

# The corrosion of IT advantage: strategy makes a comeback

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When a valuable new technology emerges, it provides forward-looking companies with opportunities for gaining a strong and durable edge over the competition. Distinctive applications of the technology often take years for rivals to replicate. But as the technology matures, standardizes, and becomes part of the general business infrastructure, it loses its power to provide competitive advantage.

What it doesn't lose is its power to destroy advantage. The rail system, for example, neutralized many of the traditional locational advantages held by companies situated near ports, mine heads, and population centers. The telegraph reduced the value of long-cultivated international business relationships built on written correspondence and confidential couriers. The establishment of the electric grid rendered obsolete old ways of manufacturing and the advantages that went with them – having the best-designed shaft-and-pulley system for distributing steam power suddenly meant nothing. The rise of the machine-tool industry blurred distinctions between the skills of individual craftsmen, endowing all factory workers with similar capabilities.

Back in 1829, an anonymous English journalist grasped this phenomenon intuitively as he watched steam locomotives race along the newly built Liverpool and Manchester line. Writing in *Mechanics Weekly*, he foresaw that “peculiar local advantages will figure less than they have done in our manufacturing and commercial history, since whatever one place produces, can [be] as quickly and cheaply transported to another[1].” A century and a half later, strategy scholar Michael Porter acknowledged it as a general business truth, writing in his seminal 1985 book *Competitive Advantage*, that “technological change is . . . a great equalizer, eroding the competitive advantage of even well-entrenched firms and propelling others to the forefront[2].”

With information technology, this neutralizing effect promises to be particularly strong – and thus poses particularly difficult challenges for business executives. Because IT is so flexible in its application and so deeply entwined with business processes – especially the informational processes that have supplanted physical processes at the core of modern economies – it can corrode advantages not just in one or a few areas but across many aspects of a company's business. Any traditional advantage in prosecuting a given activity or process, from setting type to designing components to providing customer service, will tend to dissipate as that activity or process is automated. As businesses adopt similar systems, best practices turn into universal practices, performance converges, and traditional sources of advantage dry up.

## The corrosion of advantage

In the late 1990s, a doctoral student at the Harvard Business School, Mark Cotteleer, documented this phenomenon in microcosm in a study of a large manufacturer's adoption of

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an enterprise resource planning system[3]. The company deployed a single enterprise resource planning package throughout its worldwide operations, replacing a number of different systems that had been used by units in North America, Europe, and Asia. Cotteleer examined variations in the units’ performance on one crucial operating measure – the speed with which they fulfilled customer orders – both before and after the installation of the system. He analyzed more than 100,000 order records spanning a three-year period, from 12 months before the ERP came on-line to 24 months after.

Before the new system was installed, variations in order lead times among the three regions were pronounced, with Europe and Asia holding a large advantage over North America. Four months prior to the system’s rollout, for example, it typically took North America 51 days to fill an order, while Europe took just 35 days and Asia just 36. The installation of a common enterprise resource planning system immediately erased these differences, bringing the three regions into competitive parity. One month after the installation, the average lead times for North America, Europe, and Asia were, respectively, 29, 27, and 28 days. A year after the installation, the lead times were still tightly bunched, at 35, 33, and 37 days. Although variations in performance increased during the second year, as managerial and other local differences began to influence the units’ operations, the lead times remained more homogenized than they had been before the system was adopted. Most striking, however, was the fact that two years after the system went into effect, North America had become the lead-time leader. The advantage originally held by Europe and Asia had been obliterated, apparently forever.

It’s not hard to see how a similar convergence of performance and corrosion of advantage would take place among different companies that adopt the same or similar information systems, particularly systems aimed at automating transaction-intensive activities. Software that automates the customer service function, distributing inquiries and information to telephone representatives, will tend, for example, to erase differences in response times and other aspects of performance as it becomes broadly adopted throughout an industry. The homogenizing effect of the IT infrastructure will intensify as companies continue to look to outside contractors to operate key systems or even entire processes – for example, when competitors close down their own call centers and transfer the function to a handful of outsourcers in, say, India.

By providing companies with a shared communication and distribution platform, the Internet has greatly magnified the homogenizing effect of IT. Not only has the Internet undercut the advantages inherent in proprietary, closed networks, but it has shifted power away from companies and toward customers, further leveling the competitive playing field. In the 1996 edition of his book *The Road Ahead*, Bill Gates hailed the Internet as a foundation for “friction-free capitalism,” a new commercial infrastructure that would push markets ever closer to Adam Smith’s ideal of perfect competition. The Internet, he wrote, would become the “ultimate go-between, the universal middleman,” enabling customers to easily compare the prices, features, and quality of alternative products and thus spurring more intense competition among would-be suppliers. The result would be a consumer utopia: “All the goods in the world will be available for you to examine, compare, and often, customize. . . . It will be a shopper’s heaven[4].” What Gates failed to point out is that a shopper’s heaven is a business executive’s hell. When it comes to markets, friction is often just another word for profit.

Porter presented the dark side of friction-free capitalism in his controversial 2001 article “Strategy and the Internet.” Surveying the business changes wrought by the Internet and their

impact on competitive advantage and profitability, he concluded that “most of the trends are negative. . . . The great paradox of the Internet is that its very benefits – making information widely available; reducing the difficulty of purchasing, marketing, and distribution; allowing buyers and sellers to find and transact business with one another more easily – also make it more difficult for companies to capture those benefits as profits[5].”

By erasing many traditional operating advantages and making companies’ processes and prices more transparent to customers, IT threatens to become a kind of universal solvent of business strategy, speeding up the natural forces that over time push companies toward competitive parity. In assessing the implications of the new IT infrastructure, therefore, executives need to look well beyond the relatively narrow confines of IT management – to the very heart of how they think about business strategy.

### Strategy matters – more than ever

Some businesspeople, looking at the changeability of current business conditions and the speed of competitive replication, have jumped to the conclusion that the entire idea of strategy is becoming obsolete, that because long-term advantages are more difficult to achieve, companies shouldn’t bother pursuing them at all. As the CIO of a major UK financial institution recently, and amusingly, put it, “strategy is not a very strategic term right now[6].” Business success, in this view, hinges entirely on a company’s flexibility and agility – on its ability to outrun and outmaneuver competitors. Managers do not need to think ahead; they just need to act. But such a belief is self-fulfilling and, in the end, self-defeating. The fact that competitive advantage has become more difficult to sustain doesn’t make it less important; it makes it more important. As buyers become more powerful and business processes and systems more homogeneous, only the strategically astute companies will be able to rise above the competitive free-for-all.

The two current paragons of long-term business success – Dell and Wal-Mart – underscore the importance of intelligent strategy which leads to complex advantages that are hard to replicate. Both companies have been adept users of IT, and that has led some observers to conclude that technology is the source of their competitive advantage. But a closer look reveals that neither has built its advantage on technology itself. Instead, through extraordinarily disciplined approaches to business planning, each has carefully positioned itself to capture the lion’s share of the profits in its industry.

Wal-Mart’s strategic advantage dates from its founding in the early 1960s, when Sam Walton took a distinctive approach to both store location and merchandising. While other discount retailers were putting their stores in cities, Walton built his in rural areas. Because the locations he chose could not support more than one big store, he effectively locked out competitors, keeping the markets to himself. And instead of selling cheap nonbranded goods, like other discounters, he stocked his shelves with name-brand merchandise that he sold at cut-rate prices, a combination that drew shoppers away from traditional main street merchants and made trips to big-city department stores unnecessary.

To sustain its distinctive strategy, Wal-Mart has been relentless in pursuing efficiency everywhere in its operations. The company’s stinginess is legendary, as is its ruthlessness in bargaining with suppliers. But it has not been shy about spending money on information systems that support its low-price strategy. In the 1980s, when the IT build-out was still fairly early in its progress, Wal-Mart assembled logistics systems that allowed it to more efficiently restock store shelves and to radically reduce the inventory it had to hold. It was also a leader in creating electronic links with large suppliers, enabling its vendors to pack and ship deliveries for individual stores. Other retailers were often able to mimic Wal-Mart’s systems – the underlying technology, as MIT economist Robert Solow has pointed out, was “not especially at the technological frontiers[7]” – but because Wal-Mart’s advantage lay in a complex, tightly integrated, and difficult-to-copy combination of processes and activities, competitors’ IT investments went largely for naught. Wal-Mart continued to grow rapidly, to the point where its greatest edge has now become its superior scale – one of the most traditional and yet still most powerful of all competitive advantages.

Dell, too, established its strategy well before it built most of its much-praised IT systems. Its advantage lies in the distinctive direct-to-the-customer approach to selling computers it pioneered in the early 1980s. By cutting out the wholesalers and retailers that dominated computer sales at the time, Dell changed the economics of the industry. Instead of having to fill many distribution channels with expensive and rapidly depreciating finished goods, the company could wait to receive a buyer's order before actually assembling the desired computer. Because the build-to-order approach dramatically reduced the need for inventory and working capital, it was far more efficient than other makers' build-to-stock methods, allowing Dell to quickly become the low-cost provider, an enviable position in a rapidly commoditizing market. Dell's essential competitive advantage was already in place back when it was still taking customer orders over the telephone, long before it launched its now widely emulated Web store.

Much like Wal-Mart, Dell's distinctive strategy translated into rapid growth, providing the company with the scale economies necessary to maintain and strengthen its position as the low-cost producer. Dell's IT investments have actually been relatively conservative, and all have been aimed at reinforcing the efficiency of its operations, particularly its connections with suppliers and customers. It's true that IT has buttressed Dell's advantage, but it is by no means the source of that advantage. As Joan Magretta puts it in her book, *What Management Is*, "Michael Dell's really powerful insights haven't been technological ones. They've been business insights[8]." That's why other computer manufacturers have been able to match Dell's systems but not its results.

The enduring success of Wal-Mart and Dell gives the lie to the idea that strategy is dead or dying. Yes, these two companies are adept at execution and savvy at using IT, but their ability to consistently outpace competitors in growth and profitability can be traced to the stability of their strategies, not to their tactical agility. It is their single-mindedness in establishing and defending their privileged industry positions that sets them apart. Indeed, Dell's one major miscue was its brief attempt to sell its machines through retailers, a shift in strategy that backfired and was soon abandoned. Far from rushing willy-nilly from one business model to another, Wal-Mart and Dell display an old-fashioned strategic steadfastness, a determination to resist change for change's sake. They don't move slowly, but they do move deliberately.

#### Strategic stepping stones

These two companies are exemplars, but they're also exceptions. The simple fact is, not every company is going to have the opportunity to achieve a positioning as robust and defensible as theirs. And even those that do will still have to cope with the corrosive effects of the IT infrastructure and the ever increasing rapidity of process emulation and homogenization. Even if a sustainable competitive advantage remains the *sine qua non* of outstanding profitability, an ability to adapt and respond will be an increasingly important component of long-run success.

Strategy today therefore requires a broader and more nuanced definition of competitive advantage, one that encompasses traditional sustainable advantages but that also includes more transient leverageable advantages. A leverageable advantage can be defined as a privileged market position that, however fleeting, provides a stepping-stone to another privileged position. Unlike a sustainable advantage, a leverageable advantage is a way station, not a destination. But like a sustainable advantage, a leverageable advantage is a manifestation of deep and disciplined strategic thinking. It's more than just a reaction to current events; it's a deliberate move that builds on the past and prepares for the future.

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To see the power of leverageable advantage, consider the recent history of Apple Computers. Left for dead just a few years ago, Apple has survived as a profitable company in the cutthroat PC business by returning to its original sources of sustainable advantage: a flair for design, a tight integration between hardware and software, a strong and meaningful brand, and an exuberant dedication to product innovation. At the same time, however, Apple has also used these and other advantages as leverageable advantages. Its design skills, its adroitness at combining hardware and software, and its appeal to trendsetters provided the platform for a successful leap from PCs to music players.

Today, Apple's iPod holds the dominant share of the MP3 player market while also selling at a premium price – a desirable position for any product. But Apple didn't stop there. Its privileged position in the MP3 hardware market, together with its stylish image and design aptitude, provided the leverage for a move into music retailing through the 2003 launch of its on-line iTunes Music Store. Although the store doesn't make a large profit itself, it has provided a further boost to lucrative iPod sales and reinforced Apple's brand. Going from selling computers to selling songs seems on the face of it an unlikely strategic shift. But for Apple it made sense – it had the logic of leverageable advantage.

The shared IT infrastructure will continue to dissolve operating advantages, particularly those based on the superior execution of an isolated, transaction-intensive process or activity. But more complex positioning advantages – those derived from broad and tightly integrated combinations of processes, capabilities, and, yes, technologies – will continue to resist rapid emulation. Successful companies will therefore work to establish and protect distinctive strategic positions even as they use more temporary competitive advantages as stepping-stones to new advantages. They will be, so to speak, flexibly inflexible.

### The need for bifocal vision

The philosophers of business strategy have long been organized into two loose camps. There are the classicists who take an "industry-based view," believing that a successful strategy hinges on a clear understanding of an industry's economic and competitive structure. The challenge for a company's leaders is to position their firm in such a way that it is able to capture the largest possible share of industry profits. Strategy making, for the classicists, begins by looking outside. And then there are the scholars who take a "resource-based view" of strategy. To them, the essence of strategy lies not outside the firm but within it – in a company's distinctive resources or capabilities. The challenge for a company's executives is to figure out what the company does best and then turn that "core competency" into an advantage over the competition. Strategy making, in this view, begins by looking inside.

The most successful business executives ignore such academic distinctions. They realize, intuitively, that successful strategy is about both achieving a privileged industry position and exploiting unique internal capabilities. They know, in other words, that business success derives from a continuous and purposeful mediation between what lies inside and what lies outside. The maturation of the IT infrastructure, with its corrosive effects on competitive advantage, demands another such act of practical synthesis. It requires that managers see a competitive advantage as both a goal and a passageway, an end and a means. Agility must be balanced with stability. Those executives who are able to master such bifocal vision without losing their ability to take forceful action will be the ones that build the great and lasting companies of the 21st century.

### Notes

1. "Competition of locomotive carriages on the Liverpool and Manchester Railway", *Mechanics Magazine*, 17 October 1829.
2. Porter, M.E. (1985), *Competitive Advantage: Creating and Sustaining Superior Performance*, Free Press, New York, NY, p. 164.
3. Cotteleer, M. (2002), "An empirical study of operational performance convergence following enterprise IT implementation", working paper, Harvard Business School, October.
4. Gates, B. (1996), *The Road Ahead*, 2nd ed., Penguin, New York, NY, pp. 180-1.

5. Porter, M.E. (2001), "Strategy and the Internet", *Harvard Business Review*, March, p. 66.
6. Madan, R., Sørensen, C. and Scott, S.V. (2003), "'Strategy sort of died around April of last Year for a lot of us': CIO perceptions on ICT value and strategy in the UK financial sector", paper presented at the 11th European Conference on Information Systems, Naples, Italy, 19-21 June, p. 10.
7. Quoted in Schrage, M. (2002), "Wal-Mart trumps Moore's law", *Technology Review*, March, p. 21.
8. Joan Magretta, with Nan Stone, *What Management is: How it Works and Why it's Everyone's Business*, Free Press, New York, 2002), p. 62. Magretta's book provides an excellent overview of the development of both Dell's and Wal-Mart's strategies, which I have drawn on in my own discussion of these companies.