Editorial Preface

What Really Matters About IT?

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The claim that “IT doesn’t matter” has stirred a robust and passionate debate among IT practitioners and researchers. The core of the argument, in Nicolas Carr’s own words, is that: “As IT’s core functions—data processing, storage, and transmission—have become cheaper, more standardized, and more easily replicable, their ability to serve as the basis for competitive advantage has steadily eroded.” Consequently, IT should be managed as a commodity, with organizations taking a low-risk, low-cost approach to investing in only those IT capabilities that are deemed competitively necessary. While Carr’s argument may resonate with some company executives who are tired of the seemingly endless investment in under-performing IT systems and services, many practitioners and researchers have taken him to task on some of his key premises and conclusions.

The debate generated by the Carr article is not necessarily new or profound. Concerns about IT’s relative productivity has been raised and addressed by others (Roach, 1991, 1996). However, it clearly serves as a lightning rod that should prod researchers and practitioners alike from being complacent and condescending in their attitudes about the strategic importance of IT to organizations and the presumption that IT investments are imperative and inevitable. It raises a number of questions and issues that, if not addressed, will continue to create confusion in both the research and practitioner communities, compounding the cross-disciplinary communication problems that have plagued the field almost since its inception. Addressing these issues should allow us to focus on what is really fundamental and important about the acquisition, deployment, and effective use of IT-based systems and the value they generate for organizations. I address some of these issues below.

IS THERE A COMMON UNDERSTANDING OF WHAT IS MEANT BY IT

A close reading of either critics or supporters of Carr’s point of view highlight the fact that the focal construct “IT” means different things to different people. It appears that when Carr talks about IT, he is focusing mostly on the technology platform comprising the hardware, systems software and communication networks. However, Carr is not really clear on this point. In contrast, many of the critics seem to hold a broader definition of what is meant by IT, expanding the definition to encompass not only the IT infrastructure, but the people, processes, and systems engaged in its
deployment and effective use. Without a clear definition of what is meant by IT, it is more difficult to argue the point. In the past, efforts have been made to distinguish between IT (technology manifested in computing, storage, and communication networks) and information systems (IS) (the organizational processes involved in the management and use of IT) (Checkland and Howell, 1998). These efforts have not been very successful and have resulted in many within the IS field using the term IT to refer both to the technology and the processes involved in managing it.

This conundrum begs the following question: To what extent can we separate the IT from the systems and processes that it enables and supports? Some business process innovations would be impossible without IT. For example, integrated real-time supply chain management would be unachievable without a robust, resilient, and secure IT infrastructure. Researchers have argued that to fully understand the utility and impact of IT, one has to look beyond the technological artefact to the context, people, processes, systems, and information associated with the acquisition, deployment and use of the technologies (Checkland and Howell, 1998; Brown and Duguid, 2000; Walsham, 2001).

**IS THE IT MARKET A COMMODITY MARKET?**

The notion of IT as a commodity suggests that IT systems, services, and suppliers can be readily interchanged without significant loss of functionality and productivity. It implies that a ready and efficient market exists for these systems and services, and that organizations, the buyers of these systems and services, are aware and knowledgeable about their existence, appropriateness, and quality. It also suggests that switching costs are minimal and frictionless. However, the experiences of organizations in sourcing technology and services have been asymmetrical and problematic. Both the practitioner and research literature are replete with examples of failed IT programs and projects that are the result of inappropriate sourcing decisions. Firms do not readily understand the technologies they are acquiring, their appropriateness, and how to measure their contribution to organizational value creation (Scott and Vessey, 2002).

**CAN IT CREATE VALUE BY ITSELF?**

No technology can design, acquire, deploy and use itself (at least not yet). Value creation using IT does not occur simply by having the best technology available on the market. It is the result of prescient and persistent efforts of organizations to assemble, motivate, and deploy knowledgeable and competent managers, technical specialists, and users who, working together, are empowered to craft and execute innovative strategies and tactics in applying and exploiting the deployed IT. The organizational capabilities that result from these efforts arise through shared experience, learning, and knowledge accumulation that occurs over time as the organization matures. It is these capabilities that are strategic and not the IT itself.

**DO CONTEXTS & VALUES MATTER?**

Information technology is often assumed to be value and context neutral. However, both research and practitioner
studies highlight the heterogeneous and asymmetrical outcomes from IT deployment and use. What we have seen is that IT adoption and use has been shaped by the capabilities of the technology, the context in which it is being deployed, and the values and world views of those deploying it (Walsham, 2001; Checkland and Howell, 1998; Orlikowski, 1993).

Carr’s pronouncement implies a focus on the North American and possibly Western European contexts. It is not clear to me that the same situation occurs in other parts of the developing world or in economies that comprised the former Soviet republics or China. Clearly, the availability and use of IT is not as ubiquitous in these situations. Many of these countries and regions are still grappling with the most basic issue of deploying IT infrastructure to support business activity. It would be a mistake to think that just because the technology is readily available in North American and Western European markets that they can be easily acquired and deployed in other contexts. The experience of the transfer of a variety of infrastructure technologies from developed to developing contexts has not been an overwhelming success. The classic case of the tractor sitting in the field or the unused or ill-maintained railway systems should be sufficient caution.

IT systems and processes developed in one context embed the values of their creators. These values may conflict with the values of those who acquire and use the technologies (Walsham, 2001). Therefore simply obtaining the technology off-the-shelf does not mean that it will be understood and used in the way intended. For example, many enterprise systems embed “best practices” of standard business processes. However, these standard processes, while instructive, may be forcing the adoption of a worldview that conflicts with local beliefs and practices.

IS IT FULLY MATUR ED?

A commodity view of IT suggests that technologies have reached a level of maturity that portend very little or very predictable change in the future. The IT industry has demonstrated time and again, through innovations in hardware, software, and communications technologies, that radical shifts can occur rapidly. In a few short years since its commercialization, the Internet and its capabilities have radically transformed business thinking, models, applications, products, and services. Companies taking a purely commodity view could find themselves locked into technologies and processes that lead to competitive disadvantage. Commoditized IT capabilities become “core rigidities” that restrict responsiveness and stymie future growth and profitability (Leonard-Barton, 1992).

HOW MAY WE UNDERSTAND IT & ITS STRATEGIC VALUE?

The controversy about the strategic value of IT has emerged for a number of reasons, one of which has to do with the theoretical lens through which the issue about IT’s value is being viewed. It seems to me that the perspective being adopted by Carr (although not stated clearly) is a strategic positioning one, which emphasizes the appropriation and exploitation of proprietary technologies to create differentiation and build barriers to entry for competitors. With this view, it is clear that IT as a resource would not be considered a strategic resource because of its ubiquity. However, if IT’s strategic value is viewed using other theoretical lenses, a different
picture will emerge. This may account for the many different responses to Carr’s original article.

One promising way of understanding the strategic value of IT is the dynamic capabilities perspective (Teece and Pisano, 1994; Teece, et al., 1997; Eisenhardt and Martin, 2000). In an effort to explain how firms acquire and sustain entrepreneurial rent and competitive advantage, these researchers have argued that strategic advantage rests with the ability of the firm to presciently and adroitly adapt, configure and manipulate these resources and dynamic capabilities to address the strategic requirements generated by increasingly dynamic and unpredictable environmental conditions, rather than residing in the valuable, rare, or inimitable resources and capabilities assembled by the firm. Eisenhardt and Martin (2000) suggest that dynamic capabilities should be viewed as ‘tools that manipulate resource configurations. Dynamic capabilities are not themselves a source of competitive advantage. Such advantage comes from the resource configurations resulting from the application of the capabilities (Eisenhardt and Martin, 2000). In their reconceptualization of dynamic capabilities, Eisenhardt and Martin (2000) suggest that rather than viewing dynamic capabilities as ‘routines to learn routines’, dynamic capabilities are ‘specific organizational and strategic processes by which managers alter their resource base (p. 1111). The capabilities are not totally idiosyncratic but exhibit commonalities across firms in the form of ‘best practices’. They are not manifested solely in detailed analytical routines, but also as simple, experiential, ones. This is especially so in high velocity markets. Outcomes from the application of dynamic capabilities are not always predictable. They vary according to the dynamics of the market. Competitive advantage may not only come from dynamic capabilities with the traditional characteristics (valuable, rare, inimitable, nonsubstitutable) associated with them. They may also derive from dynamic capabilities that are valuable, but which may be somewhat ubiquitous, substitutable, interchangeable, and produce similar effects when applied. Dynamic capabilities evolve along a unique path that is ‘shaped by learning mechanisms such as practice, codification, mistakes, and pacing’ (p. 1111).

Applying the dynamic capabilities view to IT would suggest to us that the possession of IT resources and capabilities do not automatically lead to competitive advantage. This means that, essentially, Carr is right. However, the real issue is not whether the firm possesses the IT resources and capabilities or whether they are ubiquitous in the market. The real issue is whether the firm is able to presciently and adroitly apply the technology to address the strategic challenges it encounters in an increasingly competitive, globalized, and unstable operating environment. This is the key advantage that we see demonstrated by celebrated firms such as Walmart, Federal Express, Dell, and other world-class users of IT.

WHAT ARE THE IMPLICATIONS FOR RESEARCHERS & PRACTITIONERS?

For researchers, I am convinced that the dynamic capabilities approach is valuable and instructive for studying the strategic value of IT on a number of fronts. Firstly, it emphasizes the pivotal role of prescient and focused organizational action in creating the capacity to reconfigure and transform organization processes and
positions to respond to environmental
dynamics. Secondly, it brings to the fore the
notion of path dependency, by highlighting
the fact that investments in particular IT
systems tend to have long-term implications
and limit the choices that organizations can
make about future technologies and systems
(Markus, 2000). For example, by
implementing a specific type of ERP system,
organizations are limited in the path they can
take to upgrade and renew their systems. IT
systems and resulting infrastructure take a
long time to deploy and stabilize, and will not
readily be changed or discarded. Thirdly,
dynamic capabilities, as articulated by
Eisenhardt and Martin (2000), correctly
suggest that the IT and associated
capabilities themselves do not lead to
competitive advantage. They play a
necessary but not sufficient role. This notion
is appealing because it allows us to place the
IT and its capabilities in their proper place.
Although IT possession will not lead directly
to competitive advantage, it plays a central
role in allowing for the creation, integration,
recombination and release of valuable
organizational resources.

Although much valuable research has
been done on how firms acquire and
implement IT, there now needs to be much
more focus on how firms apply the
technologies they possess. Some of the
following research questions come to mind.

1. What organizational actions are necessary
   for leveraging the complementary
capabilities of IT to create strategic
   advantage for the firm?
2. What are the appropriate operational
   mechanisms through which these actions
   can be executed?
3. How should we measure the strategic
   impact of IT on organizational
   performance?

For practitioners, applying a dynamic
capabilities view helps to put the role and
contribution of IT in its proper perspective.
Too often managers and IT practitioners
spend most of their time enmeshed in the
intricacies of IT and its services, without
giving proper attention to its value in helping
firms achieve their strategic objectives.
Much focus and effort goes into getting
technology implemented, while relatively
little effort is put into developing the
capabilities to effectively use and apply the
installed technology. The value of IT is in its
use, not in its possession. Obviously IT
won’t matter if it is not presciently and
adroitly applied to address strategic business
issues.

ENDNOTES

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