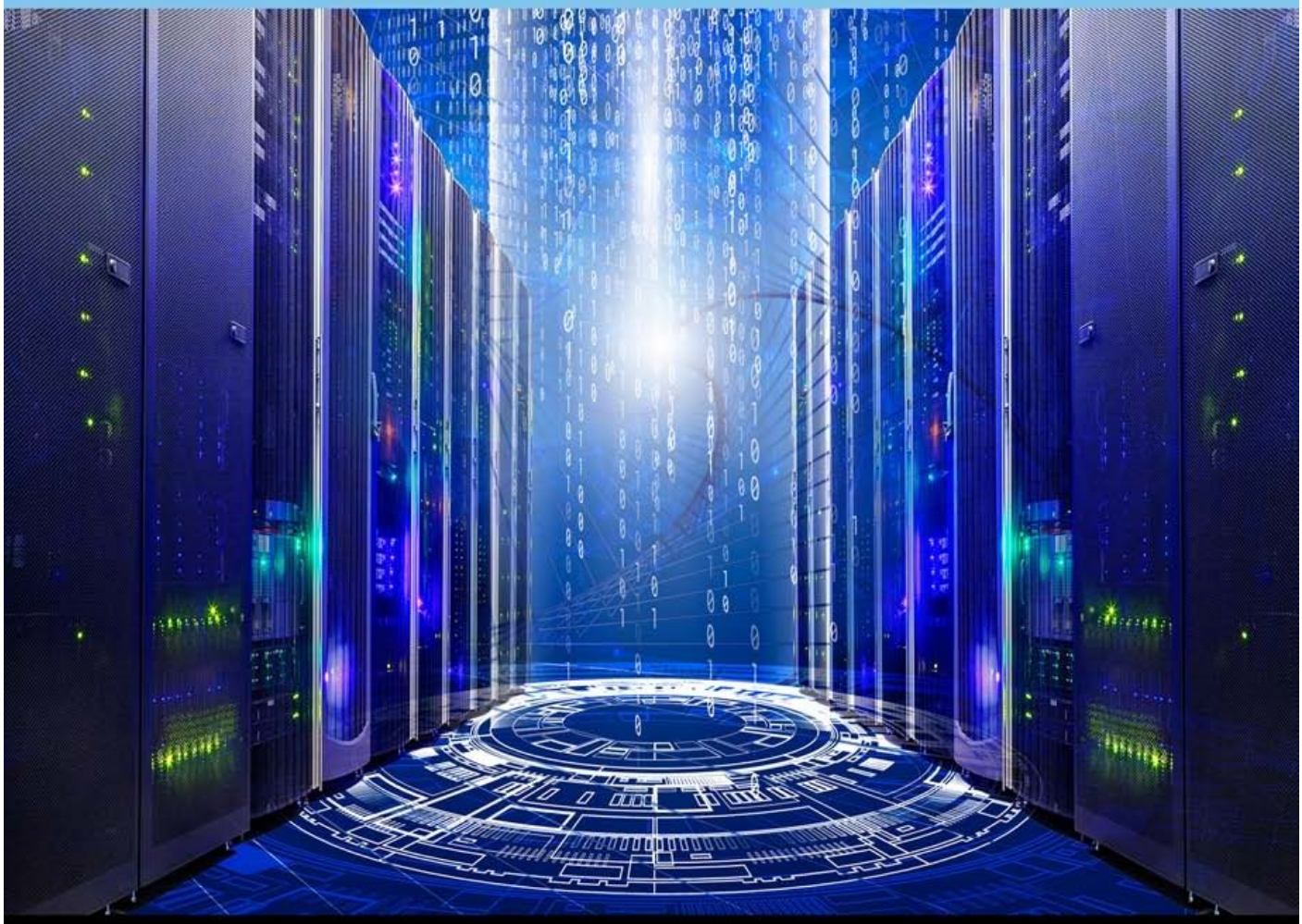
# Information Technology and Organizational Learning

## Managing Behavioral Change in the Digital Age

## Third Edition



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is what I am calling *responsive organizational dynamism,* which will also receive further explication in the next few chapters. For now, we need to elaborate the two distinct categories that present themselves in response to technological dynamism: strategic integration and cultural assimilation. Figure 3.1 diagrams the relationships.

### *Strategic Integration*

Strategic integration is a process that addresses the business-strategic impact of technology on organizational processes. That is, the business-strategic impact of technology requires immediate organizational responses and in some instances zero latency. Strategic integration recognizes the need to scale resources across traditional business–geographic boundaries, to redefine the value chain in the life cycle of a product or service line, and generally to foster more agile business processes (Murphy, 2002). Strategic integration, then,

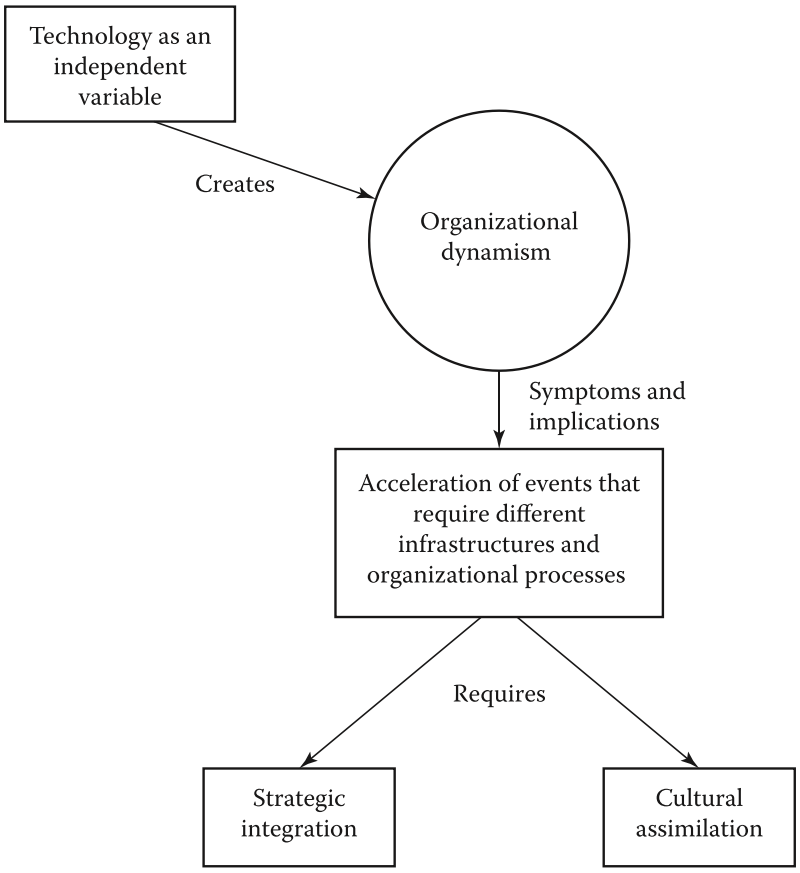


**Figure 3.1** Responsive organizational dynamism.

is a way to address the changing requirements of business processes caused by the sharp increases in uses of technology. Evolving technologies have become catalysts for competitive initiatives that create new and different ways to determine successful business investment. Thus, there is a dynamic business variable that drives the need for technology infrastructures capable of greater flexibility and of exhibiting greater integration with all business operations.

Historically, organizational experiences with IT investment have resulted in two phases of measured returns. The first phase often shows negative or declining productivity as a result of the investment; in the second phase, we often see a lagging of, although eventual return to, productivity. The lack of returns in the first phase has been attributed to the nature of the early stages of technology exploration and experimentation, which tend to slow the process of organizational adaptation to technology. The production phase then lags behind the ability of the organization to integrate new technologies with its existing processes. Another complication posed by technological dynamism via the process of strategic integration is a phenomenon we can call *factors of multiplicity*—essentially, what happens when several new technology opportunities overlap and create myriad projects that are in various phases of their developmental life cycle. Furthermore, the problem is compounded by lagging returns in productivity, which are complicated to track and to represent to management. Thus, it is important that organizations find ways to shorten the period between investment and technology's effective deployment. Murphy (2002) identifies several factors that are critical to bridging this delta:

1. Identifying the processes that can provide acceptable business returns from new technological investments
2. Establishing methodologies that can determine these processes
3. Finding ways to actually perform and realize expected benefits
4. Integrating IT projects with other projects
5. Adjusting project objectives when changes in the business require them

Technology complicates these actions, making them more difficult to resolve; hence the need to manage the complications. To tackle these compounded concerns, strategic integration can shorten life cycle maturation by focusing on the following integrating factors:

- Addressing the weaknesses in management organizations in terms of how to deal with new technologies, and how to better realize business benefits
- Providing a mechanism that both enables organizations to deal with accelerated change caused by technological innovations and integrates them into a new cycle of processing and handling change
- Providing a strategic learning framework by which every new technology variable adds to organizational knowledge, particularly using reflective practices (see Chapter 4)
- Establishing an integrated approach that ties technology accountability to other measurable outcomes using organizational learning techniques and theories

To realize these objectives, organizations must be able to

- Create dynamic internal processes that can function on a daily basis to deal with understanding the potential fit of new technologies and their overall value to the business
- Provide the discourse to bridge the gaps between IT- and non-IT-related investments and uses into an integrated system
- Monitor investments and determine modifications to the life cycle
- Implement various organizational learning practices, including learning organization, knowledge management, change management, and communities of practice, all of which help foster strategic thinking and learning that can be linked to performance (Gephardt & Marsick, 2003)

Another important aspect of strategic integration is what Murphy (2002) calls "consequential interoperability," in which "the consequences of a business process" are understood to "dynamically trigger integration" (p. 31). This integration occurs in what he calls the five pillars of benefits realization:

1. *Strategic alignment*: The alignment of IT strategically with business goals and objectives.
2. *Business process impact*: The impact on the need for the organization to redesign business processes and integrate them with new technologies.

3. *Architecture*: The actual technological integration of applications, databases, and networks to facilitate and support implementation.
4. *Payback*: The basis for computing return on investment (ROI) from both direct and indirect perspectives.
5. *Risk*: Identifying the exposure for underachievement or failure in the technology investment.

Murphy's (2002) pillars are useful in helping us understand how technology can engender the need for responsive organizational dynamism (ROD), especially as it bears on issues of strategic integration. They also help us understand what becomes the strategic integration component of ROD. His theory on strategic alignment and business process impact supports the notion that IT will increasingly serve as an undergirding force, one that will drive enterprise growth by identifying the initiators (such as e-business on the Internet) that best fit business goals. Many of these initiators will be accelerated by the growing use of e-business, which becomes the very driver of many new market realignments. This e-business realignment will require the ongoing involvement of executives, business managers, and IT managers. In fact, the Gartner Group forecasted that 70% of new software application investments and 5% of new infrastructure expenditures by 2005 would be driven by e-business. Indeed, this has occurred and continues to expand.

The combination of evolving business drivers with accelerated and changing customer demands has created a business revolution that best defines the imperative of the strategic integration component of ROD. The changing and accelerated way businesses deal with their customers and vendors requires a new strategic integration to become a reality rather than remain a concept discussed but affecting little action. Without action directed toward new strategic integration, organizations would lose competitive advantage, which would affect profits. Most experts see e-business as the mechanism that will ultimately require the integrated business processes to be realigned, thus providing value to customers and modifying the customer–vendor relationship. The driving force behind this realignment emanates from the Internet, which serves as the principle accelerator of the change in transactions across all businesses. The general need to optimize

resources forces organizations to rethink and to realign business processes to gain access to new business markets.

Murphy's (2002) pillar of architecture brings out yet another aspect of ROD. By *architecture* we mean the focus on the effects that technology has on existing computer applications or legacy systems (old existing systems). Technology requires existing IT systems to be modified or replacement systems to be created that will mirror the new business realignments. These changes respond to the forces of strategic integration and require business process reengineering (BPR) activities, which represent the reevaluation of existing systems based on changing business requirements. It is important to keep in mind the acceleration factors of technology and to recognize the amount of organizational effort and time that such projects take to complete. We must ask the following question: How might organizations respond to these continual requirements to modify existing processes? I discuss in other chapters how ROD represents the answer to this question.

Murphy's (2002) pillar of direct return is somewhat limited and narrow because not all IT value can be associated with direct returns, but it is important to discuss. Technology acceleration is forcing organizations to deal with broader issues surrounding what represents a return from an investment. The value of strategic integration relies heavily on the ability of technology to encapsulate itself within other departments where it ultimately provides the value. We show in Chapter 4 that this issue also has significance in organizational formation. What this means is simply that value can be best determined within individual business units at the microlevel and that these appropriate-level business units also need to make the case for why certain investments need to be pursued. There are also paybacks that are indirect; for example, Lucas (1999) demonstrates that many technology investments are nonmonetary. The IT department (among others) becomes susceptible to great scrutiny and subject to budgetary cutbacks during economically difficult times. This does not suggest that IT "hide" itself but rather that its investment be integrated within the unit where it provides the most benefit. Notwithstanding the challenge to map IT expenditures to their related unit, there are always expenses that are central to all departments, such as e-mail and network infrastructure. These types of expenses can rarely provide direct returns and are typically allocated across departments as a cost of doing business.

Because of the increased number of technology opportunities, Murphy's (2002) risk pillar must be a key part of strategic integration. The concept of risk assessment is not new to an organization; however, it is somewhat misunderstood as it relates to technology assessment. Technology assessment, because of the acceleration factor, must be embedded within the strategic decision-making process. This can only be accomplished by having an understanding of how to align technology opportunities for business change and by understanding the cost of forgoing the opportunity as well as the cost of delays in delivery. Many organizations use risk assessment in an unstructured way, which does not provide a consistent framework to dynamically deal with emerging technologies. Furthermore, such assessment needs to be managed at all levels in the organization as opposed to being an event-driven activity controlled only by executives.

*Summary*

Strategic integration represents the objective of dealing with emerging technologies on a regular basis. It is an outcome of ROD, and it requires organizations to deal with a variable, that forces acceleration of decisions in an unpredictable fashion. Strategic integration would require businesses to realign the ways in which they include technology in strategic decision making.

### Cultural Assimilation

Cultural assimilation is a process that focuses on the organizational aspects of how technology is internally organized, including the role of the IT department, and how it is assimilated within the organization as a whole. The inherent, contemporary reality of technological dynamism requires not only strategic but also cultural change. This reality demands that IT organizations connect to all aspects of the business. Such affiliation would foster a more interactive culture rather than one that is regimented and linear, as is too often the case. An interactive culture is one that can respond to emerging technology decisions in an optimally informed way, and one that understands the impact on business performance.