The Five (plus one) Questions a member of the Board should ask the Chief Executive about Information Technology (IT)

Recently, the Chief Executive of a major professional services firm posed the following challenge: "Bob, I sit on several boards of directors. I am often asked by my fellow directors: 'What should we be asking about this organization's use and management of technology?' My question to you is: 'What are the five questions we should be asking to get a good handle on how well we are doing with information technology?"

Let me introduce right here the current understanding of the definition of the term Information Technology. As Garry Marshall noted in his 1984 ***Beginner's Guide to Information Technology****, "it was coined to mark the convergence of two technologies that had traditionally been separate: computing and communications, ...made possible by microelectronics." It covers all the things we do with information, in any or all of its forms: data, text, voice and image. That means storage, processing, communications and retrieval. It incorporates not only the equipment and software required to do the job, but also the skills, knowledge and experience of the people making it all happen.*

After some asking and testing and soul-searching over the last several months, we have arrived at the five key questions ...and one more that often will be asked, especially in the private sector.

The Questions

1. STRATEGY	How is information technology helping us to achieve our business goals?
2. POSITIONING	How are we making sure that the use of technology in our organization stays in line with our overall goals and strategies?
3. LEADERSHIP	Who provides the visionary leadership for exploiting technology in our organization?
4. RISK	Where could our use and management of information technology create new problems, and how well would we cope with technological disruptions?
5. VALUE	How are we evaluating whether we are getting our money's worth from our investment in information technology?
...plus...	
6. COMPETITION	What are our competitors doing with information technology that we should know about?

These questions focus on the areas we believe have the greatest strategic significance to the organization. Addressing them enables organizations to confirm their direction and establish a framework for addressing all the other critical, urgent and visible issues regarding technology.

1 .

Strategy sets the stage

To see whether the IT strategy is properly lined up, test it against the basic driving force of the organization. Successful top management tends to focus its efforts on one of the following strategic areas:

- products offered
- market needs

marketplace

- technology
- production capability
- method of sale
- method of distribution
- natural resources

capabilities

- size/growth
- return/profit

results

Like the overall business strategy itself, IT is likely to touch on all nine areas, but the key question is how, and how well, information technology supports that primary driving force of the business.

None of the remaining five questions makes sense unless the organization has a strategy for handling information technology that is aligned with the overall plans and goals of the business.

The starting point, then, is corporate vision: a clear sense of why the corporation exists and what it is trying to do. From that must flow corporate strategy, detailed plans that lay out how the company intends to reach its goals.

Corporate strategy must consider all the resources that may be required. Technology is only one slice of the resource pie, and must take its place alongside other resources such as people, funds, facilities and materials. Each of these resources will have its part to play in the overall scheme, and the right mix is likely to be different for each company.

Within an organization's plans, information technology itself can be used in many ways. At one end of the spectrum, it could be the key to improving efficiency and containing costs. In effect, this approach uses technology to help the company do the same things better. At the other end of the spectrum lies the use of IT to expand the range or volume of corporate business. This approach might focus on enhancing customer service or product quality and differentiation. The right approach is the one that fits best with the business strategy.

An effective IT strategy will clearly set out how a company's technological moves will support its broad corporate direction and where IT decision-making will fit in the organizational structure. Like the overall strategy, IT planning must deal with immediate concerns, but also keep an eye on possibilities and options that lie 10 or 15 years down the road. It should also define the company's focus, whether it be simply maintaining and upgrading existing systems or pursuing competitive advantage through innovative moves. Finally, an effective IT strategy should identify what resources will be needed to achieve its goals, and pinpoint what is and is not possible with different levels of investment.

One of the ways to test the alignment of IT is to look at its support of the basic driving force of the organization. Nine strategic areas have been identified where executive management can place their focus (see inset).

2.

Technology on the business totem pole

The second question (POSITIONING) asks how the organization will keep its IT activities firmly in line with the organization's driving force (see inset).

Complaints about sluggish responses from Information Systems departments are common, especially when their help is needed to support new products the company wants to launch into the marketplace. Those urgent, market-driven demands reflect the fact that product life cycles have been cut dramatically in recent years. At the same time, the job of building systems to help deal with rapid changes in the market has become far more complex.

The IT department's job has not become impossible, but meeting the demand does mean using new approaches and techniques. That in turn requires a change in the management process, to ensure that systems managers are tied into the business as a whole and are prepared to respond quickly to changing corporate needs.

There are several useful indicators of how information technology is actually positioned in a company.

Organizational structure:	To what function and at what level does the manager responsible for IT report?
Distribution/dispersion:	How much control over IT activities is spread around the company rather than being centralized?
Infusion:	How fluent are line managers and professionals with computer technology?
Dependence:	To what extent do managers, professionals and administrative staff depend on technology to do their jobs?
Utility:	To what extent does IT help or hinder the organization's ability to introduce new products or services to customers, or implement improvements to internal operations?
Alignment:	How well is control over IT resources aligned with that of the business organization?

A steady stream of complaints about slow responses from IT departments likely reflects a gap between what the company wants to achieve through information technology and the importance that IT is actually given within the organization's structure. In some companies, technology is treated as a necessary evil, most often as an administrative support tool; in others, it becomes an integral part of the products, services and the business itself.

There are opportunities almost anywhere to exploit technology in the pursuit of business goals. The closer IT is to the heart of the business, the greater are both the opportunities for success and the risks of failure. That's why the clearest positioning indicator of all may be the CEO's own level of interest in technological strategies and activities. If the CEO is not treating IT as an integral partner in the business in this day and age, there should be a well-considered reason why.

3.

Who's in charge?

The third question is one of LEADERSHIP. Over the past 15 years, the leadership role has swung back and forth between corporate and divisional executives. Now that role seems to be splitting up, with different aspects of leadership settling at different points in the corporate structure.

Usually, responsibility for policies and overall strategy rests with the CEO. Specialized functions such as systems architectures, standards, guidelines and management of the corporate utility tend to stay in the IT department. But the focus for using technology in a business sense has shifted to line executives.

There is normally a lot of bleeding before the process of learning new roles is complete. People and organizations must both go through the painful learning curve from enthusiastic beginner through disillusioned learner and competent performer to committed leader.

Painful it may be, but in the organizations that are most successfully exploiting information technology, the line executives are leading the charge. They consider technology an essential resource to help them meet their business goals and objectives. They treat it not as an end in itself, but as one more resource like people, funds and facilities.

To exercise leadership, the executive must be aware both of the need to become a leader and of the opportunities for employing technology. He must then take action to turn some of those opportunities into realities.

To back up the efforts of line executives, the central IT function, whether it be a CIO with a half dozen staff or a 2,000-person IT organization, must exercise its leadership role by maintaining a stable but flexible support structure.

None of this can happen, however, without someone at the top pushing, pushing, pushing. The CEO's role is critical to underline the message that technology is important, but he too must never forget the need to keep technology aligned with the needs of his business. In the words of one executive: "Technology is critically important, ...but never lose sight of the customer."

4.

What happens if... ?

There is no such thing as a risk-free technological strategy. Diving into new technologies poses one set of RISKS, but so does the decision to ignore developments in the IT marketplace.

As companies become more aware of the risks associated with technology, we are seeing a shift in attitude. The "if it ain't broke, don't fix it" mentality is giving way to the crisis management culture of "if it's not broken yet, now's the time to inspect it and put in a prevention/recovery plan for when it does break."

Companies must consider five aspects of risk: capacity, capability, currency, protection, and recovery.

In the first case, capacity, we are worried about whether the company can handle increased demand. This could be a matter of

bigger business volumes, the need for more work stations or computer capacity or a requirement for more people with certain skills and experience.

There is an obvious cost to maintaining surplus capacity, one that is quite easy to calculate. In business terms, however, there is also a high long-term cost to "running out of gas," one that must be gauged in terms of lost business, of disgruntled customers who get fed up with the delays or errors caused by overloaded systems.

Similarly, one must consider the capability of the people involved in information technology to embark on new and complex development projects. A team entrenched in old methods and approaches poses serious risks. On the other hand, bringing in technical expertise from outside poses another kind of risk: a lack of knowledge of the organization and its goals and culture.

The question of currency deals with what a company's equipment can do. Is existing hardware and software being held together from day to day with baling wire and string? Can it be adapted to new products and services? Correcting problems in this area may involve expensive redevelopment of core applications. Risk management in this area can be a matter of allocating money and effort to "re-investment" to keep systems up to date.

Protection refers to the safeguards (or lack of them) that prevent fraud and wilful destruction as well as unintentional damage. The latter is the most common, but its financial impact is outweighed by fraud and wilful activity. An organization must remember to protect its data, applications and networks as well as the physical equipment and facilities themselves.

The fifth case, recovery, deals with the organization's ability to weather a breakdown of its computer network, whether brief or prolonged. A fire in an Illinois computer center put a particular group of travel agents out of commission for 24 hours. When they were back in operation the next day, they experienced a 90% drop in business from normal volumes!

An effective disaster recovery plan will demonstrate in business terms how the organization will survive a "big hit." Like a fire drill procedure, it will clearly outline escape routes and show how quickly the organization can set up shop somewhere else. It will cover protection, back-up and recovery of the organization's data, its transaction processing capability, and its communications network.

It is impossible to eliminate risk. The directors must decide how much risk is acceptable. That in turn will vary widely by the organization's industry, size, use of technology, and personality. An audit performed by an outside party could give management a better sense of the costs and benefits of possible measures to reduce risk.

While security is not the glamorous side of the business, it is sobering to remember that well over one half of private sector organizations that experience a disaster never recover. With the age of the computer virus upon us, we must take unusual precautions to ensure our survival.

The five dimensions of risk:

[1] ***capacity*** …of the systems, facilities, networks, …

[2] ***capability*** …of the people (technical and non-technical), equipment and systems, …

[3] ***currency*** …of the processing systems, technology in use, …

[4] ***protection*** …of the data, processing systems, equipment and facilities, …

[5] ***recovery*** …from wilful and accidental destruction or damage of equipment and facilities, loss of data, …

5.

Gauging the return on the IT investment

All decisions on setting aside resources for information technology lead to the fifth key question which addresses VALUE: How does the company decide whether it is getting its money's worth?

The benefits of IT investment can be difficult to measure when stacked up against the hard numbers of cost. But the phrases used to describe the impact of technology on the organization may be clues both to its value and to the importance of IT within the company.

Some responses – "Our customers are telling us that our on-site price quotation and order-booking system gives us an edge over the competition;" and "The product management system has increased our plant's effective capacity by 20%, and product returns from customer complaints has reduced 50%, indicating an improvement in our quality" – reflect a sense that information technology is an integral partner in the business. Phrases focussing on clerical cost savings and reduced staff tend to (but not always) put IT into the same category as an office desk: of some importance, but not critical.

One of the first requirements, then, is to define how to measure value. There are three broad categories for measuring the value of technology to an organization. In general, it may cut costs; improve product quality or service; or generate a sustainable competitive advantage.

Categories for measuring VALUE:

[1] the degree to which the IT initiative ***reduces the resources needed*** to produce the required business results

[2] the degree to which the IT initiative ***increases or enhances the products and services*** of the organization

[3] the degree to which the IT initiative ***generates a substantial and sustainable competitive advantage*** for the organization.

Cost cutting is a matter of using IT to produce the same business volume with fewer resources. This could mean cutting either the overall or per unit costs of people (clerical, professional or managerial); of office, production or service facilities; of product or support materials; or of money for either operating expenses or capital investment. Do not forget to include data as a material resource, and computing and communications equipment in the facilities category.

Reducing the resources required to produce a result often, but unfortunately not always, leads to improving performance as the organization peels away non-productive resources which otherwise get in the way of productive resources trying to do their jobs.

This leads to the second measure of value, the degree to which the IT initiative increases or enhances the products and services of the organization. This will tend to show up as extra revenue generated by:

- producing more of the same,
- increasing product quality,
- reducing delivery time, e.g., from order to receipt of goods,
- reducing reaction time, e.g., in response to rush or changed orders,
- developing offshoots or by-products,
- repackaging elements of existing products and services,
- producing new related products and services, or
- producing new *un*related products and services.

All of these, of course, may help an organization get a jump on, stay ahead of, or catch up with its competitors.

Competitive advantage is very difficult to measure, but includes the value attached to:

- locking in customers,
- locking competition out of a market,
- positioning for the future through acquisitions, future products, diversification, or divestitures,
- generating competitive intelligence,
- becoming a preferred supplier,
- controlling the channel of distribution, and
- staff loyalty, retention and motivation.

The board of directors should not make IT decisions without some idea of the impact they will have in all three of these areas. This will in turn make it easier to ensure that each initiative is consistent with the business strategy.

The board should also look at the corollary: what will happen in each of these areas if the organization does *not* proceed with the proposed IT investment, or decides to delay action for a year?

Finally, board members must consider how the company will determine whether the investment generates the expected value. To do that, it must ensure that a system or procedure exists to monitor results. This measurement system, naturally, must be set up at the outset, before the initiative is launched.

To measure the value of the existing investment in technology, we would suggest selecting the half dozen largest IT applications, which probably absorb 40%-60% of total IT spending. Then work out the net benefit to the organization in terms of the above parameters. What would be the impact if these applications did not exist?

6.

...and what about the other guys?

The value of investment in information technology is best determined by looking inwards and asking: How will this move help us?

Nonetheless, a single organization is rarely the fount of all wisdom, and it is always a good idea to keep an eye on "the COMPETITION." This is true even in the public sector, where departments and agencies may be jockeying for budgets and influence rather than for revenue and profits, but the concepts of value and comparative advantage remain important. Competitive intelligence provides a framework against which to measure various strategies, including our own.

Those who are able to leap into the lead with technology may be able to capture a market and lock others out. They may also blow a lot of money for little or no gain – a far more common result.

Once we know what others are doing, we should figure out what would happen to us if we followed suit. We should also consider the results of alternative strategies, either doing something differently or doing the same thing sooner or later than the competition. The purpose of looking at what others are doing should not be a matter of keeping up with the Joneses. Rather, it should help us return to the question of VALUE. A good IT investment will produce value. The

best IT investments we can make will produce the best possible value to our organization, and that should improve our own situation both in absolute terms and relative to the competition.

No Text Book Answers

There is no one right set of answers to these basic questions about IT strategy. The best answers, however, will be those expressed in plain, clear business language, appealing to common – or not-so-common – business sense. Good answers will reflect a sense of "can do" rather than "don't you realize how complex this is?" That sense will be supported by solid business practices that enable rather than stifle the "can do" mentality, from preparation of business cases, productive systems development methods and strong project management practices to quality assurance programs and management of the benefits.

When the questions are first asked, the responses will most likely reflect the focus of the respondents on the "urgent" rather than the "important" issues. With repetition, the respondents will raise their sights to those issues that are important to the Board: the long term health and success of the enterprise. Here's to health!