

Information Technology Adoption: Moving from a cost of doing business to strategic advantage

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Overview

Every organization utilizes Information Technology (IT) in some manner. Even the one-person operation that has no computer uses a notebook to manage their information. Information technology can provide a significant advantage in productivity and customer service to the organization that chooses to use it wisely. Information technology can also be a burden that adds cost when it is not implemented properly. Technology can be viewed by an organization as a necessary evil, a cost of doing business, something that provides some productivity increases, or as a strategic advantage. By determining where on the technology adoption curve an organization chooses to be and where it aspires to be, an organization can begin the process of developing a sound IT adoption plan. This whitepaper will describe the stages of the technology adoption curve and discuss why companies choose to be where they are in that curve. By viewing IT as a strategic advantage a company can improve their bottom line significantly.

IT Adoption in Business

Information technology is utilized in businesses via several paths. In small- and medium-sized enterprises (SME's) IT often follows a chaotic path. For example, one technically savvy individual in the business may bring in a new technology and attempt to project their paper processes onto the new technology. A great example of this is scanning of documents, where a single person brings an inexpensive scanner into the business, scans paper documents that are important to him, and saves them in a directory on his computer. This example shows many pitfalls:

- The data is not necessarily backed up. If the computer fails or the individual makes a simple mistake, the data could be lost forever.

- The scanned documents are not readily available. It may be difficult to find a specific document, since these scanned images are not indexed in a manner that allows useful searching.
- Many of the documents scanned could probably be captured in other ways. Perhaps they already exist as text documents and do not need to be scanned. Time is wasted scanning documents that exist in more useable formats.
- There is no thoughtful, coordinated effort that benefits the company, as opposed to the individual. Even if the process put in place benefits the individual, it is likely not setup in a manner that can be generalized to the entire organization. Moreover, if the individual leaves the organization it may be difficult to access the data.

This simple example shows how a reactive, individually-focused IT solution, though well intentioned, can expose the company to the risks of data loss, decreased productivity, wasted effort, and even exposure to a security breach, depending on the configuration. Clearly, well thought out application of information technology that considers the organization as a whole is preferred over individual initiatives.

Information Technology Adoption

From Rogers (2003) *Diffusion of Innovations*

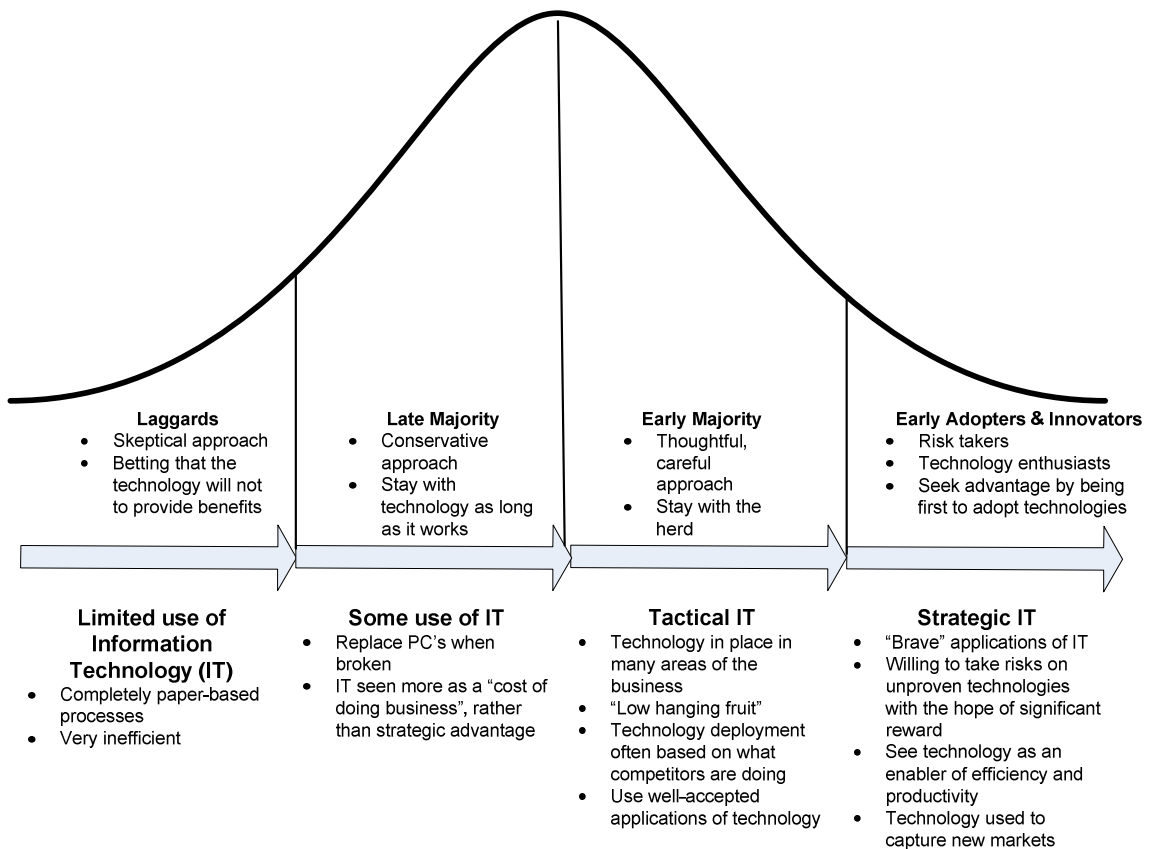


Figure 1: IT adoption model. The graph represents the number of organizations at each level of IT adoption.

The above graph represents the relative percentage adoption of each of the four (actually five) categories of IT adoption. Moving from left to right as information technology use increases the amount of expense, risk, and productivity change dramatically. The majority of businesses exist in the late majority and early majority categories, but this is not necessarily where everyone should strive to be. There are good reasons for businesses to exist in each category. The choice of IT strategy, whether it be laggard, innovator, or the others, depends on the strategy of the organization and the choices of the management team.

Laggards

Laggards are the last to adopt a particular innovation or technology. The laggards take a skeptical strategy that attempts to debunk the technology as failed, even when the technology is adopted by the majority. These consumers may be betting that the technology or innovation will fail to either gain market acceptance or will not provide the benefits that are expected. Laggards may have a winning strategy in markets where the technology is changing rapidly and is adopted quickly by most other companies. The Internet boom of the 1990's is one example where the laggard's strategy may have been effective. As many companies were developing their businesses around the Internet and not following wise business planning, others were taking a more cautious approach. The investment bankers that lost money on Internet startups in the 1990's that had no business plan learned a valuable lesson.

Late and Early Majorities

The early and late majority groups represented in Figure 1 represent 68% of technology users. These groups each have their own strategy. The early majority are the pragmatists who want to stay with the herd if others adopt the technology as well. The late majority take a conservative strategy which stays with the old technology as long as they can since it works, is familiar, and because it is paid for. These two groups make up the vast majority of the companies or customers that might adopt a particular innovation or technology. These are sectors of the market that are closely watching the evolution of the technology and choosing to adopt it once the product or innovation has gained a foothold. This approach is safer, but the payoffs from the technology may not be as significant as those realized by the early adopter.

Early Adopters and Innovators

The innovators and early adopters represent individuals and companies who are risk takers. These innovators represent the technology enthusiasts who will purchase new technologies not necessarily for their benefits but because of their interest in the new technology. The early adopters are the visionaries who want to seek an advantage by being the first to adopt the technology and becoming innovators in their industry. These two strategies represent 16% of technology users as shown in Figure 1 and their success with the technologies will have an impact on the other groups. If these two groups are successful with the technologies and they provide financial benefits, then the companies or individuals that lag behind these two groups will more readily adopt the technology. Early adopters pave the way for the early/late majority and the laggards, but they bear more risk and can experience greater rewards.

Moving Toward Strategic Use of IT

Organizations of all sizes can either use IT as a strategic advantage, a business necessity, or as a burden to their business. IT becomes a burden to the company when it works poorly, is difficult to support, or actually increases the manual labor necessary to do a job. Laggards typically experience these issues when their primary IT systems reach the life expectancy. The rest of their industry has moved on to new technology, and their customers and suppliers now find it difficult to work with the company. This state of affairs can be avoided by watching the technology trends in your industry and by observing what your competitors are doing. This will at least have the organization “keeping up with the Jones”.

Many organizations see IT as a business necessity, and nothing more. These companies have solutions for the accounting, billing, and other functions. They are keeping up with many of their competitors, at least from a technology point of view. When their customers point out that a competitor is using a technology, such as the Internet, to better serve them then they consider adopting it. This is a safe method of adoption, but it does not use IT as a strategic advantage. These are the followers of technology: The early majority and late majority. These organizations can improve by looking at what other industries, besides their own, are doing and seeking out technological advantage.

Organizations that use technology as a strategic advantage are always seeking ways to improve their productivity, customer service experience, and relationships with suppliers and other partners. They may experience some failures, but they accept that. They do not replicate paper processes on the computer; they redesign their processes for maximum productivity. These visionaries lead their industry and are the early adopters and innovators.

To effectively use IT as a strategic advantage requires some discipline to always be watching for opportunities to use technology. This includes observing what technologies competitors are using and what other industries are doing with technology. Early adopters of technology should be willing to make incremental changes and have the discipline to continue with more incremental changes. New

technology solutions do not always need to be deployed with a “big bang”: Sometimes an incremental approach can increase the chances for success and decrease the risks. The learning curve is less steep and the amount of organizational change is more gradual. Incremental changes can be done with pilot projects, proof of concept, or by implementing one module of the software at a time.

Expertise from outside the organization can be an enormous benefit. Consultants often have experience with many industries and can provide valuable insight into what benefits other companies realize and what might be useful for a particular company. IT consultants need to keep up with technology and are typically early adopters in their work and personal lives. They are the first ones to use new cellular phones, new computer hardware, and new web technology, for example. Their experiences and general mind-set can offer advantages to organizations seeking to use information technology to their advantage.

Conclusion

Many companies seek IT as either a burden to their business or as a necessary “cost of doing business”. These organizations are not gaining realizing any strategic advantage from IT. Companies that see IT as a strategic advantage are able to provide more ways to better serve their customers and get better service from their suppliers. IT consultants can provide a cost-effective method for acquiring IT expertise and they typically have a broad view of IT use in multiple industries. IT can mean the difference between the survival of a company or the leader in its market.