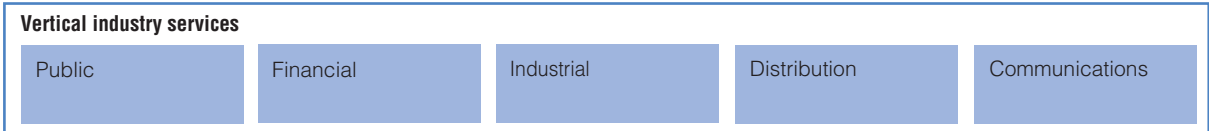
# The next IT services wave

## IBM e-business on demand model

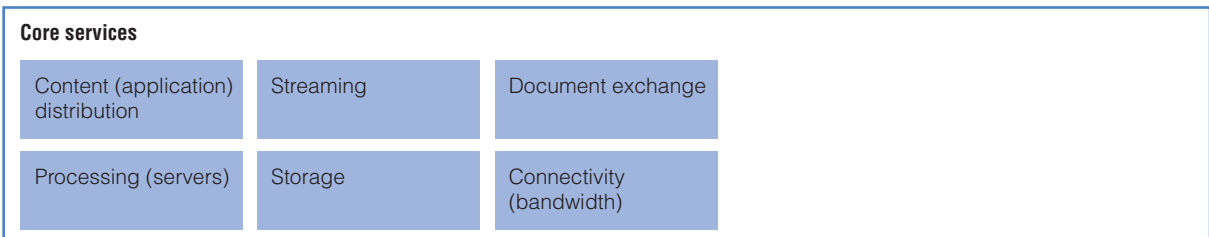
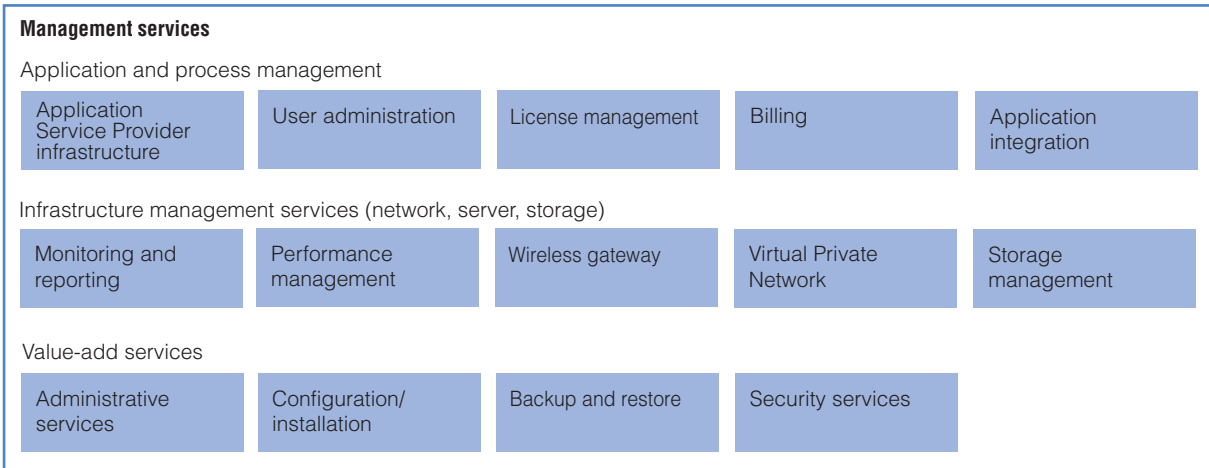
### Know-how



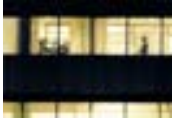
### Business process on demand



### Infrastructure on demand



Source: Mercer Consulting, IGS Analysis, IBM Research



## *Real-world results*

IBM is already helping organisations across industries reap the benefits of e-business on demand.

### **Health care**

**ChartOne**, a leader in the administration and management of medical records for health care providers across the U.S., digitally scans patient records for access by authorised health care providers. Maintaining the company's growing volumes of data requires increasing amounts of storage. ChartOne turned to IBM to provide flexible options for storage on demand, as well as data-management services. Storage management capacity-on-demand was up and running in a fraction of the time it would have taken ChartOne to do it internally — saving the organisation upwards of US\$4 million in IT spending. Services are delivered to ChartOne customers through one of more than 240 IBM e-business Hosting Centres<sup>®</sup>.

Thanks to IBM Managed Storage Services, ChartOne pays only for the storage resources it requires. According to ChartOne CTO Sharad Patel, "We had a choice to make up-front: whether we were going to build our own storage and manage and maintain it, or look for a partner who could do that... That means no big costs up-front and no need to have idle hardware standing by in case storage demands spike."

For a monthly fee, IBM can deliver world-class technology and authentication processes; a high level of availability and backup, security and recovery services.

### **Education**

**Memphis Schools** — the largest school district in the state of Tennessee and the twentieth-largest metropolitan school system in the U.S. — was looking to vastly improve the reliability and cost-effectiveness of its network of 180 sites and 2,000 devices. After estimating that it would take years to marshal the 20 to 30 network experts required for the job, Memphis Schools turned to IBM. Partnering with NetSolve, IBM today delivers remote monitoring services to manage the Memphis Schools network — for a monthly fee. The IBM-NetSolve solution monitors the Memphis Schools network and makes network status information available to the Memphis IT team via a Web portal. Monthly consultations with IBM Global Services experts allow the district's IT staff to review network performance and weigh any recommendations for improvement.

## The next IT services wave

The IBM service has freed up Memphis Schools' human and physical resources — allowing both to concentrate on the organisation's main function: running schools. The system also permits Memphis Schools to offer new, previously unavailable services which include a Russian language class that is delivered over the Internet and is now widely accessible. "IBM brought us a solution that reduces our risk, ensures our network reliability and gives us a cost-effective, fixed monthly fee," concludes Linda Mainord, Memphis Schools' director of Information Technology.

### Industrial

With annual sales of US\$14.5 billion, **Goodyear Tire and Rubber Company** is one of the world's leading tire manufacturers. The company also sells tires, rubber-based goods, chemicals and other products associated with rubber manufacturing. Goodyear was seeking a better solution for connecting with distributors and offering value-based services to its many dealers, outlets and other

channel partners — from small neighbourhood stores to major retailers. The result is XPLOR, a Web-based system hosted by IBM that allows Goodyear dealers to view product catalogues, place and track orders, perform price and inventory checks and obtain postsales service information — in realtime. XPLOR incorporates IBM WebSphere® technology to enable core e-business capabilities.

The system has produced a significant increase in dealers' fill rates while dramatically reducing annual print, postage and communication costs. Order-processing time has accelerated, too — from overnight to realtime. "We've benefited from IBM technology, vision and expertise," reports Duane Hand, Goodyear's e-commerce manager for extranet systems. "Their commitment to us as a partner has been — and will continue to be — a key element."

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## References

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