

Living in an On Demand World

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In every industry and sector of global business today -- as well as in education, government, and institutions of all kinds -- leaders are searching for ways to make their organizations more nimble. They want the ability to respond quickly to whatever the world throws at them: changes in demand, supply, pricing, consumer preferences; fluctuations in capital markets, interest rates, oil prices, enrollments; and the unpredictable and unknown, including everything from hackers to hurricanes.

That's because their customers increasingly want products and services on their own terms, specific to their needs -- when, where, and how they choose. In this world, advantage will go to those companies with the ability to sense changes in their environment -- at ever-earlier stages and in ever-more-granular detail -- and to respond opportunistically.

One problem: most companies are not designed to tap into continuous stimulus from the market, let alone adapt their enterprise dynamically to respond to it. They are not yet on demand businesses.

The three stages of e-business

Three eras define the modern computer industry:

1. Mainframe era, which revolutionized business by automating the back office
2. Client/Server era, which marked the beginning of departmental automation
3. Network era, the current stage, dubbed "e-business" by IBM in 1996

Each of these eras has been marked by businesses worldwide embracing new ways of computing to transform their operations. No change was more dramatic than the advent of the Internet, which itself can be viewed in three distinct phases. In the first stage of e-business, companies began offering access to information on simple web sites. Consumers could look up everything from flight information to bank account balances. In most cases, web sites did little more than replicate data that was already found in printed form. Information became more widely available, but for the most part remained static, limiting its utility.

In the second phase, the Internet became a medium for business transactions. Banks enabled customers to move money among accounts. Airlines took online reservations. As companies integrated internal systems and business processes behind the scenes, transactions of all kinds were made possible. Information became more highly actionable.

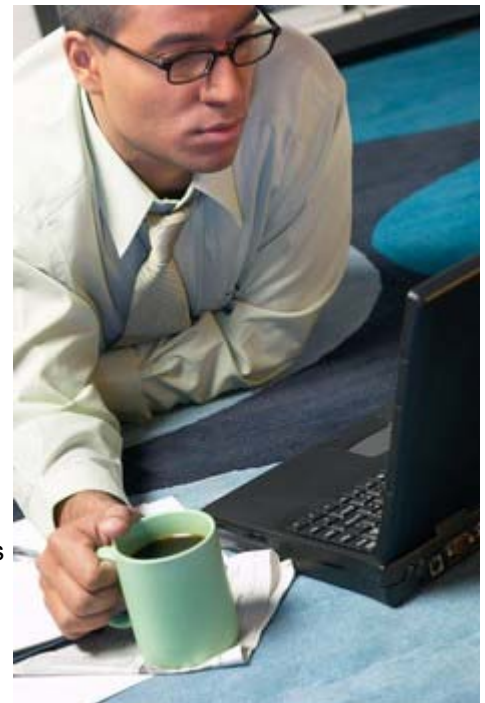
Today about three-quarters of the companies in the G7 countries are well into the first phase of e-business. More than a quarter of all large firms (1000+ employees) and over half of the world's largest companies are now focused on the second stage of e-business adoption. They're building seamlessly integrated end-to-end business processes that make possible a wide range of new interactions among their various constituencies. From this base, only now is the real potential of the networked world coming into view.

The on demand world

Talk to business leaders and it's clear that they are primed for the third phase of e-business. From their perspective, it's time for IT to live up to its long-held promise -- to improve radically the efficiency of their businesses. They want technology to help them integrate business processes end-to-end across the enterprise and with key partners, suppliers and customers. They want technology to help them respond with flexibility and speed to any customer demand, market opportunity, or external threat.

Just as companies did not become e-businesses overnight, the migration to e-business on demand will occur over time. From its work with customers on e-business projects, IBM has identified four necessary characteristics of an on demand business:

- **Responsive:** These companies are capable of sensing changes in the environment and responding dynamically, whether to unpredictable fluctuations in supply or demand, emerging customer, partner, supplier and employee needs, or unexpected moves by their competition.
- **Variable:** Able to adapt cost structures and business processes flexibly; these companies can reduce risk and drive business performance at higher levels of productivity, cost control, capital efficiency and financial predictability.



- **Focused:** Committed to concentrating on core competencies and differentiating tasks and assets; these companies leverage tightly integrated strategic partners to manage selected tasks ranging from manufacturing, logistics, and fulfillment to HR and financial operations.
- **Resilient:** Global, integrated businesses are now 24-hour-a-day operations, under pressure or even attack all the time; this model requires new business systems and processes that are robust and able to bounce back in real time. These companies are prepared for unexpected changes and threats -- be it computer viruses, earthquakes, or sudden spikes in demand.

Ultimately, on demand business enables leaders to see and manage their company as an integrated whole -- even if an important part of it is handled by others. This is about a lot more than operational efficiency. It is about unlocking new value.

In an on demand world:

- A bank could check credit, tax values, and liens instantly and set up loan servicing through a processing partner, cutting mortgage processing time to minutes and costs in half.
- Pharmaceutical companies could access integrated patient data in real time, through in-home diagnostic and monitoring technologies. That would allow them to move more of their business to the creation of customized medicines, rather than depending on high-stakes "blockbuster drugs."
- The auto industry could finally drive inventory efficiency to match the tremendous achievements they've made in manufacturing. (Some auto makers today hold parts in production plants for no more than 45 minutes, yet are burdened with 90 days worth of depreciating inventory on their dealer lots.)

Becoming an on demand business

But how do you become an on demand business? Consider first your business model and management structure: Does it allow you to be responsive in real time to a constantly changing environment? Once you identify the right business model, you need to consider which business processes constitute your core competencies, which differentiate you from your competitors, and where the value is going in your industry. While some companies chose to exploit only IT outsourcing, others look to access specific non-differentiating business processes as a service. They are leveraging partners to ensure access to best-of-breed transformation capabilities, rapid implementation of solutions, scale, and efficiency.

On demand businesses will need to adopt a more operational, active approach to risk management. In a world where information flows across and outside the enterprise, privacy and security concerns are paramount, but an on demand business also needs to guarantee operational resiliency. If you are going to turn information into instant action, you must be always "on," around the clock, around the world. As with any new transformational opportunity, concerns about massive upfront investments can quickly derail plans. On demand businesses will look to new approaches, like business transformation outsourcing and running their own operations more like a utility to help them turn their fixed cost into variable cost structures. Likewise, flexible infrastructure will enable companies to control costs and adapt business processes so that they too can begin moving at the speed of the market; however, few companies can start again. They need to begin with the infrastructure they have today.

An on demand operating environment

On demand business requires on demand computing. The past 40 years of IT evolution have left most companies with an enterprise computing infrastructure that is heterogeneous, widely distributed, and increasingly complex. To realize the benefits of on demand business, customers will need to embrace a new computing architecture that allows them to best leverage existing assets as well as those that lie outside traditional corporate boundaries. This On demand Operating Environment has four essential characteristics:

1. **It is integrated.** Businesses become more powerful when they integrate horizontally, connecting the vast amounts of data, legacy systems, and custom business applications that are spread across their internal operations, partners, suppliers, and customers. Real-time transaction processing capabilities and data integrity of the highest order will be necessary to handle the choreography of customer data, capital, healthcare records, and engineering designs. Data mining and decision support systems will supply the analysis needed to extract insight and make decisions on the fly.
2. **It is open.** Open standards that allow all technologies to connect and integrate have been gaining widespread adoption in the form of Java, XML, web services, emerging grid protocols, and Linux. Never have they been more critical. Open standards make IT -- and business itself -- more modular. Multiple partners can come together, and their systems and applications can talk to each other, to begin immediately working in concert. Enterprises



can far more rapidly implement new end-to-end solutions to meet their current business needs, speeding up time to value. And they can choose best-of-breed solutions, tailored to their industry's unique environment.

3. **It is virtualized.** Increasingly, customers will tap into computing that is served up in a utility-like manner, whether from their own internal systems or acquired across the Internet. Emerging technologies like grid computing will allow a collection of distributed computing resources to be shared and managed as if they were one large, virtual computer. They will most likely first be implemented inside companies, as "intra-grids" that allow businesses to increase the utilization of their existing computing assets significantly. Then, they will move beyond corporate borders, spurring server consolidation, capacity-on demand offerings, and more flexible purchasing and financing arrangements from IT vendors. The ultimate payoff will come when businesses tap into only what they need when they need it, making time to value and return on investment easier to identify and manage.
 4. **It is autonomic.** In an on demand world, where billions of devices and applications interact daily, enterprise leaders will need to be free to focus on managing the intricacies of business rather than the complexities of technology. Security, workload balancing, software upgrades, storage -- the technology will eventually be able to manage itself. IBM is at the forefront of research and development of these autonomic computing capabilities, creating technologies that can self-diagnose, self-configure, and self-heal, much like the human autonomic nervous system. Already, a good number of our software and hardware offerings include some level of autonomic capability.
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