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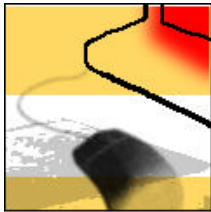
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The IT advantage thrown into question

By Nicholas Carr

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In 1996, at the start of the great internet gold rush, a pair of Massachusetts Institute of Technology researchers published a sobering analysis of the link between computers and competitive advantage. Erik Brynjolfsson and Lorin Hitt had earlier conducted a groundbreaking study of the effect of information technology investments on productivity, and they concluded that computer systems did, at least eventually, lead to gains in output. Now, they wanted to see what happened to those gains: were companies able to hold on to them in the form of higher profits, or were they competed away, ending up in the pockets of customers?

After sifting through data on IT spending and financial performance from 370 large US companies, they found that it was consumers who ended up with the lion's share of the economic benefits from improved productivity. They found indications, in fact, that IT investments actually tended to weaken corporate profitability, not strengthen it. Outside scholarly circles, the study went largely unnoticed. At the time, technology companies, management consultants and business reporters were happily pronouncing the death of the "old economy" and encouraging companies to pour cash into new IT systems. Today, however, the researchers' findings seem to have greater resonance than all the overheated rhetoric of the late 1990s. Although the study looked at average results rather than the experiences of individual businesses, it was among the first clear signs that companies have become unable to defend advantages gained through IT innovations.

Unless secured by a patent, any new technology that boosts productivity tends to spread throughout an industry. In time, the technology becomes a simple factor of production, a cost of doing business that all must pay but that provides distinction to none.

Information technology has been particularly susceptible to such diffusion. For one thing, IT provides much greater value when shared than when used in isolation. Like rail and telephone systems, computers need to be tied together into vast and largely seamless networks if they are to fulfil their economic potential.

This fact has led to the rapid homogenisation of hardware and software. As companies have moved from self-contained computers to broad, internet-based networks, they have abandoned custom technologies in favour of standardised ones. The costs of idiosyncrasy are simply too high.

At the same time, a vast infrastructure for sharing experiences, ideas and best practices has grown up around the IT business. Through innumerable articles, conferences, online forums, consulting projects and academic studies, IT knowledge is rapidly collected, codified and disseminated throughout the business community. The long existence of user groups and the more recent open-source software movement both testify to the willingness of computer professionals to freely share their expertise. Finally, the basic components of IT systems, such as chips, drives and operating and applications software, are subject to extraordinary economies of scale. That means that new technology quickly becomes affordable to all comers and it raises the incentives for suppliers to provide their goods to as many companies as possible in order to amortise the high up-front costs. IBM, Microsoft and Cisco are happy to sell their wares to all competitors; they want their products to become commodity inputs.

The great danger for managers is to continue to believe that IT is "strategic", that innovations in computer systems can provide meaningful competitive advantages. Such a view inevitably leads to overinvestment, the assumption of unnecessary risk and ultimately disappointment.

Years ago, IT pioneers such as American Airlines, with its Sabre reservation system, and Reuters, with its Monitor financial-news network, were able to defend their innovations for years. No more. Today, first movers will spend more, but they have little chance of maintaining their edge long enough to recoup the costs.

So what is a company to do? History shows that when a resource shifts from being a potential source of advantage to being a simple factor of production, cost control becomes more important than investment, and risk management trumps innovation.

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This is bad news if you are hoping to build a competitive strategy around IT, but there is a silver lining.

With IT hardware and software becoming commodity inputs, market power is shifting rapidly from suppliers to users. As businesses spend a trillion dollars a year on IT gear and services, this power shift can mean vast savings. But to reap them, companies will need to change the way they buy and manage IT. Here are four simple ways that astute managers can capitalise on commoditisation to get better, more reliable systems at much lower costs.

1. Shift from "cutting edge" to "good enough". Driven by Moore's Law and feverish competition among vendors, computer power and functionality are outstripping the needs of most companies. This has been true for some time with personal computers, which are mainly used for such rudimentary tasks as word processing, e-mail and web browsing, but is increasingly true for sophisticated storage and networking gear and even complex software applications like ERP systems.

Rushing to buy the latest products rarely makes sense any more. Businesses can save money and reduce risk by sticking with older, proven versions and resisting pressures to upgrade. Even technology leaders such as Google, Amazon.com and Sabre are now cobbling their systems together from cheap, generic components.

The rapid pace of computer advances is also giving buyers inexpensive new options. On the hardware side, low-cost producers such as Dell and Hitachi continue to introduce cheaper servers, switches and storage systems. In software, free open-source programs have grown steadily more sophisticated. Many companies have embraced the Linux operating system and a growing number are adopting open source databases such as MySQL and even applications such as Sun's StarOffice. Other companies are moving away from purchased software in favour of subscription services like the web-based customer relationship system offered by Salesforce.com.

2. Drive hard bargains. Even if you do not end up switching to bare-bones machines or programs, just considering them can bring concessions from vendors. Shaygan Kheradpir, CIO of the US telecommunications company Verizon, has been particularly adept at holding vendors' feet to the fire. He cajoled his big server suppliers into cutting their prices by 25 per cent simply by telling them that cost would be the sole factor in future buying decisions.

He also tracks bids for used storage products on eBay and uses the information to negotiate lower prices on new gear. Through such tough-mindedness, Mr Kheradpir cut Verizon's IT expenditure from an industry-average 6 per cent of sales to just over 4 per cent.

3. Don't be creative. We live in an age that venerates innovation, but sometimes a me-too approach is the wiser course. For most companies, the time when a customised IT system could provide an advantage is long past. Even if rolled out successfully, a proprietary system usually brings more headaches than benefits. It cuts companies off from the superior flexibility and interoperability of open systems and the superior economies of scale of vendors.

Buying standardised, off-the-shelf solutions may not be glamorous, but it does allow companies to lessen the cost and risk of system development while also reducing the chance of being saddled with an obsolete system. When it comes to commodity inputs, innovation rarely pays.

4. Challenge ROI numbers. Since the end of the dotcom boom, companies have instituted much tighter controls on IT spending - for example, subjecting proposals for new systems to rigid return-on-investment analyses. But there are reasons to believe that even seemingly rational ROI assessments exaggerate the benefits of new IT investments. Psychologists have shown that executives are over-optimistic in projecting the outcomes of large projects. They overlook many of the problems that can raise costs and delay progress - problems that are particularly prevalent in complex IT work.

More than that, financial assessments of IT projects rarely take competition into account. They assume that cost savings will fall to the bottom line and stay there. In reality, the rapid diffusion of IT systems means that profit gains tend to be evanescent.


Competition pushes the benefits of increased productivity out to customers in the form of lower prices. If your ROI numbers ignore this dynamic, you will probably end up spending more than you need to.

Business strategy is all about differences. If all companies produce the same goods in

the same ways, they can only distinguish themselves by cutting prices, which soon sucks the profits out of a market. It is only by being different in a way that means something to customers that a company can earn superior returns. There are many ways to achieve such strategic differentiation - well-designed products, attentive service, strong brands, finely tuned operations. But IT is no longer one.

Nicholas Carr is the author of 'Does IT Matter? Information Technology and the Corrosion of Competitive Advantage'

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