

Do You Really Need That Next Upgrade?

Nicholas G. Carr talks about capitalizing on the commoditization trend by spending less on technology but getting better, more reliable systems.

His suggestion that CEOs step away from the cutting edge has defenders and detractors in the IT community.

Nicholas G. Carr's new book, published by *Harvard Business School Press* and based on his earlier, much-discussed article in the *Harvard Business Review*, is "Does IT Matter? -- Information Technology and the Corrosion of Competitive Advantage." Carr, a well-known business thinker and author, says in his new book that information technology's strategic advantage has diminished steadily as its presence and power have grown.

UBIQUITY: Among the blurbs your publishers chose to promote your book, most are highly laudatory (such as one given by John Seely Brown who calls it "important, perhaps even seminal"), but some others are highly critical of the ideas in the book. For example, Microsoft's Steve Ballmer calls the book "hogwash" and HP's Carly Fiorina says it's "dead wrong." Why do you think the book elicited reactions like that?

CARR: Many of the most negative reactions came from the IT industry, and I think they can probably be traced to a combination of economic and ideological reasons. I'm urging companies to be more conservative buyers and users of information technology, and even counseling them to strive to spend less year-over-year. Obviously, that's not a message to warm the hearts of some in the IT business -- nor a message they'd be keen on having their customers embrace. On the ideological side, there seems to be a deep-seated feeling throughout much of the IT industry that their business is immune to the rules that apply to other industries -- that the IT industry won't mature the same way other manufacturing industries have matured over time. Basically, there's an animosity toward any suggestion that IT hardware and software are becoming more mundane and more routine in their business applications.

UBIQUITY: Were you at all surprised that your ideas were controversial?

CARR: I assumed they would rub some people the wrong way, but I certainly had no idea that the debate would rage on for more than a year. As it turned out, the comments and criticisms were quite useful in the course of writing my book. They helped me refine my argument and focus on points I needed to spend more time developing.

UBIQUITY: As you've talked to people about the book, have you figured out the author's equivalent of the entrepreneur's "elevator pitch" -- a one- or two-sentence description of the book's thesis?

CARR: Not really, but I can give it a shot: I think that one of the most crucial of all strategic questions any company needs to ask itself is, Which resources can provide us with a competitive advantage and which are simply commodity inputs that we need to buy but that aren't going to distinguish us in any lasting way? My argument in the book is that, over time, information technology has moved from the first category -- a resource that could provide a strong competitive advantage for innovative users -- into the latter category, a simple "cost of doing business."

UBIQUITY: What is your own definition of IT?

CARR: I'm talking about the computer hardware, software, and networks involved in storing, transporting, and processing data within companies.

UBIQUITY: But you're not necessarily including in your definition the people who manage the technology?

CARR: Correct.

UBIQUITY: You've no doubt read or are familiar with the Michael Lewis book "Moneyball," in which he attributes the success of a couple of baseball teams to their careful analysis of statistics that couldn't really be analyzed without computers. With that notion in mind, isn't it true that the most important component part of information technology is actually the people -- the analysts or managers?

CARR: I don't think people are a component of technology, but obviously the intelligence and insight of employees are crucially important to business success. Companies that are better at interpreting information have always had an advantage; that was true long before computers came along. But it's important not to confuse the resource with the skill of the user. If you had two bakers and you gave them each a ton of flour, one might be able to use that flour to make a much better loaf of bread than the other, but that doesn't mean that the flour itself is a strategic resource.

I think if you look over the recent history of how IT has been used in companies, you see a quite strong pattern of companies viewing the technology as a potential way to distinguish themselves from competitors to gain an edge. And you certainly see that kind of thinking in the marketing pitches of all the big IT companies, promoting IT as "the source of strategic competitive advantage in the digital age." And what that has led companies to do is to spend too much and too quickly on the technology -- only to find that IT really doesn't have the power to set them apart from competitors anymore, because any innovation can be replicated very quickly. So will talented managers still distinguish one company from another -- whether they're in marketing, or IT, or finance? Sure, but that doesn't tell you what your approach to buying and managing the technology should be. And that's the issue that interests me.

UBIQUITY: So if you could give marching orders to the new CEO of some big non-technology business, what would they be?

CARR: When you look back at other major business technologies, from rail transport to electricity, you see that when they switch from being potential sources of advantage to mere costs of doing business, the key for successful management shifts from aggressive innovation and investment to careful cost and risk management. And I think that's true with IT as well. Even if you can't gain an advantage from information technology, you can certainly put yourself at a disadvantage by spending too much on it or by otherwise mismanaging it.

The CEO, and the CIO as well, need to move toward a more skeptical, conservative posture, seeking to capitalize on the commoditization trend by spending less on IT

but getting better, more reliable systems. Move back from the cutting edge. Let competitors pay the higher prices, and take the higher risks, of being technology innovators. Then you can learn from their mistakes and their successes.

UBIQUITY: Don Tapscott is critical of your assertion that IT has become commoditized: he says that "in fact, nothing in the universe is diverse as a byte of data, which can carry information ranging from baby pictures to a digitally signed million dollar bank transfer." He accuses you of suggesting in effect that Shakespeare's works are a commodity because Shakespeare uses the alphabet just like everybody else. What's your reaction to that criticism?

CARR: Shakespeare didn't have to pay for the alphabet, and he didn't have to worry about competitors replicating his plays. It's a cute analogy, but it's naive.

UBIQUITY: He seems to be saying that you're excluding the concept of "information" from the term "information technology."

CARR: I do draw a distinction between technology and information, and I believe managers should as well. If you can't distinguish technology from information, how can you manage either of them well?

UBIQUITY: I think he's saying that information technology is more than boxes and wires and cables. It includes the artist, the Shakespeare, the designers, the managers.

CARR: Well, I guess I disagree with that. I wouldn't include "Shakespeare" in my definition of the word "alphabet." I wouldn't confuse the carpenter with the hammer. As I said, I think the essence of successful management is being able to draw distinctions, and if you can't distinguish technology from information from talent, then you've got a big managerial problem. You're probably going to spend a hell of a lot more on the technology than you need to.

Having said that, I think that even some of the business uses of technology are becoming, in effect, commoditized. With many enterprise applications, for example, the business processes become built into the software used to manage them. That's

something I write about fairly extensively in my book, and I think it's something companies have to think very carefully about.

Even more dramatically, we're increasingly seeing companies hiring outside suppliers to carry out transaction-intensive processes that are based on computerization. That's what's behind the rise of business process outsourcing. But when you give entire business processes away to vendors to perform, that almost by definition neutralizes the ability of those processes to set you apart from the pack. The nature of information technology means that when you commoditize the technology, in some (though not all) cases you're also commoditizing the business process that runs on it, and even the information that runs through it.

UBIQUITY: Let's turn to another critic, the economist Hal Varian, who's actually quite sympathetic to your book but who notes that, in the 19th century when standardized parts became widely available and purchasable off-the-shelf, there was an outpouring of invention. In other words, he suggests that commoditization was just the beginning, not the end; and he goes on to say: "Perhaps information technology is like those standardized parts. Desktop PCs, Web servers, databases and scripting languages have become components in larger, more complex systems. As these components have become more standardized, the opportunities to create innovations have multiplied." So Hal Varian seems to be including the artistry, if not the artist, in the definition of information technology. Does what he said make any sense to you?

CARR: Yes, although I actually think he's making a very clear distinction between the technology and what companies do with it. I see three ways to interpret his point. By talking about how you put components together, he's talking in one sense about the architecture a company uses, the IT architecture; at that level, I don't think I agree that we'll see more opportunities for competitive differentiation. I think all the trends in IT architecture over the years, from mainframe systems to client server systems to Internet systems, have led to more standardized, more homogenized architectures as companies have had to connect with ever-broader networks. We're seeing a commoditization of architectures in other words. Sun's Scott McNealy, though he hasn't been a fan of what I've said, nevertheless gave a very interesting speech arguing that we're moving from an era in which companies

had to build their own custom jalopies to one in which they basically go out and hail a taxi -- in other words go to a vendor to get a standardized architecture.

UBIQUITY: What are implications of that?

CARR: It's this: when you had to build a custom jalopy, it might have been difficult and expensive, but at least you could build a better one than your competitors'. But now any company is going to be able to go out and hail a cab (or acquire an architecture) just as well as any other company. So at the architectural level, I think we're seeing increasing commoditization and decreasing opportunity for advantage.

The second way to interpret Varian's comment is that companies historically have had a very complex, difficult-to-maintain set of systems that don't talk to each other and that are just a general pain in the neck to maintain. As we move toward more modular, easily connected components, companies will have opportunities to do much better. Which I interpret to mean that the more clearly companies understand that things are being commoditized and the more quickly they move to capitalize on that commoditization, the better off they'll be. I completely agree with that. Getting past the dream of creating distinctive, unique systems, and moving toward more commodity components, is exactly the right thing to do.

The third interpretation of what he's saying is that as companies themselves rely on more standardized IT, and as IT kind of disappears at the corporate level, it becomes a platform for all sorts of new consumer goods and services. I think that's true, and is consistent with earlier technological revolutions. It was only when the technologies became standardized, homogenized and more-or-less utilities for companies that they became the basis for all kinds of new consumer products and services.

UBIQUITY: The upshot?

CARR: I think we're going to see all sorts of IT innovation going on in consumer products and services. Within companies, though, the innovation that goes on will make the general infrastructure more efficient and reliable but it won't set one company apart from the pack.

UBIQUITY: Let's take a specific example; let's say a construction company. If you were the CEO of such a company, presumably you'd refuse to allow the drafting

department to get every gizmo they want -- but how would you begin thinking about the issues involved?

CARR: One thing companies haven't in general done very well is discriminate clearly between the IT needs of different employees, and that's led to a great deal of wasted investment. Companies have, for instance, enormous over-capacity in processing power at the PC level and at the server level, as well as huge over-capacity at the storage level. So it's probably a good thing to be much more ruthless in figuring out exactly the IT requirements that different sets of employees have, and then just giving them enough to do their job and not enough to increase maintenance costs and licensing fees and so on.

UBIQUITY: You wouldn't worry that some people would think you were narrowing jobs to the dumbest possible point?

CARR: How so?

UBIQUITY: Well, for example, by giving administrative assistants exactly what they need and no more.

CARR: I don't think having more computing resources than you need is going to make you any smarter. I describe in the book an interesting case of a hotel franchiser that employs a small army of reservation agents. Its IT director noticed that the agents' productivity was going down. When he looked into it more closely, he realized that they were spending lots of time on the Web going shopping, downloading songs, following the news -- doing all the things that people do on the Web while they're at work, and that don't have much to do with work. The IT director saw there was no reason for them even to have access to the Web, so he decided to get rid of their browsers. But he couldn't because Explorer has become so completely entwined with the Windows operating system. So he got rid of the entire Windows operating system, and gave them all Linux desktop machines without browsers. Their productivity went up, and his licensing costs went down.

Of course, not every company's going to want to rush out and do that, but I think it shows that companies that think very clearly about their requirements, and then get the stuff they specifically require to do the specific jobs, will be much more effective

users of information technology. That's true not only for PC software but also for sophisticated enterprise applications. Do you really need that next upgrade the vendor's going to try to sell you?

UBIQUITY: Doesn't what you're suggesting go against another major theme of management literature, which is that companies should expand jobs rather than narrow them, and should give people all the tools they need to expand their horizons and be creative and innovative?

CARR: I think that makes sense for certain people in certain jobs. I don't know if having unlimited computer power is necessarily the way you do that, and I don't know if you want to do that with all jobs. If somebody's job is to handle customer inquiries, do you want them editing video at the same time? I doubt it.

UBIQUITY: One of the hardest things about discussing these issues is that they tend to make sense only by getting down to very specific cases and deciding who exactly we are talking about. Then we could decide your question about the customer rep's creativity.

CARR: You could use "creativity" as a justification for anything: you could also say, "Well, let's not constrain people's budgets, just give them more money and they'll figure out great things to do with it." But no company's going to do that. Throwing resources at people and hoping they'll be creative and do wonderful things is a very bad management idea. The technology should fit the job requirements.

UBIQUITY: How do you suppose the CEO of a typical company will feel when you take his high-end PC out and give him a stripped down version?

CARR: He probably wouldn't notice, frankly. And if he did notice, then I wouldn't do it. I don't think the CEO's computer is a major issue for most companies.

UBIQUITY: You've been out talking about your book with various groups. What kinds of reactions have you been getting from people?

CARR: I've been mainly talking to corporate IT management types, CIOs and IT managers, and their responses basically fall into three categories. There's one group who thinks I'm completely wrong. They're often the ones who first saw my HBR article when the CEO tossed it on their desk. They just wish I'd go away.

Then there's another set that think that everything I say is pretty much on target, and in fact they've been managing IT in their business along the lines I suggest for some time -- and as a result have been doing quite well. These are often the CIOs who are brought in when there's a big IT mess in a company, and their job is to clean it up, and to spend less, and to treat IT as a tool rather than as something that's going to transform the business. And so they're completely in tune with my thinking.

And then probably the largest group consists of those in the middle who are interested in my ideas, who don't necessarily agree with all my conclusions or recommendations, but who have found them a useful basis for new conversations and new ideas.

I certainly don't think there's unanimity in the responses even at the corporate IT management level.

UBIQUITY: Have the doubters caused you yourself to doubt anything about what you've said?

CARR: Not anything fundamental. As I said earlier, it was useful for me to have all the doubts and the criticisms so I could identify areas I could look into more deeply when I was researching and writing my book. Of course, there was a bit of a fear that I'd find that I'd overstated the case or something. But the further I got into these questions, the more it seemed like my argument was accurate, and that we really have seen a steady erosion of IT's ability to provide competitive advantage as it's become cheaper, more standardized, more available, and more accessible. Vendors and competitors alike are quite good at quickly replicating best practices and valuable innovations.

UBIQUITY: Do you have any theory about why the technology culture has gotten in the mindset of sometimes perhaps valuing technology for its own sake?

CARR: I don't think it's unusual. Every big, new technological wave always creates outsized expectations, and obviously the people in IT companies and IT departments feel passionately about the technology, because that's their job. Passion is great if it's harnessed and appropriately focused. But the danger of feeling passionately about anything is that you start to see the world through the lens of that particular thing. When you combine that with people's general desire for renewal and transformation, you get a fairly powerful cocktail.

UBIQUITY: Have you had any fear that the arrival of commoditization might have been declared too soon? I mean there was a time when things like VisiCalc and WordStar seemed to have vanquished all competition, and held the field against all rivals, a time when it seemed certain that the IBM PC would be the undisputed brand of the future. Of course that's all ancient history now, but at the time it seemed plausible enough, or at least arguable. Do you worry that something is going to happen next Tuesday that's going to completely change everything, making commoditization seem to have been a figment of the imagination?

CARR: Commoditization is a progressive phenomenon; it's been going on for years, reaching ever more sophisticated levels of information technology. It's nothing new. As new activities and processes become automated, you rapidly hit the point of decreasing returns for new investments.

Will there be another great technological wave? I'm sure there will be. Do I know what it is? No, nor do I think anybody else does. If there is one, will it be about computers? I doubt it, though computers could be an element of it just as electricity has been an element of computers.

UBIQUITY: You could have written your book 15 years ago, 10 years ago anyway, and it would have made perfect sense. But then the Internet was a big surprise to everybody, the Web was a big surprise to everybody, those huge developments came out of the blue, didn't they? And so did things like Google; who expected Google? Ten years ago hardly anyone had any ideas at all about such things.

CARR: I agree that the Internet is a very big deal. And it was a surprise. But now it exists. In fact, the Internet has among many other things been one of the great

accelerators of commoditization. What the Internet did was suddenly require much more standardization of all sorts of hardware and software components. It provided the platform for communication that's allowed the open source movement to thrive and that's allowed technical jobs to move overseas to cheap labor countries. The Internet has been a force for the homogenization of corporate IT.

UBIQUITY: The question is will we be surprised again?

CARR: We will definitely be surprised again, though I doubt if it will be from information technology itself, from computers. But even given that, it raises the question of what that would mean to a company. By definition you can't manage surprises -- they're surprises.

UBIQUITY: Good point.

CARR: Should you keep your eyes open, and stay on top of technological developments that may influence your industry? Of course you should. Should you become complacent? Absolutely not. But a healthy skepticism is certainly in order. Companies spend a lot of money on IT today, and they have to approach it from a particular posture. The essence of what I'm saying is you're going to be better off by approaching information technology as a commodity input rather than as something special that you can use in a distinctive way to give you an advantage.

UBIQUITY: Just two final questions. One is: What is your guess of the percentage of excessive spending we are talking about, in an average company. Is your guess that we are talking about 20 percent too much money being thrown at technology? Or five percent? Or ...

CARR: It's a good question, and I'm wary of answering it because it's hard to measure and will vary a lot between companies. I think studies have shown that, for instance, over the last 5 or 10 years about 50 percent of corporate investments in IT have gone to waste -- just aren't being used. And about three-quarters of major IT projects have been unsuccessful. So a lot of money has gone down the drain.

UBIQUITY: Then the final question is: If you have companies X and Y, as they like to say it in the textbooks, would you worry that the one that was fairly liberal with technology, we'll make that Y, is more likely to be able to respond to those surprises of the future more quickly and more effectively than company X? Isn't it plausible that the company that tends to throw money at technology might be more likely to attract the best programmers, the best software designers, the best technical people in general? It would be a kind of Harvard phenomenon. Didn't you go to Harvard?

CARR: I went to graduate school there.

UBIQUITY: OK, well Harvard tends to be Harvard because it attracts people who go to Harvard. Don't you think? It attracts on average a better class of students. (Not that we're disparaging other great institution of higher learning, mind you.) And so wouldn't it be logical, or at least plausible, that a company that had the best computers, the newest computers, the newest everything, would attract the technological people, and wouldn't that position the company to respond more rapidly to technological imperatives of a changing business environment?

CARR: No, I don't think so at all. There's absolutely no correlation between IT spending and business success. We saw a lot of companies spend very lavishly on IT during the Internet boom. And a heck of a lot of them went bankrupt.

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