How to Really Benefit from Information Technology

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Information technology (IT) accounts for about half of all capital expenditure by the global business community. What about the return on this huge investment?

Business people are eager to know if their investments in information technology are paying off. Unfortunately, there is no reliable or even commonly accepted way to evaluate the processes or outcomes associated with IT applications.

It has been difficult to show that billions of dollars of IT applications are significantly improving business performance or that the thousands of hardware engineers or software programmers are contributing to the bottom line. Simply stated, business investments in IT remain largely an act of faith.

One of the most fundamental measures of business performance is productivity. We would certainly expect all the computers and telecommunications equipment to make workers more productive. Instead, is considerable evidence to suggest a "productivity paradox" with IT. Even as IT was being introduced into virtually every aspect of the business world, it has not shown up in productivity statistics. Simply stated, all the money invested in IT did not appear to produce economic value.

At least four different explanations have offered for this productivity paradox. The first is that IT has not increased the productivity of workers. Even if it enabled workers to do their existing work faster, the extra time is being used to send personal e-mails, play computer games or to do other things that have no direct economic value.

A second explanation is that IT investment will pay off eventually, but that it will take some time. The lag period could be as much as a few years. Before realizing significant gains in productivity, an organization can expect to experience transitional pains.

A third perspective is that traditional input-output accounting models only capture increases in efficiency - doing things right. In contrast, the gains from IT are mostly in terms of greater effectiveness - doing the right things, and innovation - doing new things.

A fourth explanation is that many organizations have achieved limited benefits because they had used IT to automate their existing ways of doing business. Fewer companies had redesigned their business processes to realize the full potential of modern IT. The growing popularity of this perspective led to the emergence of the business process re-engineering (BPR) phenomenon in the 1990s.

As much of the United States and many other developed economies enjoyed an unprecedented period of prosperity in the 1990s, the longstanding concern about

the lack of return on IT investment seemed to disappear. American business leaders and government policy makers, notably including Federal Reserve Chairman Alan Greenspan, agreed that the unparalleled use of information technology was contributing significantly to the rapid expansion of the economy. Various data from the late 1990s appeared to support this viewpoint.

However, with the U.S. and other developed economies experiencing little or no growth, the relationship between IT and productivity is being revisited. The euphoria about dot-com businesses and IT spending in general has been replaced by skepticism about the value of computers and telecommunications.

McKinsey & Company, the management consulting firm, has recently completed what it claims to be the most comprehensive study to date on the impact of IT. The McKinsey study report is likely to be widely read and cited. It will influence corporate policy guidance to IT staffs and shape IT budgets.

The report challenges the now widely accepted view that IT contributes significantly to productivity gains. Remarkably, the McKinsey report arrived at its conclusions by drawing on much of the same data that Alan Greenspan and other economists used to support their claims that IT was the engine for significant productivity gains.

The McKinsey report associates significant productivity gains with IT investments made in six economic sectors - retail, wholesale, securities, telecommunications, semiconductors, and computer manufacturing. It concludes that the introduction of computers and telecommunications has not helped to any significant degree in 53 other economic sectors.

The conclusions imply that whether or not your company uses IT productively depends primarily on your industry. The managers of companies outside of the lucky six industries can now explain why the millions they invested in IT amounted to almost nothing. As a result, many firms will slow down or even stop investing in IT. This will undoubtedly hurt the IT industry when it is already ailing.

However, I believe that the report sends an erroneous message to business decision makers. My experience, which includes consulting to and researching hundreds of organizations in different industries all over the world, does not support the McKinsey conclusions or justify the business behavior that that they are likely to spawn.

Why do I think that both the economists and the McKinsey report are unhelpful to business leaders trying to manage IT? The fundamental problem is the level of analysis employed by the study. Economists like to look at the big picture. This results in sector productivity statistics, such as those produced by the Bureaus of Labor Statistics and Economic Analysis in the United States. It seems that at least one large consulting firm has chosen to rely upon those same statistics to produce a report that is certain to influence many business decisions.

Unfortunately, this report is misleading. The impact of IT on productivity does not depend very much on the economy as whole. It also does not depend that much on what your business does. It depends much more on what you do with IT.

Management makes a huge difference when it comes information technology. Productivity gains (and other types of benefits) from IT are firm-level specific rather than being dependent on the economic sector.

It is easy to point out great successes and also total failures in the application of IT among within a specific industry. For example, Wal-Mart has revolutionized retailing by using computers to control its own inventory and to manage its supply chain. Other retailers have done little more than speeded up old-fashioned operational processes. Similarly, some universities have made great strides in using IT to create a much richer learning experience for their students. Others have merely used IT to entrench outmoded teaching practices.

In order to help ensure that your IT applications are paying off, it is useful to consider the following question: How do you compete for and retain your customers? More than two decades ago, Harvard Business School professor Michael Porter suggested that businesses need to choose among three different strategies: cost leadership, differentiation, and focus.

The managers of a firm with a cost leadership strategy should apply IT to improve operational efficiency. Significant cost reductions are often achieved by using IT to redesign or streamline basic business processes. Some firms have already integrated their value chain by having the sales, inventory and procurement departments share data on a real-time basis.

Even larger benefits may be achieved by looking upstream or downstream in your supply chain. For example, with Dell Computer's direct sales model, the disappearance of both distributors and retailers reduces costs. At the same time, end-users benefit by mixing and matching modular components to create their own customised PC.

A company with a differentiation strategy can use IT to enhance the image and visibility of its products. For example, the Internet provides an attractive alternative to traditional modes of geographic expansion. Creating an online sales capability is much less expensive that setting up a physical store. A well designed and appropriately promoted Web site can effectively reach many new customers. In addition, business intelligence systems can be created to monitor the activities of both existing rivals and emerging threats, so that the firm is not blind-sided by major changes in the marketplace.

A focus strategy that targets a narrow market niche relies on getting close to the customer. IT applications such as e-mail and teleconferencing can help a company to communicate with its target customers. Companies like Apple Computer and Amazon.com have even helped their customers to form an online community. Incentives can be used to encourage online feedback and

suggestions. Existing customers can be asked about their past experiences while potential buyers can try out virtual versions of your new products.

Porter's competitive forces model is also useful for considering the strategic benefits of IT. Although the opportunities will differ from industry to industry, managers can consider whether they can use IT to:
> - make it more attractive for existing customers or suppliers to keep doing business with you
> - make it less attractive for new companies to enter the industry
> - collaborate with traditional rivals

For example, the smaller banks in Hong Kong have enhanced their competitiveness against their larger and better-resourced counterparts by collaborating on the JETCO automatic teller machine network. Although the travel industry and a few manufacturing firms use similar types of shared IT infrastructures, they are notably absent in most local industries.

Almost every organisation can significantly improve its competitiveness by using IT. Buying some hardware and software may be necessary but it is certainly not sufficient. In order to capitalise on enormous potential of IT, managers must also ensure that their IT applications are aligned with their business strategy.

In addition, corporate-level financial reports or balanced scorecards at the strategic level of analysis can be helpful to judge the benefits of IT. Significantly, many of the most successful multinational companies, including General Electric and Intel, have developed balanced scorecards to help them manage IT. These scorecards encourage and monitor improvements in key aspects of IT performance. In these companies, IT has become more of a change agent than an efficiency agent. IT is used not only to improve existing business processes, but to change fundamentally how valuable products and services are provided to customers.

Simply put, the McKinsey report does not offer enough insights about patterns of success or failure to make it useful for business decision making. The analysis is deficient because it concentrates on a narrow and perhaps outdated view of IT benefits. Managers must consider not only how IT can improve business performance, but also how it can change fundamentally the way that work is done.