CHAPTER 9

The Business Impact of Cloud Computing

In order to cope with unpredictability, companies need to reduce their fixed costs. What were once considered, in a more predictable economy, normal amounts of fixed cost as a percentage of total revenue are no longer a general rule. To survive, companies need to focus on achieving low break-even points for their operations. If a company can break even at utilization rates of 50 percent or less, it then has room to maneuver to meet the sudden and unexpected fluctuations in product demand and market prices in today's less predictable economy. The more a company can turn fixed costs into variable costs, the more maneuvering room it gains.

Through this economic necessity, more and more companies are shifting away from the constraints of rigid, fixed cost operating models and are trading them for variable cost business models that enable them to respond more quickly to changing market conditions. This approach is better suited to our present economy because it reduces dependence on (and risk related to) large, up-front capital investments to enter new markets or launch new products. This flexible cost structure protects cash flow because operating expenses rise and fall in alignment with revenue.

New Economic Engines for Growth

Just as the industrial technology of the last century enabled the creation of the assembly line that delivered profits from economies of scale, information technology of this century enables the creation

of the agile and responsive enterprise that delivers profits from continuous response to changing market conditions and customer needs. The responsive enterprise, by necessity, uses a variable cost operating model because it is too expensive and risky to be responsive using traditional fixed cost models.

In the last century, business models were largely based on a fixed cost operating model driven by large capital investments to leverage economies of scale. Incremental profits were produced by turning out ever increasing volumes of standard products and spreading operating expenses over larger and larger numbers of units sold. This model worked as long as product demand was reasonably predictable and stable because companies could then allocate labor and capital to optimize production and return on investment.

But when product life cycles are shortened to months instead of years and when the predictability of mass markets is replaced with the uncertainty of a global real-time economy and rapidly evolving consumer preferences, the capital-intensive fixed cost business model no longer works. The real-time economy of this century is composed of many smaller and rapidly evolving market segments where customers want more than just low-priced products. Companies must constantly evolve their products to respond to market needs.

A graphic case in point that illustrates this is the evolution of the mobile phone. In the last years of the twentieth century, Motorola made the most reliable mobile phones at the lowest prices. Their efficient manufacturing processes enabled them to dominate mobile phone markets around the world. Yet since the turn of the century, Motorola has seen its low-cost mobile phones become commoditized and marginalized as they lost customers to a succession of new entrants into the market. Each new entrant offered products that cost a little more and were often a little less reliable but that responded to evolving customer needs. First came Nokia, responding to customer needs that a mobile phone be a fashion statement; then came Research in Motion's BlackBerry, responding to business executives' desire to combine phone and email into one small device; and now Apple with its iPhone has created a whole new category by responding to a mix of desires that, among other things, can store many applications on one highly coveted device.

The most responsive and low-risk way to explore new market segments and develop new products is to use business units with

variable cost operations supported by cloud-based and software-as-a-service (SaaS) systems. Companies adopting variable cost cloud computing services will see their total IT spend versus company revenue go down even as IT spend versus total company operating expenses actually goes up. This is because, in many contemporary businesses, business operations and IT are so closely intertwined that there is hardly any meaningful distinction left between the two, so variable IT expenses will rise as business grows. But it will also drop as business volumes drop, so it is a low-risk way to protect cash flow while operating in new or unpredictable markets.

Companies moving to this operational model from traditional, fixed cost operating models are creating demand for products and services based on a group of related technologies like cloud computing and server and network virtualization. Cloud and virtualization services are provided to customers on a variable cost, pay-as-you-go basis determined by the number of users and their volume of transactions. Suppliers of cloud computing and virtualization products and services have seen their stock prices perform well. This is an important indicator of the shift companies are making to variable cost operating models.[1]

Time to Get Agile and Reinvent Traditional Business Operations

Irving Wladawsky-Berger believes a major impact of cloud computing on business is the trend to outsourcing support activities and then collaborating closely with an extended network of suppliers and customers. In his words:

> Cloud computing, I believe, represents the evolution of IT towards an Internet-based computing model explicitly designed to enable the transition from inside-out to outside-in organizations.
>
> More and more, a company needs to be focused on the world outside its boundaries, not only because much of its work is now being done with outside partners, but in order to better understand our fast-changing market environment so it can make better business decisions, as well as to better respond to the varying requirements of its clients, so it can provide each of them the best possible products and services.[2]

Dr. Wladawsky-Berger believes cloud computing combined with the wide availability of high-speed Internet connections is ushering in an era where computing power, data, and application systems can be delivered and consumed anywhere on demand. The first wave of cloud computing services has begun to standardize the delivery of infrastructure like computing power, data storage, and software platforms.

The next wave of services will go beyond infrastructure and will standardize and deliver mass customized services for companies and individuals. These will be standard processes for activities like accounting, human resources, and finance. Cloud computing will enable companies to acquire more than just software but whole business services as a real-time outsourced service.

He notes that the use of standardized services in the manufacturing industries has brought major improvements in productivity and quality over the past three decades. So there is most likely an opportunity to use cloud-based business services in companies to bring similar productivity and quality improvements to customer-facing and front-office activities.

Peter Fingar is an author and observer of the evolving relationship between business and IT. His thinking about the impact of cloud computing on business operations is presented in his book, *Dot.Cloud: The 21st Century Business Platform.*[3]

He believes cloud computing will transform how companies access information, how they share content, and how they interact with their customers as well as suppliers. Cloud computing changes the economics of business, allowing companies to adapt and scale their business models to market conditions. He sees cloud computing as a way to harness the Internet to: (1) spread computing tasks across multiple clusters of machines; (2) provide a real-time and interactive platform for developing and delivering new products and services; (3) provide a platform for human collaboration; and (4) make the world's information accessible anywhere.

He believes the last decade was about the World Wide Web of information and the power of connecting content, but the future is more about people connecting and collaborating to get work done. It's about execution on new ideas and new ways of working. Business processes are how work gets done, and the cloud will become the place where those processes reside and are managed.

The cloud makes it possible for multiple companies to come together to work as one value delivery system, not just for efficiency but, more importantly, for responsiveness and innovation. But these new organizational forms can't be managed like the factory of old, for each participating business runs on its own clock using its own internal rules and methods. In the twenty-first century, Industrial Age command-and-control leadership gives way to connect-and-collaborate, where every member of a business team is a leader. In the cloud, leaders don't give commands, they transmit information, trusting the team members' competencies and gaining accountability through transparency. True leadership is about cooperation, not control. Transparency becomes the invisible hand of management control.[4]

Irving Wladawsky-Berger and Peter Fingar point out some interesting developments that fall into two main areas. First is the changing relationship between a company and its suppliers and customers in the new outside-in organization. Second is the change in the leadership paradigm from the Industrial Age command-and-control model to the present connect-and-collaborate model.

Get Ready, Get Set, Go: Success in a Real-Time Economy

A study of 400 companies conducted from 1998 to 2004 by Diamond Management and Technology Consultants reinforces what Dr. Howard Rubin's research found, as reported in Chapter 2 in the section titled ''The Patterns Reveal an Interesting Story.'' And the findings of Dr. Rubin's study map right into the developments pointed out by Wladawsky-Berger and Fingar.

The Diamond Management and Technology Consultants study, titled ''Don't Waste a Crisis,'' found that companies succeeding during those years followed seven practices.[5] These practices can be categorized into three groups. The first group of practices—one, two, and three—relates to how a company structures its operating model to best adapt to high change and unpredictable markets. (This group could be called ''Get Ready.'') Practices four and five—the second group—are concerned with how a company selects the markets it will serve along with how it communicates with customers and prospects in those markets. (This group could be called

''Get Set.'') The third group contains practices six and seven and describes company strategies for success in the markets they have selected. (This group could be called ''Go.'')

The seven practices revealed in the study are:

1. *Cut the right expenses by getting at root-cause expenses.* Everyone can cut costs, but only some are able to cut the right costs. Successful companies avoid shortsighted chopping of costs and instead find ways to leverage their spending to improve productivity and cut total company operating expenses.
2. *Automate, automate, automate.* Automate operations when they become routine, and avoid trying to automate rapidly evolving operations. It is easier and cheaper to automate routine operations because they are routine and it is much more expensive to automate complicated operations where rules are constantly changing. Find those operations where people are doing the same things over and over again and make the investments needed to automate them. This delivers operating efficiencies.
3. *Use vendors to drive down total cost and ''variablize'' costs.* Find vendors who have aggregated customer demand for certain operations and made investments to drive down the cost of those operations through economies of scale. These vendors can offer their services at lower rates than a company would pay if it did them in-house. By outsourcing these operations to such vendors, a company can migrate to a variable cost operating model. By paying only for the capacity it needs, a company gets flexibility to ramp up and ramp down their usage and operating expenses to meet changing business conditions.
4. *Identify customers to grow with.* Instead of catering to all customers, companies can focus on key customers where their products are mission critical and build strong relationships with them. Companies find ways to wrap their products with a tailored blanket of value-added services that customize them for their customers and thus make them more valuable. Learn when to let go of traditional customers who are not growing or are shrinking and who want only the lowest prices. It is very hard to make money with these customers.
5. *Optimize their marketing mix.* Focus sales and marketing efforts on market segments and customers who value a company's

products and services the most. Find ways to communicate with these customers in a continuous and real-time manner so as to understand what they want and strengthen relationships with them. Social media like Facebook, Twitter, and YouTube offer ways to do this at minimal cost.

6. *Invest when others did not/invented their future.* Invest in new capabilities to deliver products and services in times when competitors do not. When competitors are hunkered down it's easier to move into new markets. If a company knows where it wants to go and what it needs to do while others are undecided, that is the best time for it to make its moves.
7. *Put all their eggs in one or only a few baskets.* Companies need to concentrate on their strengths and not get distracted. They need to focus new investments in their core areas of expertise or in developing new strengths to respond to evolving conditions in their most important markets as well as attract and keep profitable customers in those markets.

Interconnected, Adaptable, and Specialized

We live in a world where it is clear that companies must keep their cost of doing business low and as variable as possible and at the same time continuously tailor their products to meet changing customer demands. They need to make it simple and convenient for customers to find them, contact them, and do business with them. In addition, companies need to have connections to their customers and suppliers that enable them to collaborate effectively and transact business efficiently.

If we apply the seven practices identified earlier and use them to guide how a company might structure itself, then we get a business model that displays the characteristics of being adaptable, interconnected, and specialized.[6] These characteristics are directly related to the three practice groups. The group called ''Get Ready'' calls for companies to move to variable costs whenever possible so as to be adaptable to fluctuating markets. The ''Get Set'' practices call for companies to select specific market segments and customers and create robust connections with those customers. And the ''Go'' group calls for companies to specialize in their core functions that produce the value-add for its customers. Figure 9.1 illustrates what this business model looks like.

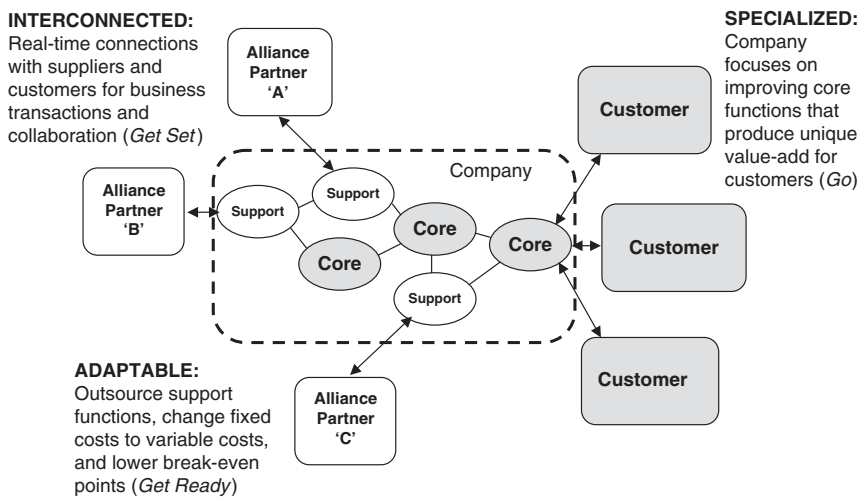

Figure 9.1 Company and Network of Alliance Partners and Customers

A Simple Taxonomy of Business Systems

We can extend this business model further to provide a simple way to think about the systems that companies need to implement a business operating model like the one illustrated in Figure 9.1. Companies need three categories of systems:

1. Interconnecting systems
2. Adaptive systems
3. Specialization systems

Interconnecting systems use text, voice, and video to link a company with its prospects, its customers, and its suppliers in order to exchange data related to routine business activities, like placing orders and paying invoices, and also to collaborate as needed on common projects. A company must be convenient to do business with; the sales, marketing, and customer service groups of a company need to be easy to contact; and information about its products must be readily available and quickly understandable.

Examples of systems in this category are all types of social media like Facebook, Twitter, YouTube, and so on. Also in this category are application systems, like Google Docs, GoToMeeting, Skype, and WebEx, that enable collaboration among workgroups at different

companies and in different geographical locations. This category includes the Internet itself along with various wireless Internet connections and electronic data interchange (EDI) systems.

Adaptive systems enable a company to monitor what is happening in their internal operations and in their interactions with their customers and suppliers. These are systems that allow a company to adjust its daily operations to meet market conditions and control its own costs of doing business. This includes traditional systems like accounting/ERP (enterprise resource planning), purchasing, HR/payroll, financial reporting, and budgeting.

Because variable cost business operations are achieved by outsourcing support activities to supplier partners, it is important for companies to respond quickly as events unfold and problems or opportunities arise. Adaptive systems are not static regulatory systems and instead sense and respond in a timely manner. In doing so, they enable the company to maximize its operating performance.

Two kinds of new adaptive systems address this need: business process management (BPM) along with business intelligence (BI) and analytics. BPM systems enable operations staff to: 1) watch the internal performance of their business units; 2) performance of transactions between their company and their customers and suppliers; and 3) on an hourly and daily basis. BPM systems enable people to take corrective action in real time as needed to keep operations flowing smoothly. BI systems provide staff and management with relevant information to help in decision making and they provide analytics useful for spotting new trends. (These two kinds of systems and their potential are also discussed in Chapter 6.)

Specialization systems enable a company to understand what customers want and continuously evolve existing products to meet changing customer needs. These systems also support the design and roll out new products as opportunities arise and provide the operating support that drives a company's value creation activities. They enable the design and delivery of the products or services that its customers buy.

Examples of application systems in this category could be customer contact and relationship management systems, all manner of graphic design systems and music and video production systems, job scheduling and delivery management systems, and sales support and customer service systems.

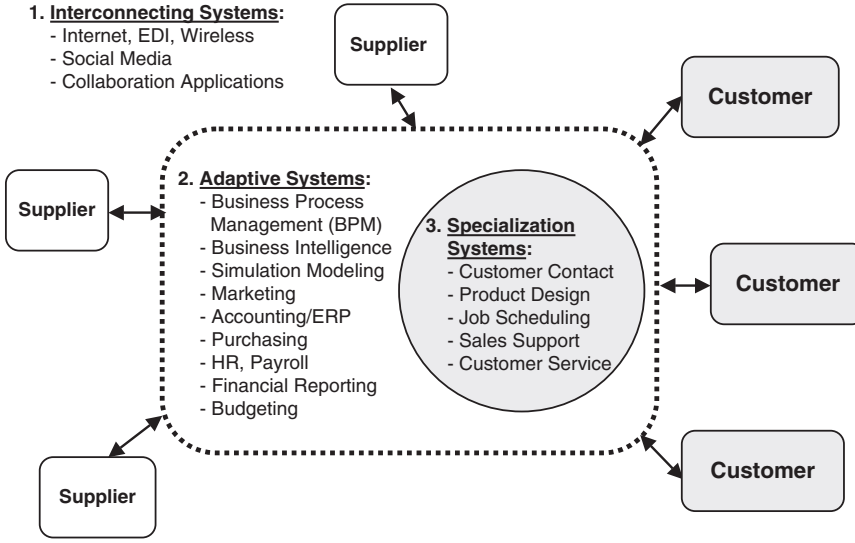

Figure 9.2 Three Categories of Business Systems

These three categories of business systems are illustrated in Figure 9.2.

Cloud-Based Systems for the Three Categories

A company needs an appropriate mix of capabilities and capacity in the three categories of systems shown in Figure 9.2. Depending on the size of a company and its existing installed base of legacy systems, it makes sense to use some mix of cloud-based and in-house systems, however, for start-up companies, it may be logical to use cloud-based systems for all of its needs. Then if the start-up reaches positive cash flow and starts to grow its revenue, it can consider when it might need to move from cloud systems to more traditional in-house or hosted systems.

Interconnecting systems are already delivered largely over the Internet, so cloud-based systems in this category make sense for companies of all sizes. Social media are already cloud-based along with collaboration applications like Google Docs, WebEx, or GoToMeeting, so companies are quickly figuring out how to use them to communicate and collaborate. Cloud options are also available for companies to acquire basic communications, computing infrastructure, data storage, and system management capabilities. These are referred to as infrastructure-as-a-service (IaaS) and platform-as-a-service (PaaS).

SaaS applications exist for most of the adaptive systems that companies need. The question about whether to use SaaS versions of these systems or traditional in-house systems depends on each company's installed base of legacy systems and the software user and support contracts related to these systems. As these contracts come up for renewal, companies should take the opportunity to evaluate the feasibility of switching to SaaS applications.

There are more and more SaaS applications now available that address a range of different business functions from ERP to human resources, from CRP to project management. These systems can be expanded upon and modified with additional features through service-oriented architecture (SOA) and mashups. (These technologies are explained in more detail in Chapter 3.) In this way companies can begin to gain experience in combining their legacy systems with new systems that are cloud and SaaS based.

Collaboration Is Now More Profitable than Control

Companies need to work more closely with networks of suppliers to achieve an effective variable cost business model (the outside-in organization structure described by Wladawsky-Berger). The simplistic but relentless pursuit of money alone can't produce the profits it once did since this money-only focus causes companies to optimize efficient production of existing products, but at the expense of the ability to change and create new products as markets evolve. As discussed in Chapter 1, companies optimized for efficiency are like cars optimized for speed. They go fast and work fine as long as the road is straight; but when the road twists and turns they can't handle the corners and they crash. Winding roads need cars that are highly responsive, not just fast.

There is an inescapable tension between efficiency and responsiveness. They're at opposite ends of a spectrum. Companies have to position themselves at a point on the continuum that best meets the company's present circumstances. As circumstances change, the company needs to keep repositioning itself. Failure to continuously reevaluate and reposition has been the downfall of many, once-reputable, Industrial Age companies in the last decade; they positioned themselves at the efficiency end of the continuum for too long while their markets evolved and customers found other companies to meet their needs.

This tendency to focus too much on efficiency is apparent when a company's senior management is quoted making statements such as, ''We'll eliminate cost and increase efficiency in our supply chain and our business operations.'' This is code-speak used when companies are attempting to implement systems that give them excessive control over their suppliers in the name of achieving greater efficiency.

These systems simply shift profits from smaller suppliers to the bigger, more powerful companies, and then the more powerful companies become complacent with their profits and suppliers lose motivation to do anything new because they aren't making money. Ultimately, when the market changes, everybody (the whole supply chain of companies and suppliers) flies off the road and crashes as demand for existing products suddenly drops and new products haven't been developed.

Wealth is created today by supply chains and other business networks that enable companies to better collaborate and coordinate their activities so they keep up with changing markets and deliver new products that customers want. (This is the connect-and-collaborate organization described by Fingar). When companies discover what customers really want, they naturally find that those same customers want a good price—but that doesn't mean it's got to be the lowest price. People want products that keep responding to their changing needs and circumstances and they are willing to pay a premium for them.

The iPhone or the iPad is a classic example of this type of organizing and operating. It's not made by one company. It is a rapidly changing mix of tangible and intangible values and features delivered via a mix of hardware and software that is responsive to evolving needs of its growing customer base. There are profits to be made by everybody in the iPhone supply chain because customers will pay more for the product—one that has adapted to changing customer needs. The iPhone is a like a symphony orchestra; Apple is the conductor of the orchestra, but it's just one party involved in the process creating its success. Companies in the iPhone orchestra pay attention to Apple and coordinate their actions with each other to keep up with the fast pace of change. They are motivated to play well in the orchestra because they are all making money, or at least believe that they soon will. Apple isn't trying to create all the innovation itself; everybody is innovating and coordinating with each other to keep the ball rolling

because iPhone is more than a mobile phone; it's a growing ecosystem of products and services that has now taken on a life of its own.

In stark contrast, single companies using their own factories once designed and made products of the industrial economy. In today's information economy, supply chains of interrelated companies work together to evolve products in constant response to market changes. As more and more products follow a trajectory like the mobile phone, a huge opportunity will unfold to provide collaboration platforms for businesses to create and deliver new, innovative products. Supply chains and other business operations that require cooperation between multiple companies will be reinvented, and traditional business practices will be enhanced by ones enabled by collaboration systems that are hosted on cloud platforms and delivered through SaaS.

Necessity Makes Radical the New Normal

It's 10:30 on a weekday morning. Do you know what people in the operating units of your company are up to? They've been pretty quiet lately, and not making much of a fuss over that backlog of computer system enhancements they used to bring up all the time. Maybe they've finally settled down and accepted that they need to make do with what they've got, especially those ERP and CRM systems your company spent so much time and money installing.

But the quiet might not mean they've simply accepted their situation and deferred their requests. Business situations keep changing, and people's needs are more pressing than ever. All that talk about why people ''have to make do with systems they already have'' and accept constraints imposed by data security issues and accounting regulations hasn't really changed anybody's mind. In many companies, businesspeople have simply moved on from the subject and are doing what they need to do whether or not they get official permission.

They are still keeping up appearances about using company ERP systems and dutifully run numbers and orders through them, but that's just back-office stuff. The new work, the cutting-edge stuff, is being handled by systems patched together with tools at hand that people can put together themselves: spreadsheets, email, texting, along with cloud computing, SaaS, and mashup applications that they rent on a month-to-month basis for small amounts of money they pay out of their expense accounts and operating budgets.

People are under pressure. They need to keep rolling out new products and services and enhancing old ones. They need to keep finding new ways to engage customers and prospects. People know that money talks, and that they need to keep bringing in new revenue or else their positions will be cut and they'll be let go. They're ignoring IT-business-as-usual excuses for why things can't be done. They aren't waiting for that great new system you say you're going to deliver sometime in the fourth quarter this year, or maybe next year . . . or the year after.

The pressure of economic necessity has brought about a changed mind-set and an approach that might have seemed radical not that many years ago, but nonetheless, that is what is happening. People are doing what they have to do to make progress. When the going gets tough, the tough get agile.

Three Laws of Business Agility

There seem to be three laws that govern the practice of business and IT agility. The first one defines why we need to be agile, the second identifies how to best achieve agility, and the third shows where agility can yield the greatest results.

To begin with, agility is no longer just a good idea. It's now backed by law, the law of probability. This law says if a company can't keep up with rapid rates of change in the world, then its probability of success will get smaller and smaller every day. And since companies need IT infrastructure and applications to operate just as our bodies need nervous systems and muscles to move, IT agility is required if a company is going to achieve business agility.

Effective support of business agility is rapidly becoming the primary reason a company has an internal IT group (versus outsourcing it all). Today, when companies want to seize opportunities or avoid problems, IT groups need to figure out how to quickly deliver the systems required to make that happen. If they can't do that—and if all they can do is explain why things can't be done or why things will take 18 months and cost a million dollars—then, as Nicholas Carr suggested, ''IT doesn't matter.''[7]

The second law states that the best way to be agile is to use simple solutions. Agility requires simplicity because, in order to do things quickly, you need to reduce the number of things that can go wrong. Otherwise, Murphy's Law soon bogs down your

best laid but complex plans. How many times have you watched or participated as complex projects struggled, no matter how hard people worked, to overcome one problem after another with no end in sight?

This means practitioners of agile IT learn to size up what, at first, seem to be complex situations. They become skilled at understanding what businesspeople need and they find simple ways to deliver the most important capabilities quickly, often in 30 days or less). Then they stay close to the business as situations unfold and they keep building on the systems they delivered to provide people with new capabilities in a timely manner. Leveraging cloud computing services and SaaS is a highly effective way to do this.

The third law of agility is the law of diminishing returns. It says that doing the same things everybody else is doing is going to yield less and less benefit as time goes on. This law greatly impacts where agility can best be applied. Doing the same old things in an agile way will not provide nearly as much value as applying agility to accomplish brand new things.

This law rewards businesspeople who see new opportunities, and it rewards IT people who find new—yet still simple—ways to deliver what the businesspeople need in order to exploit those opportunities. Where other companies and IT groups use complex and expensive technology, the practitioner of agile IT doesn't always follow the crowd and their ''best practices.'' Practitioners of agile IT aren't afraid to question conventional wisdom and try different approaches.

So, the next time people question whether your company really needs to be agile, ask them how they plan to respond to the law of probability. The next time people downplay your simple IT solutions and instead propose complex systems, ask them how they'll cope with Murphy's Law. And when experts tell you their best practices are the way you should be doing things, ask them how that will help you deal with the law of diminishing returns.

The Consumerization of IT and the Emergence of Cloud-Based, Consumer IT Services

In many companies, there is a standing joke that businesspeople never have to ask IT how long something will take and what it will cost because they already know the answers: It always takes a year and costs a million dollars, and that's just for the simple stuff.

But the days of IT taking forever and projects costing an arm and a leg are clearly coming to an end. The world moves too fast, loans to finance expensive technology projects are harder to get, and some companies are now realizing they have choices other than the traditional solutions of the past 20 years.

People have discovered that, for a growing number of applications, consumer IT is better than corporate IT. It has the features people want, it's more responsive to changing needs, and new features are being added all the time. Consumer IT is often easier to use, faster to install, and a whole lot cheaper to operate. We're talking about things like email and web hosting services from companies like Yahoo and Google, and low-cost or no-cost office productivity, workflow, and collaboration applications provided on a pay-as-you-go, software-as-a-service basis by companies like 37signals, Google, IBM, Twitter, and YouTube, among so many others.

What kinds of business application systems can be built by combining the capabilities of these systems? Companies continue to innovate and create systems that respond to new needs in marketing, sales, customer service, and operations. When speed and simplicity are needed, and there's a desire to explore a new opportunity without committing a lot of money to get started, it makes sense to create systems this way.

For instance, a system to design and launch a new product offering can be developed by combining the collaboration features of Google Apps with the videoconferencing of Skype, and the project management and customer contact management capabilities of 37signals, together with accounting and financials from Workday. This kind of system would be accessed through a web browser. It would have a single logon, and wouldn't require users to switch from one underlying system to another. It would have small chunks of custom code written to tie all these pieces together and move data between the different parts of the system. These systems are known as ''mashups.'' They're quick to build, inexpensive to operate, they can scale up if the business takes off, or they can easily be shut down with no further expense if they are no longer needed.

Using this approach, companies can altogether avoid large capital expenses and instead purchase larger and larger portions of their IT infrastructure as cloud-based services. The spread of high-speed broadband networks and wireless broadband is now making

it practical to locate systems infrastructure in the cloud while still delivering fast response times to users across vast geographies.

The Recovering Complexaholic

At times, managers of in-house IT groups or other operating units may object to using consumer IT applications to solve business problems. And sometimes there are legitimate reasons to avoid these products. But it's important to look at the cause of the objections. Some may say it's not scalable as demand grows or that performance is not reliable or data stored in these systems is not secure, yet these objections are often baseless.

Another unstated, perhaps subconscious objection is that this easy-to-use consumer technology doesn't feed our addiction to complexity and support our need to feel important by building complex systems. That said, people and companies indulging their addiction to complexity are doing so at increasing cost and risk to their ability to compete and succeed in our real time global economy.

Consider this scenario: You are the CIO at GlobalCorp, a rapidly growing company run by some street-smart people with a knack for deal making and spotting opportunities ahead of everyone else. Your company operates in North America, Asia, and Europe, and is expanding into Africa, Australia, and South America. You move into new markets and new countries by buying companies and growing them. You exit markets by selling off business units in those areas.

The chief operating officer and the chief financial officer ask you to prepare a presentation for the CEO and board of directors on how IT can help streamline financial reporting and increase the visibility of operations around the world. Some big deals are pending, and they think IT can make a difference. If you're still feeding an addiction to complexity, a little voice in your head says, ''Wow, this isn't a simple project; it'll take more than a year and $1 million. Maybe more like three years and $100 million.'' But if you're a recovering complexaholic, that little voice will say, ''These guys are moving fast; they aren't willing to wait three years. What can we do to meet their needs?''

If you're a complexity addict, you round up a group of the usual suspects and put them to work grinding out a long-range development plan. You set a go-live date that's three years off, and you

figure that, in the meantime, everything will just continue to operate as it always has and people in the operating units will just have to make do with what they already have.

If you're recovering from this addiction, you bring together a small team of business and IT people and tell them to cast off all preconceptions. You give them time frames to start delivering usable systems to businesspeople within 30 to 90 days. You tell them everything is on the table, including things that have more in common with consumer IT than corporate IT. Under your guidance, they develop a strategy that relies on a collection of readily available IT components like web portals, dashboards and alerts, instant messaging and email, data warehouses, spreadsheets, software-as-a-service offerings, and small programs that can be quickly coded, tested, and put into production.

Obviously, it's clear which kind of business and IT executives are going to thrive in a company like GlobalCorp, but think about this: in today's hypercompetitive business environment, isn't the agility that GlobalCorp displays becoming the norm? And is there any better way to support this agility than by skillful use of cloud computing and software-as-a-service technology to support new business operations?

Notes

1. A few of the companies (and their stock symbols) providing cloud and virtualization products and services are: Akamai (AKAM); Amazon.com (AMZN); Cisco Systems (CSCO); EMC (EMC); Google (GOOG); Hewlett-Packard (HPQ); IBM (IBM); Microsoft (MSFT); Rackspace (RAX); Salesforce.com (CRM); and Terremark (TMRK).
2. Irving Wladawsky-Berger, in person interview by the authors, IBM Software Group, Somers, New York, December 16, 2009.
3. Peter Fingar, *Dot.Cloud: The 21st Century Business Platform* (Tampa, FL: Meghan-Kiffer Press, 2008).
4. Peter Fingar, phone interview by authors, December 18, 2009.
5. Diamond Management & Technology Consultants, ''Don't Waste a Crisis: Emerge a Winner by Applying Lessons from the Last Recession'' (2008). www.diamondconsultants.com/PublicSite/ideas/perspectives/downloads/Diamond Recession Report - Dont Waste a Crisis.pdf.
6. In October 2008 *The Economist* magazine came out with a series of articles on cloud computing and its business implications. These articles are available for subscribers to *The Economist* or can also be purchased at: www.economist.com/surveys/displaystory.cfm?story_id=12411864.
7. Nicholas Carr, ''IT Doesn't Matter,'' *Harvard Business Review*, 81 (May 2003).