What Is Digital Intelligence?

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Digital intelligence—the ability to understand and utilize the power of IT to our advantage, is becoming a critical skill for all managers in today's economy,[1] partly because of significant changes in the business environment in the last 50 years. The IT world has changed remarkably since the 1960s, when IT was largely a back-office function focused on automation and reducing costs, was not well integrated with business functions, and did not matter as much strategically.[2] Much IT work was done in-house at that time by IT departments, and there were few external service providers.

IT Evolution and Digital Intelligence

A lot has changed since then. Around 2010, upward of 50 percent of firms' capital spending was going to IT, compared to less than 10–15 percent back in the 1960s. IT matters a lot today because of its revenue role and strategic potential; it is much more integrated with business functions, with many more options for business and functional units to configure IT themselves rather than rely on an internal IT department. The Strategic Impact Grid, introduced by F. Warren McFarlan in 1983, has been a useful tool in assessing IT changes over time and preparing a firm to respond to them (see the "About the Strategic Impact Grid" sidebar).

Despite significant progress on the technology front since then and a manifold rise in the digitization of business operations, products, and services, many organizations fail to synchronize their IT and business strategies.[3] The tension between the standards and controls that IT departments champion and the fast responses that businesses need still remains. McFarlan's examples of companies such as William Carter, Li & Fung, Otis, Kodak, and Uber explain why digital intelligence should be a part of boardroom discussions in today's information economy.[4]

Digital intelligence is more than being able to work with computers or IT; it involves an understanding of how to synchronize business and IT strategies, govern IT, and execute IT projects and enterprise systems. We next discuss some key elements of digital intelligence to gain competitive advantage and sustain it in the rapidly changing digital age.

Synchronize Business and IT Strategies

Synchronizing business and IT strategies requires that managers envision IT, integrate IT with strategy, and explore new IT on a continuous basis. We prefer the word "synchronization" to "alignment" because alignment implies that either IT or strategy is preordained, whereas synchronization implies a continuous, two-way interaction between IT and strategy. In other words, synchronization better captures a mindset that is open to new possibilities enabled by technology and at the same time ensures that the use of IT is consistent with strategic needs.

About the Strategic Impact Grid

The Strategic Impact Grid highlights the impact of IT on a firm's competitiveness.[1,2] The vertical dimension represents the firm's exposure to real losses as a result of IT vulnerabilities or security breaches. The horizontal dimension represents the overall impact of the firm's application development portfolio on its competitiveness (see Figure A). The grid can be used to illustrate how different firms, or parts of firms, are affected in different ways by IT. It can also facilitate a dialog among business and IT professionals regarding the position of the company as a whole or that of a firm's business units or IT applications. The grid was originally used to assist with IT planning efforts, and more recently its use was extended to shape IT governance and spending decisions at the board level.
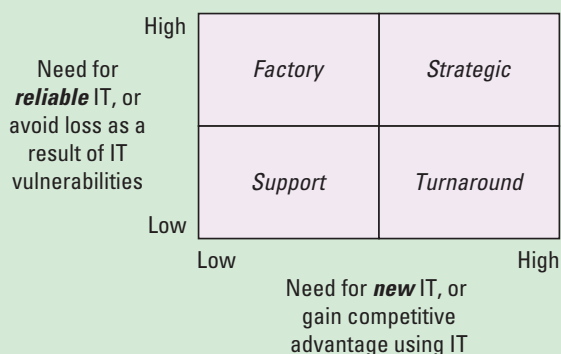
	Low	High
High — Need for *reliable* IT, or avoid loss as a result of IT vulnerabilities	*Factory*	*Strategic*
Low	*Support*	*Turnaround*

Need for **new** IT, or gain competitive advantage using IT

Figure A. McFarlan's Strategic Impact Grid.

References

1. F.W. McFarlan, J.L. McKenney, and P. Pyburn, "The Information Archipelago—Plotting a Course," *Harvard Business Rev.*, Jan./Feb. 1983, pp. 145–156.

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Envision IT

First, all managers need to have a vision for embracing IT's potential and realize that IT can have a significant—even make-or-break—impact on an organization. When we say "all managers," we refer to both business and IT managers. CEMEX, Zara, Capital One, and Amazon all demonstrate how IT and information-based capabilities helped firms create sustainable value in widely differing industries and ways. Conversely, companies such as FoxMeyer Drug, Blockbuster, and Borders had significant difficulties managing IT and dealing with IT-enabled transformations. Xerox's failure to capitalize on the innovations of its PARC lab demonstrates the importance of this point.

Integrate IT

Second, IT should be an integral part of any strategy discussion. It is the responsibility of senior leaders to develop inclusive but robust strategy development processes that are informed by the capabilities of IT but also stretch these capabilities for long-term organizational sustainability. Senior leaders must understand the duality inherent in IT before they can choose an appropriate digital business strategy and an offensive or defensive posture. The dualities of IT refers to the idea that technology can be both sustaining and disruptive; enable adaptation to and shape competition; provide new competitive advantages, even if such advantages are highly visible and replicable; enable aggregation (horizontally) and disaggregation (vertically); and create tremendous digital uncertainties even while providing tools to manage them. Leaders need to question their conventional strategy concepts, which focus on tradeoffs, because IT can, at times, help overcome these tradeoffs altogether. For example, IT can help firms pursue both revenue growth and cost reduction, or higher quality and lower costs—combinations that might not initially be visualized.

An easy way to understand IT's role in creating competitive advantage is to remember the acronym ADROIT. This acronym parses the value created by IT into six components:

- *Add revenues*. IT can help to add revenues through inorganic or organic means that might involve increasing sales to existing or new customers through existing or new channels by selling existing or new products.
- *Differentiate*. IT can help to differentiate or enhance non-price attributes such as perceived quality or convenience that often increase customer satisfaction.
- *Reduce costs*. IT can help a company reduce its overall costs through selective outsourcing while also investing in internal capabilities. Benchmarking on IT costs alone can be

counterproductive if IT investments can help to reduce non-IT costs substantially.

- *Optimize risks*. IT can help to optimize risks (not necessarily reduce them). Managers must try to reduce downside risks from not investing in IT by engaging in counterfactual reasoning. One way to reduce downside risk is to split IT projects into must-do and may-do components and manage IT projects as having real options to resolve technical or market uncertainties. Managers should consider the effect of IT investments on intangibles such as customer satisfaction that can reduce downside or idiosyncratic risk.

- *Innovate*. IT can help firms pursue IT-embodied or IT-enabled innovations by making R&D more effective and scalable, and by using innovation from outside the firm, as Lego, P&G (through Connect + Develop), and SAP have tried to do.

- *Transform business models and processes*. IT can help transform business models and processes by replacing or complementing atoms with bits. Dealing with transformations requires that managers calibrate their response to the triggers that are causing transformation; protect their current revenue streams to the extent possible while finding ways to develop or grow new ones; and develop capabilities for dealing with change and transformation without being blinded by the rush to outsource key capabilities that might be necessary for future competitive advantage.

This acronym can help managers think about IT's role in a comprehensive manner to synchronize IT and strategy.

Explore New IT

Third, managers and entrepreneurs need to repeatedly scan new technologies to assess their significance and use them to stay relevant and transform their organizations. This should not be a one-time exercise; these actions should become part of a manager's routine because exploration of newer technologies can often facilitate new and more effective ways of doing business. Experimentation to gain insight into applications, technology, and change is key. To avoid making sense of newer technologies on an ongoing basis is to avoid change; this rarely pays off, as the failures of Kodak and Borders demonstrate.

Just scanning new technologies and recognizing their significance is not enough. Leadership matters when it comes to transforming organizations. Although frameworks or methodologies such as Baldrige Criteria, Design Thinking, or Agile can act as triggers, unless leaders empower organizations and monitor the progress made on these opportunities for improvement, they are unlikely to achieve success.

Transformations, whether technology-enabled or otherwise, need leadership, management continuity, rigor, discipline, and eschewing of the pursuit of management fads. Sustained performance requires persistence, the refining of technologies, and their integration with incentive systems and business processes to yield desired outcomes. More than relying on the charisma of leaders, organizations must focus on creating processes that focus on long-term

thinking, where continuous improvement, scanning of newer technologies, and agile transformations to stay relevant become routine.

Govern IT

Fourth, formulating strategy is rarely enough; deployment is equally important. Successful deployment needs attention to the governance of IT decisions, departments, dollars, and delivery in a way that is synchronized with the company's strategy to avoid the "two-culture problem" that business and IT often struggle with. There are no simple solutions, and because of their structures, staff capabilities, and so on, different organizations will come to different answers regarding governance configuration. Not tackling governance issues in a systematic way or following through on them is an abdication of managerial responsibility because solid governance provides a platform for integrating various initiatives, just as an operating system allows a variety of applications to be built by leveraging a common platform. The governance failures at firms such as Blockbuster show that there's significant room for improvement in governance.

Execute IT

Fifth, IT projects need to be managed carefully, with attention to technology evolution, firm strategy, business processes, business value, and bottom-line benefit, while ensuring buy-in and business sponsorship whenever possible. It is the responsibility of business and IT managers to be aware of technology evolution, make informed decisions regarding technology upgrades, and understand how they should help to adopt, diffuse, and exploit IT

systems. Managers must also understand what risk-management strategies they should adopt when it comes to implementing various enterprise projects consistent with their broader strategy.

Finally, it is not just IT systems, artificial intelligence, or big data that on their own can provide desirable business outcomes. Analytics and metrics matter; organizations suffer if they do not have metrics, but they also suffer if they focus on the wrong or narrow metrics to measure success. It is the job of managers to ask critical questions related to data definitions, do some upfront thinking about how the data will be analyzed and used to inform business decisions, and then ensure that, over time, such data-driven decision making becomes the norm.

In summary, managers need to care about IT because IT-induced technological advances affect most industries and functional areas. Smart managers can use IT as a lever to enhance their personal and professional competitive advantage. Because IT is so embedded with business processes and new initiatives, sooner or later, most managers will be involved in an IT project. Given how risky and important these projects are, we must invest the necessary effort to understand how to manage them to ensure success. Together, these are good reasons for managers to invest in their own digital intelligence and that of the people or organizations they supervise. **IT**

Acknowledgments

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