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From IT Development to IT Exploitation – Shifting the Research Agenda.

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Abstract:

As it is now a decade since Nicholas Carr [2003] made his highly controversial claim that 'IT no longer matters', the time would seem ripe for a critical reappraisal of this view. In short, he was arguing that as IT was rapidly becoming a largely undifferentiated commodity, the scope for organisations to use IT strategically, to gain and sustain a competitive advantage, was rapidly diminishing. His inference from this state of affairs was that in future organisations should focus on cost minimization and risk avoidance, when making IT investment decisions. In this short opinion piece, we seek to briefly assess the extent to which his vision of the future has come to pass, before seeking to identify the implications of this situation. In so doing, we draw the conclusion that as many organisations do appear to be opting for a safety first, cost minimization strategy, the focal point for the bulk of their IT activities should shift from pre implementation, to post implementation.

Keywords: IT investments; IT commoditization, IT exploitation; benefits management.

1.0 Introduction

Ten years ago Nicholas Carr [2003] posed the question: '*does IT matter?*' Carr was asking very legitimate questions about whether information technology has become commoditized to the extent that it is now a generalized utility that organisations can buy '*off the shelf*', purely on the basis of cost and service performance. Indeed, there is now a great deal of evidence to suggest that Carr's view of IT is shared by many organisations, who are keen to adopt standard systems such as ERP, which provide little opportunity for differentiation, and therefore competitive positioning. This new reality of IT as a largely undifferentiated product that is increasingly been experienced by organisations as a service, in a way chimes with the long-standing reluctance of many organisations to take risks with their IT expenditure. As the earlier business adage put it: '*no one ever got fired for buying IBM*'.

If IT is now perceived to be a largely undifferentiated commodity, then its ubiquity makes it, in effect, an equalizer - the same technology is available for purchase to everyone [Gilbert et al, 2012]. The corollary of this conclusion is that one might expect any such commoditized technology to deliver similar economic returns, irrespective of the organisational context in which it has been implemented and ultimately operated. However, as many organisations have learnt to their cost, the economic returns from IT are a very long way from being uniform and deterministic. It is widely acknowledged that a considerable amount of time, money, effort and opportunity has been wasted upon IT investments that have either been abandoned, or ultimately failed to deliver any appreciable benefit [Fortune & Peters, 2005]. Indeed, it has been suggested that *'only around 16 per cent of IT projects can be considered truly successful'* [BCS, 2004].

In this paper, we aim to explore the extent to which organisations appear to be accepting that IT no longer matters, and the implications that this might have for the realisation of benefits from IT investment projects. In so doing, we raise the question that if IT doesn't matter, what does? The remainder of this paper is organised into three parts. First, we provide a brief, but critical, review the growing literature that provides support for the view that IT is now a highly standardised commodity. We then look at the literature on the value that is leveraged from IT, and the circumstances under which it might, or might not, be forthcoming. Finally, we seek to explain why IT delivers such unequal returns, and in so doing we argue that whilst IT might no longer matter, how we exploit it almost certainly does.

2.0 Viewing IT as a simple commodity

It has been argued that IT is now such a readily accessible, affordable and homogenous commodity, its potential to deliver any sustainable competitive advantage has become severely restricted, because, by its very nature, strategy requires differentiation [Thatcher & Pingry, 2007]. Although the organisational roles and impact of IT have changed dramatically, in the last few decades, in many ways IT is not dissimilar to other disruptive technologies that have previously transformed the industrial world [Carr, 2003]. It is widely acknowledged that IT may have provided a differentiated advantage to some companies early on, but over time IT has grown

cheaper and more standardized so that it is easily accessible to everyone. The claim that 'IT no longer matters' resonates with the earlier '*strategic necessity hypothesis*' [Powell & Dent-Micallef, 1997], which asserts that it is unlikely that any individual application of IT will be able to deliver a sustainable competitive advantage, because it is relatively easy for firms to understand, and then copy their competitors' systems, and that failure to do so, will leave them competitively disadvantaged [Melville et al, 2004].

Against this backdrop, more and more organisations have tended to base their IT investment decisions on the dual criteria of cost minimisation and risk aversion. For example, by implementing readily available, commercial, off-the-shelf (COTS) solutions, organisations will typically achieve a far cheaper, faster and safer solution [Berg, 2008]. The rapid growth of outsourcing and shared service arrangements, in which common business systems and services are provided more cheaply, through a third-party provider [Chan et al, 2012], also provides compelling evidence that organisations are going for cheaper, and less risky, solutions. Moreover, many scholars [e.g. Ravichandran et al, 2009] have demonstrated using '*institutional theory*' that growing numbers of organisations seek to reduce both costs and uncertainty by simply investing in the same types of technology, as their competitors. As technology costs tend to decline with time, early investors in emerging technologies often pay higher prices for the technology. Consequently, firms that resist the temptation to aggressively invest in emerging technologies are likely to avoid significant risks and costs [Ravichandran & Liu,2011]. If organisations are generally adopting a cost minimisation and risk aversion strategy, when it comes to their IT investment strategy, this begs the question of the extent to which this strategy has been successful in terms of the delivery of benefits from IT.

3.0 The returns on IT investment projects

Whilst there is much evidence to suggest that many organisations are already buying into an IT investment strategy based primarily upon cost minimisation and risk aversion, this isn't necessarily a sure-fire recipe for success. Estimates of the level of failure may vary, but over the past thirty years they have tended to stay uncomfortably high. More specifically, it has been suggested that in the late 1970s only 20% of

projects '*achieved something like their intended benefits*' [Eason, 1988], and that by the end of the 1990s, Clegg *et al* [1997] reported that '*up to 90% of all IT projects fail to meet their goals'*. In the last decade, Shpilberg et al [2007] reported that 74% of IT projects from 1994-2002 failed to deliver expected value. It can be argued that in recent years, the situation has improved, but only marginally. For example, an even more recent survey of IT executives found that 24% of IT projects were still viewed as outright '*failures*', whilst a further 44% of projects were considered to be '*challenged*', as they were finished late, over budget, or with fewer than the required features and functions [Levinson, 2009].

The big danger for IT executives who do view IT as a ubiquitous and largely undifferentiated commodity, is that if they outsource the responsibility for delivering a successful project they are also likely to assume that it will automatically deliver value [Ashurst et al, 2008]. Unfortunately, such confidence is often misplaced. For example, Barker and Frolick [2003] describe how a major soft drink bottler's ERP system was intended to provide the benefit of integrated communication, but once live was considered a hindrance to the overall business. Similarly, Peppard *et al.,* [2007] report the case of a newly implemented CRM package that was delivered to time, budget and specification but provided no immediate benefits to the organization. These studies show that if investments in IT are to be considered successful then they have to achieve more than technical targets such as satisfying a project's budget, time scale and feature requirements [Dorgan and Dowdy, 2004; Sauer and Davies, 2010]. Consequently, there may be a gap between business managers' expectations concerning the potential value and benefits that can be leveraged from commoditised software and the reality of information systems being exploited to their full capacity.

4.0 If IT doesn't matter, what does?

In their empirical study of the impact of IT, Gilbert et al [2012; 184] concluded that: '*the lesson from this study for practitioners, at least those at information technology-using industries, is to manage information technology to keep costs and risks under control and look elsewhere for innovation*'. We would broadly agree that organisations might be well advised to base their IT investment decisions on the basis of cost minimisation and risk reduction, but would argue that organisations still need

to explicitly focus on strategies for leveraging value from their investments. Moreover, we would encourage them to still seek to use IT as a platform for innovation, but not necessarily at the point of implementation.

It has been argued that the realisation of benefits from IT is '*a journey not a destination*' [Doherty, 2013]. In traditional systems development projects, the implementation of the software artefact tends to be the point at which most of the project activity, as well as any senior management interest, tends to wane [Ward et al, 1996]. Unfortunately, from a benefits realisation perspective, this situation is seriously deficient, as benefits need to be actively managed over the system's operational life [Leonardi, 2007]. This longer-term exploitation strategy is often advantageous, as it encourages stakeholders to innovate and improvise with their local working environments [Orlikowski, 1996], and to tailor their systems and processes, to reflect changing organisational circumstances and requirements. As Jasperson et al [2005] note, organizations may be able to achieve considerable economic benefits (via relatively low incremental investment) by enabling users to enrich their use of already-installed information systems.

Unfortunately, it is not clear how easy it will be for organisations to leverage value from their IT investments, once operational, as relatively little attention has been devoted to examining how existing IT installations can be exploited by firms, to provide on-going innovation opportunities. Much of the extant literature concerning the post-implementation use of IT has very narrowly focussed upon the initial uptake and adoption of IT, rather than any long-term user behaviours [Ahuja and Thatcher, 2005]. Consequently, there is now a pressing need for wider research that goes beyond examining user acceptance behaviours of systems in the immediate post-adoption period, and addresses the long-term exploitation of IT investments [Jasperson et al 2005]. To summarise, not only is the implementation of a new piece of software, typically the signal for many IT professionals to move swiftly on to new challenges, it would also appear to be the point at which the interest of the majority of information systems researchers starts to wane. But what can be done to address this sorry state of affairs? The time would seem ripe, for members of the practitioner and research communities, to shift the focal point for the bulk of their work from pre-implementation activities, to the on-going refinement and exploitation of software,

once implemented. A research agenda to reflect this shift in emphasis might productively focus on issues such as: proactive benefits management, job re-design, user behaviours, innovation, value exploitation, user training, software customisation and IT capabilities.

5.0 Concluding Remarks

IT professionals, academics and users are all often tempted to refer to their software systems and applications as tools. However, when other types of tool are put in the hands of an unfamiliar user, be it a chisel, a lathe or a scalpel, there is an automatic assumption that it will take months, if not years, of training, experimentation and practice, before he or she can use it to good effect. By contrast, when IT tools are deployed, there is often a wholly unrealistic expectation that they will immediately start to deliver organisational value, and will continue, so to do, with little or no ongoing intervention or proactive support. In this short paper, we argue that as IT becomes more commoditized, organisations should make a significant shift in their IT activities from the design, development and implementation of IT solutions, to the ongoing exploitation of IT tools, once operational. Such exploitation may come through: ongoing support, training and education; experimentation and innovation; or the gradual tailoring of organisational behaviors and practices, so that users can operate their tools, to best effect.

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