

“Strategy Sort Of Died Around April Last Year For A Lot Of Us”

CIO perceptions on ICT Value and Strategy in the post dot-com era

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Abstract

In this paper we focus on understanding how the business environment influences strategy formation in organisations. This is relevant as there is little guidance on how Information and Communication Technologies (ICT) can be better managed in the wake of dramatic economic changes such as caused by the dot-com bust. The aim of this study is to investigate how CIOs strategise while coping with the increasing ubiquity and complexity of ICT on one hand and hyper business pressures on the other. We were keen to gauge the shifts in tenor and tone of ICTs perceived value and the associated strategising process in the wake of the dot-com bust, with a view to inform the practical matter of managing ICT for value more effectively in future boom-bust cycles. Our findings suggest that recent changes in market conditions, as well as in the trust bestowed on technology as an agent for radical change, have had serious consequences for the perceptions of risk, strategy and ICT investment. The CIOs in our study described the dot-com boom-bust transition in terms of a shift from a higher-risk, top-down technology led approach to strategy which was centred on killer applications towards a lower-risk, bottom-up, organic approach which is aimed at providing open, business user driven enabling infrastructures. We suggest that such a shift from the ‘design’ and ‘planning’ school of strategy formation towards a more ‘environmental’ and ‘configuration’ one maybe necessary to manage ICT in the current context, where professionals need to increasingly accommodate multiple perspectives for discerning value and cultivate ‘value skills’ to support the ongoing conversations.

Introduction

Information and Communication Technologies (ICT) are now vital to many aspects of human interaction, for the exchange of goods, services, information, ideas, competence and contacts in our global society (Dahlbom, 1996; Castells, 2000b). In the last few years ICT became widely diffused and interwoven across a variety of industries leaving few markets untouched. The world of ICT use is aptly described as a messy and changing combine of people, technology, ideas, organisational structures and processes (Kling and Scacchi 1982). There is a real possibility that our understanding and ability to cope with complex ICT linked changes in future might diminish unless there is a renewed focus on understanding the ICT artefact (Orlikowski and Iacono, 2001). One of the ways this can be done is through broader and deeper interdisciplinary conceptualisations of ICT role and value (Mathiassen and Sørensen, Revised version of: “Strategy Sort Of Died Around April Last Year For A Lot Of Us: CIO perceptions on ICT Value and Strategy in the UK Financial Sector,” ECIS 2003, Naples, Italy. Submitted to international journal.

2002).

At a firm level, the pressures to justify and articulate ICT value have always been there due to the sheer scale and substantial investments associated with them (Brynjolfsson 1993). The ability of ICT to provide ‘strategic advantage’ has been actively debated through numerous studies focussing on ICT value, its assessment and articulation, and has yielded paradoxes (Benjamin et al., 1984; Ciborra, 2002). Over the last few years this debate has been deeply influenced by rapid technological and business developments, such as the wide diffusion of Internet technologies, the emergence of mobile phones, e-commerce services, and in particular the few explosive years generally known as the “dot-com” era. In this shimmering era there was no finer gold than the ‘killer app’ (Negroponte in Downes and Mui 2000). There was a widespread emphasis on “first-mover advantage” and many analyses advocated investments in ICT for competitive advantage, for creating new markets and opportunities for brand new industries (Mellahi and Johnson 2000). The “dot-com” era took no prisoners – it declared all old companies without an e-strategy dead and praised a new ‘e’ world order De Kare-Silver (2000). Then the bubble burst leaving behind many failures and a number of ‘dot cons’ (Cassidy 2003). However the new economy did not end with the bust, it left many survivors, and now business continues of course almost as usual.

These dramatic economic changes have heightened the demand placed upon organizations to form strategies that help manage uncertainty (Courtney 2001). It has become crucial for them to understand and anticipate the nature and speed of ICT-enabled change to exploit opportunities for innovation and manage potential threats (Davis and Meyer 1999). Situated amidst such an environment we sought to investigate *how senior practitioners strategise, speak of and manage ICT while coping with the ever-increasing ubiquity and complexity of ICT on one hand and hyper-business pressures on the other?* We were keen to gauge the shifts in tenor and tone of ICT’s perceived value and the associated strategising process in the aftermath of such dramatic economic changes. Through this study we hope to inform the practical matter of how ICT can be better managed in future boom-bust cycles. Our research was directed at CIOs of very large organisations within the UK’s highly developed and technology intensive Finance Sector (DTI, 2002). We present here a theoretical analysis and discussion of ten such semi-structured interviews conducted with these executives. A rigorous selection procedure was used to identify organisations, typically FTSE 500, with a turnover of more than five hundred million pounds and with ICT spends of more than one million pounds.

Although quantitative, economic analyses focusing on the value of ICT can provide useful input to decision-making; this data necessarily reflects a limited calculative rationality that cannot encompass contextual business issues at work within corporations especially in the profoundly uncertain environment in which financial services currently operates. Hence we attempted to capture perceptions using a qualitative approach, which revealed several

interesting findings. It demonstrated, as the title states, that economic and technological uncertainties have re-defined the role of strategising within organisations to such an extent that one of the respondents used the expression: the “death of strategy”. Intense top-down strategising has been replaced by a more bottom-up day-to-day tinkering and grappling approach. Moreover the value of ICT is perceived to be as a low-risk yet flexible ‘enabling’ platform established in alignment with business units that ensures better organisational performance. ICT was deemphasized from ICT Strategy, and infrastructure issues appear to be assuming significance yet again. Our study demonstrates that perceptions of the strategic value of ICT investment are highly contextual and temporal. It also shows that people are being put back in strategy, and we suggest that the ‘strategic imagery’ (Cummings 2003) displayed by these practitioners is one way of coping with the uncertainties of seemingly opposing yet concurrent requirements of low cost, flexibility and competitive advantage. This not only reinforces the contemporary view of ICT as ‘infrastructures’ (Star and Ruhleder 1996), but also suggests the need to cultivate different perspectives for discerning value by enhancing the ‘value skills’ of professionals involved in the management of ICT.

The following section situates our work within related research and outlines essential concepts for the subsequent analysis. Section three presents the research methodology. Section four describes the main results, which are subsequently discussed and contextualised in Section five.

Related Research

Strategy has been a well debated and dominant concept of our times, fuelled partly by the belief in analysis as a precursor for success and the relentless search for advantage by firms, for out competing competitors, for thriving amidst risk. Mintzberg et al. (1998) comprehensively reviewed the evolution of this field over the last four decades and characterised them across ten ‘schools’ of strategy formation. Within firms’ strategy remains bedded in confusion, perhaps owing to differing viewpoints on what strategy actually is, the existence of multiple approaches to strategy formation each with their associated underlying ideologies, assumptions, content and finally the practical battle between analysis and intuition. Thus defining the nature of the strategy ‘beast’ has proven problematic as well as contentious. For the purposes of this discussion we use Peter Drucker’s (1993) description of strategy as an organisations theory of business that captures its set of assumptions, objectives, desired results and customers thereby allowing it to be purposefully opportunistic’. It is interesting to note that amidst such differences there do exist areas of agreement on the nature of strategy, for example that it: concerns both organisation and environment; is inherently complex and unstructured; involves issues of both content and process; is not purely deliberate; and that it involves the welfare of the whole organisation Mintzberg (1998:16).

Markides et al. (2002) make a similar point when they posit that behind every successful company there exists a strategy that works regardless of the way it has been developed, through formal analysis, trial and error, intuition or pure luck. In the new economy strategy innovation is held to be the key to creating wealth (Chesbrough 2003).

Strategies exist at different levels within the firm, at the corporate, business and the functional level. In this paper, the word 'strategy' largely alludes to functional strategies such as the IT strategy unless otherwise specified although we will see how the strategies at different levels are and need to be closely interlinked. Strategy has strong temporal implications too. But although temporality is fundamental to a variety of theories of organizational change and strategic planning, in virtually all these models time is assumed to be unproblematic, independent, 'out there' and 'unilinear' (Kavanagh and Araujo, 1995). There has been however a renewed interest in understanding the role of the 'environment' and hence indirectly the role that temporality can play on strategy formation within firms'. For example, Hidding (2001) surveys contemporary strategy literature based on a "control theory" view of strategy (Cyert, 1988). He reviews well known IT Strategy 'methods' (frameworks, concepts, models, theories) and classifies them as dynamic or static accordingly, if the inherent strategy logic incorporates 'speed of change' and/or 'competitive interaction characteristics' for a firm to achieve a competitive advantage 'sustainable' for a certain period of time. He further explains how the 'sustainability analysis' method addresses such concerns by identifying key ecologies (long cycle, standard cycle and short cycle) and adopting a product view of advantage for the firm. The three ecologies embody the firm and its actors, and point the important differences in strategies and timelines for the firms to focus on while evolving strategic ICT applications and core ICT capabilities.

With regard to the role of the 'central actor' in strategy formation and execution within firms, the broader management literature often distinguishes between a top-down and bottom-up management led approach. For instance, Ansoff (1994), who first postulated strategic management, emphasizes the role of the 'chief/ architect' in strategy formation, describing it as:

"a comprehensive procedure which starts with a strategic diagnosis and guides a firm through a series of planned steps which culminate in new products, markets and technologies..."

Ciborra (2002) rejects this top-down perspective emphasizing instead the 'cultural' and 'learned' perspective suggesting that true strategic advantage must be based on capabilities that are imperfectly imitable, and that (p.31):

"To avoid easy imitation, the quest for a strategic application must be based on such intangible, and even opaque, areas as organizational culture"

This calls for an organic bottom-up approach strategy method which focuses on actors

engaged in situated “bricolage”, and where developing a strategic information system is:

“...much closer to prototyping and the deployment of end-user ingenuity than has so far been appreciated: most strategic applications have emerged out of plain hacking. The capacity to integrate unique ideas and practical design solutions at the end-user level turns out to be more important than the adoption of structured approaches.”

Galliers & Newell (2003) attempt to bridge this divide by proposing a more inclusive framework for ICT strategising. They stress on a hybrid approach, which can be employed by firms as part of their information infrastructure strategy (a socio-technical connotation). An exploration approach (more bottom-up) which is inherently dynamic, open and emergent for example in promoting communities of practice and an exploitation approach (more top-down) which represents the deliberate and codified dimension of using ICT in the form of rules and procedures.

The more recent pluralist conceptualisation of ICT strategy stems from continued pressure on managers to align the functional ICT strategy with the business strategy and vice versa. This in turn is generated by a received wisdom that many perceive ICT's as having a strategic value in the quest for competitive advantage by a firm (Ives and Learmonth 1984; Porter and Millar 1985). The debate on the value of ICT is however by no means resolved or passive. It has been widely theorised albeit mostly from an effectiveness or an evaluation perspective driven by businesses needs to measure and justify the performance or productivity related benefits of ICT to either individual users or management (Seddon et al., 2002). There have been conflicting views on whether ICT provide direct value to a firm referred to as the ‘productivity paradox’, i.e., no apparent direct productivity effects of ICT investment. For instance, while Strassman (1997) found little correlation between ICT expenditure and corporate profitability, Brynjolfsson and Hitt (1993) argue that the ‘*shortfall of evidence is not evidence of shortfall*’. However, scholars tend to agree that parameters linked to evaluation such as mis-measurement, time lags, redistribution and mismanagement help in explaining this paradox. From a subjective and more qualitative perspective, it is posited that the nature of the relationship between ICT professionals and business user groups may significantly affect the degree to which ICT adds value to an organisation. The concept of ‘psychological ownership’ is put forward to describe this relationship between the two suggesting that both ICT and user ownership are important factors contributing to the perceived value from ICT (Remenyi et al., 1998; Avital and Vandenbosch, 1999). Controversies relating to the concept of value within firms follow them throughout their life-cycle: how it is created, defined, measured, captured and sustained. Much like strategy it is hard to provide a simple definition of value as it tends to be customer defined, multidimensional, relative, opaque and contextual (Sawhney, 2003).

Despite these difficulties, scholars maintain that a successful ICT strategy should harness ICT

resources for “optimum value” (Willcocks and Lester, 1999). Venkatraman (1997) uses the term ‘value center’ as an organising concept to differentiate the management approaches applied to realise ICT value within firms, characterised as per the two analytical dimensions; purpose and risk propensity (See Figure 1).

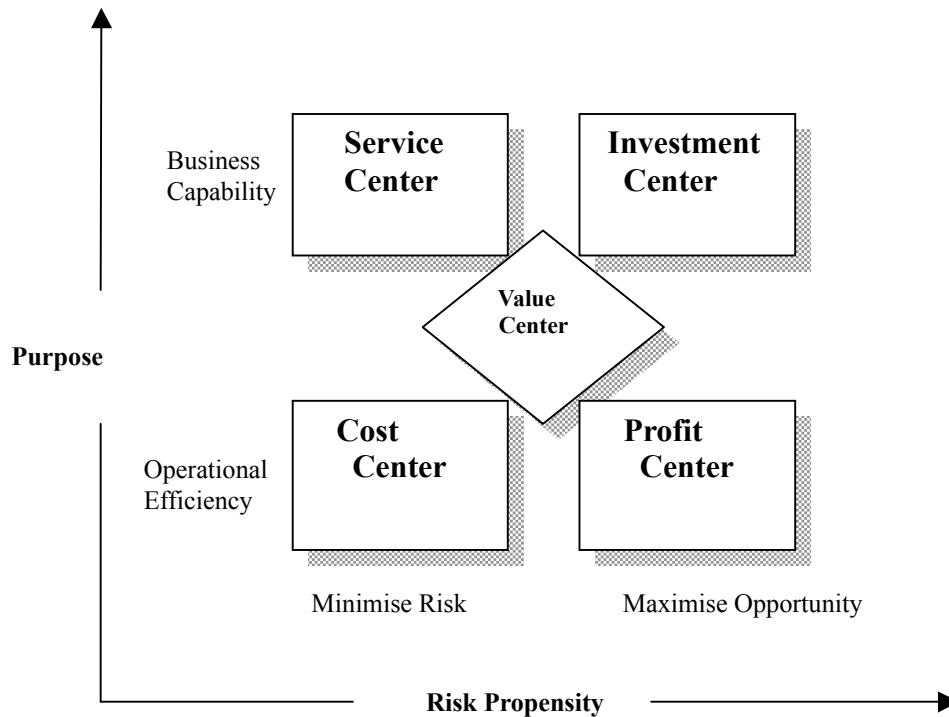


Fig 1: Venkatraman's (1997) framework characterising the kinds of IT Value conceivable for Firms

The analytical distinctions between a) the propensity of minimising risk versus maximising opportunity, and between b) the pursuit of operational efficiency as opposed to business capability, yields four characterisations of the ICT function in terms of value centers. These are the cost, service, profit, and investment centers respectively. The cost center reflects an operational focus that minimises risks with a predominant focus on operational efficiency. The service center, while still minimising risk, aims to create an ICT enabled business capability to support current strategies. The investment center implies a longer-term focus and aims to create new ICT-based business capabilities. Finally, the profit center is designed to deliver ICT services to the external marketplace to realise incremental revenue. Venkatraman (1997) argues that deriving optimum value from each value center requires a *distinctive approach to managing the IT resources*, and importantly requires a *distinctive evaluation regime*. Thus the corporation should seek to balance the four sources of value, although it is understood that the relative emphasis on these values could change over time.

In the following sections we will attempt to unite notions on ICT strategy, on managing ICT resources for value, on the role and descriptions of ICT by studying the impact of the

environment on these constructs.

Research Approach

Our choice of the UK Financial Services sector as the focal point for this study was based on this sector's dependency on ICT in mediating key business practices as well as the high standing of the City of London. The UK Financial Services sector is one of the world's leading employing around 1 million people and with a net overseas earning in 2000 or around 5% of the UK Gross Domestic Product (DTI, 2002). The City of London, New York and Tokyo are the world's three leading financial centres and London is the largest centre for many of the international financial markets. It was recently estimated that the UK's expenditure on ICT amounted to at least £45 billion (€71 billion), and it is not uncommon for financial services organizations to devote more than 20% of their budget to ICT investment and operations (Willcocks and Lester, 1999). Moreover, recent years have seen significant changes on the landscape, for example the rise of Internet-based services, eBanking, eCRM, eProcess Integration (Straight Through Processing), consolidation, outsourcing and the emergence of new enterprises.

As the main research enquiry in this paper was concerned with Chief Information Officer (CIO) perceptions on ICT Strategy, the core of our research approach was comprised of a series of semi-structured qualitative interviews with CIOs (Patton, 1990). On the basis of a preliminary literature review, a set of interview questions was developed. These formed the basis for a series of feedback sessions with a steering group from the ICT Strategy, Operations, and Business Development functions at a company we refer to by the pseudonym SoftCo — a leading global software company employing several thousand systems developers, primarily developing mainframe-based enterprise systems. Continuous sparring with steering group members throughout the planning, design, data-collection and analysis activities of the study provided us with deep domain knowledge, helped refine our approach, and ensured the relevance of the research questions posed. The fieldwork design was directed at experienced Heads of ICT (we will in this paper refer to this role as CIO) within end-user financial services organisations. We, furthermore, included a number of independent ICT practitioners in order to serve as a further reference group for the study. These and the SoftCo experts were interviewed or participated in meetings discussing the research design and sample.

The identification and selection of interviewees was conducted in a systematic and rigorous fashion. We carefully selected a pool of 150 organisations to begin with and then narrowed down to 40 organisations, which had average annual turnovers of around £500 million (€790 million) and with reported ICT expenditures typically more than £1 million (€1,6 million). The companies had more than 250 staff and a well-established ICT function. The CIO for

each of these organisations was contacted by a letter requesting an interview. This first part of the selection process resulted in a sample of 30. CIOs tend to be extremely busy people, for whom unsolicited research interviews with fixed date and time can be quite difficult to organise and perhaps even justify. We, therefore, did expect a low response rate for the interview requests. Much to our surprise, the response rate was more than 50%, which was encouraging and suggested that the scope of enquiry of this research was perceived to be very relevant.

In this study we present interviews and discussions conducted with 10 such respondents across 10 organisations, from June to September' 2002. Table 1 lists the respondents. All interviews except one (a telephone interview) were conducted face to face, and the interview time varied from 45 minutes to 1 hour and 45 minutes. The interviews were transcribed and subjected to content analysis where precepts of intentional analysis were applied to the transcripts (Sanders, 1982). All organisations and individuals remain anonymous in the reporting of the results. Table 2 provides a summary analysis of responses from CIOs and representatives from the industry steering group. In the following sections, we present and discuss the basic themes investigated by means of an iterative dialogue between the responses received, and their implications in light of the broad literature on the research themes. While the validity of intentional analysis defies quantification, excerpts from the transcribed interviews have been included to help readers judge for themselves the validity of analysis.

Images Of Strategising

The interview data provides us with a considerable insight as to how CIOs strategise regarding ICT, and we have summarised the main findings in Table 2. The following section will draw out some of the most interesting results in terms of the role of strategy, conceptualisation of ICT, and perceptions on managing ICT value.

ICT Strategising is de-emphasising ICT

One of the dominant perceptions was that technology itself had a relatively secondary role to play in the process of ICT strategising as compared to the role played by the user perspectives and business mandates. Given that we sought the opinions of executives responsible for technology in highly technology intensive organisations, we initially expected that the views expressed in this regard would be centred mainly on the opportunities and challenges associated with technologies while charting the organisations journey forward, however this was surprisingly not the case. As stated by CIO A , Z and G:

“We have an IS Strategy, which doesn’t talk of technology, but talks about our mandate, business drivers and the areas of initiatives.”(CIO A)

“In most cases technology is never the issue...its how does it influence the business which is important.” (CIO Z)

“Whenever IT tends to front run the business, they usually get it wrong. Often technologists don’t seem to be able to ask the right questions” (CIO G)

The dot-com bust has brought the ICT function much closer to discussions on business development. CIOs seem to avoid making strategic decisions on their own, based mainly on technological opportunities. They see themselves as an integral part of the business with a focus on relationships and co-ownership. The business front is seen as the driver for ICT investment, and not the other way around. This is possibly a reaction to the techno-hype of the dot-com era. As argued by CIO G:

“Technology relationship has changed in the last two years. We were transformers. We were off on our own. We were the chosen few. We were in great shape as long we had a Web front-end. Post-dot-com we became business partners again. And people said welcome coming back to our level. The partnerships are good now.”

Conceptualisations of ICT

When we asked CIOs how they would describe their ICT, we found two common patterns emerging from the descriptions across a majority of firms. Firstly, the notion of ICT as a ‘horizontal’, ‘generic’ infrastructure, which contained the hardware and software elements, related to ICT use. This was seen as supporting standard corporate functions such as administration, human resource management, data collection, and risk analysis. Secondly the notion of ICT as deeply interwoven with business processes, emphasising the highly complex customised mesh of user groups and technological properties. These points are illustrated for instance by CIO E, who said:

“I would say that there are the generic systems and services ...email, data storage and management, networks which are used extensively directly or indirectly by everyone in the organisation...beyond that you get into systems specific to user lines...systems that target our marketing and customer facing areas. The systems across each line are quite different...in some cases even within the same line but across different geographies are quite different.”

However, in both these descriptions we observe a marked shift from the traditionally dominant technological properties-based perspective that focused on managing the development of specific, dedicated strategic applications to a more holistic use based perspective of ICT. This reflects, amongst others, the shifts in ICT challenges over the past decades, from emphasising the development of bespoke systems towards the use of technology (Dahlbom, 1996). We can view the change as a shift in the nature of ICT

development from a bespoke process, to a co modification of products and services (Quintas, 1994; Sørensen and Cornford, Forthcoming). These interconnected products and services are now being related to business processes and together constitute enterprise infrastructures (Hanseth, 2000).

The Rise and Rise of Infrastructures

The predominantly expressed notions of ICT as infrastructures supporting business processes might seem to suggest that they are considered to be non-core to the business. However, the CIO's in our study clearly expressed that this was the real value of ICT; in providing a robust enabling platform, a central core around which users changing information and business needs can be actively supported. Moreover, while managing ICT for this value was crucial, at the same time it was also quite difficult. As CIO E reflected:

Infrastructure is both a commonality and a facilitator. Makes sense to manage it very well and at low costs. There's a hidden value in getting it right, if you don't, its competitive disadvantage. It's an intrinsic part of an organisation now. Things like Web, Email and Connectivity. It's taken for granted, and very difficult to justify.

The continued rise of infrastructure led approaches for managing ICT is perhaps sign-of-the-times. Weill and Vitale (2002) define ICT infrastructure as the base foundation of budgeted-for ICT capabilities (both technical and human) shared throughout the firm as reliable services and centrally located. Indeed Broadbent et al. (1999) noted that ICT infrastructure expenditures account for over 58 percent of the organization's ICT budget, and were growing at 11 percent annually. An adaptive ICT infrastructure enables flexibility, supports mass customization and quicker time to market, particularly important for firms in hyper competitive industries and for those with multiple business units or geographically dispersed operations. We observed that respondents perceived the firm's ICT infrastructure capability as crucial for its sustained competitive advantage. Rapidly moving industry sectors such as the finance sector must provide open and flexible platforms supporting improvisation and flexible working. This implies that embedding business procedures into technological arrangements as often done earlier in the quest for 'killer applications', can create barriers for future flexible change. Latour (1991) argues that "technology is the social made durable". In fact in conceiving technology as an enabling infrastructure we implicitly acknowledge its limits and the unintended consequences associated with it. In this respect the provision of, for example, video conference technology as reported by CIO A did not stipulate behaviour but rather provided opportunities. The company's Finance department suggested introducing video conferencing across 11 of its 30 offices worldwide with the objective of reducing travel costs by a quarter. However, the implementation of video conferencing technology realised only very trivial travel cost savings. This was owing to the fact that people still wanted to

travel and technology was not empowered to mandate that people change their behaviour and travel less. The growing need for managing ICT as infrastructure also stems from the fact that users increasingly expect simplicity and ubiquity of complex services, and yet take them for granted. CIO G argued:

“...at its heart technology has a lot of moving parts and trying to quantify and analyse the overall impacts is very tough. Especially for people who don’t understand why it’s so complicated. For them its dial tone... desktop dial tone and there’s no difference between accessing your systems and picking up the phone.”

Strategy is Dead: First or Second Mover Advantage?

There appeared to be a common message to the general question about how CIOs perceived the role of ICT strategy in their organisations. Possibly summarised best by the following comment by CIO G, who we believe was alluding to the dramatic changes on many firms landscapes post the dot-com bust:

“Strategy is not a very strategic term now. Strategy sort of died around April last year for a lot of us.”

In an era of constant and unpredictable change, the practical usefulness of strategy as commonly understood and formulated is being increasingly and loudly questioned. The traditional view that strategy is concerned with making ‘planned’ predictions based on ‘effective analyses’ seems to have evaporated. Moreover the immense belief in the strategic value of ICT led investments has diminished and the resultant time frame for ICT investment payback has been greatly reduced. As argued by CIO D:

“That’s the ideal world [that strategy is long-term]. In the real world it’s a different story. In Financial Services, business changes very quickly. If you think of a 5 year strategy at our front office, they’ll probably laugh. It’s no more than 3 months!”

With a dramatically shortened outlook and with shorter and shorter technology life cycles, organisations may be finding themselves in increasingly difficult situations coupled with pressures to innovate fast, but incrementally. This has implications on the whole issue of first versus second mover advantage. As argued by CIO E:

“We are reasonably conservative and content with regards to our approach to technology. What we believe is we can watch the trends and see how they develop. We don’t have a screaming need to be first, if we can be a close second or third on things that matter to us - that’s perfect. [...] This is because most of the hype around technology in the last decade hasn’t delivered.”

This is in marked contrast to the views expressed by many academics in the middle of the

dot-com boom. Whereas the dot-com book dictated that first mover advantage (often associated with higher-risk acts of faith) was everything, the low-risk innovation strategy is more contextually determined. And though ‘holy grail’ technologies such as Knowledge Management and Customer Relations Management systems are marketed aggressively by consultancies and service providers, they are not automatic choices even within such large organisations that possess significant spending power. As two of the CIOs said:

“We are not clear as to how systems fit in between the relationships with our clients?”

“Most promises about KM haven’t really been delivered? We would like to watch it more clearly.”

Discussion

This paper attempts to explore *how CIOs strategise while coping with the ever increasing ubiquity and complexity of ICT on the one hand and hyper business pressures on the other?* We did not of course get a completely unified message, but there was surprising agreement on key areas across organisations. Our analysis of the field data provides a critical perspective on strategy in the post dot-com world, where widespread technology-led acts of faith have been replaced by careful incremental ICT investment processes.

At a business level the value of ICT spans multiple dimensions; such as the ability to enable business processes be conducted more reliably, faster, with lower costs, providing information for better decision making and increasing revenues. However using a ‘proxy-view’ of technology (Orlikowski and Iacono, 2001), if we map CIO perceptions on managing ICT for value across Venkatraman’s framework (1997), we observe a distinct shift. We found that current perceptions concur with the view of managing ICT for minimising risk as opposed to maximising business opportunity. The value of ICT was perceived primarily as a means to optimise operational efficiency (a ‘cost center’), and in incrementally enhancing business capabilities (a ‘service centre’). There were virtually no views expressing the need for engaging in higher risk ICT investments to maximise opportunities, i.e., the approach towards ICT investment as a profit or an investment centre, something traditionally perceived as more strategic and pronounced in the dot-com boom era. Although the distinction between the four value centres is analytical (in any organisation a combination of all four centres are present at any time), however in our analysis we bring the dominant centres to the foreground in order to render the strategic image of the organisation visible.

A simplistic capitalist ideology implies that markets are built on the assumption of discontinuity, in other words encouraging new entrants to produce superior results and deliver value by remorselessly replacing weak performers that consume wealth. Feeny and Ives (1997) suggest that only the adoption of radical new ideas can lead to business value else

the focus might shift too much on operating an existing idea a bit more efficiently. This fits well with the notion of ICT strategising as a process in which investments in specific ‘killer’ applications aligned with a clear technology vision are made, which allow the organisation to proactively traverse unexplored territory. However, the CIOs we interviewed expressed a clear intent for ICT investments to be user driven, incremental and open. How can we then make sense of the strategic imagery displayed by CIOs with executive powers to strategise, who seemed to focus on a more reactive and less risky role for ICT investment? Does this imply, as the title states, the death of strategy? What does strategy mean for these organisations and in what form does it exist? What can we learn about the whole issue of ICT strategising from this research?

One of the key lessons to be learnt is that the whole issue of strategy and strategising is highly contextual, temporal, differs significantly across firms and is positively influenced by shifts in the surrounding broader economic and technological ecologies much like Mintzberg’s (1998) ‘environmental school’. The proactive top-down decision making approach was very much characteristic of the dot-com boom era, which was informed by the strong belief in the radical power of good technology ideas. So much so that at the height of the boom, entrepreneurs not only set up companies, but also started incubator companies for the explicit purpose of mass-producing ideas, which in turn would lead to the mass-production of incubated companies, each with their own strategic idea. In its current avatar strategising seems to be a more bottom-up, short-term, incremental and organic activity focused on optimising organisational operations closely coordinated with users, and associated with cultivating infrastructures. Paradoxically, these manifestations are the ones IS scholars have identified as the most difficult to strategically evaluate (Dahlbom, 2000; Hanseth, 2000). This approach matches Ciborra’s (2002) call for strategising based on improvised recombining of organisational capabilities and technological possibilities from a platform of capabilities and possibilities. We are seeing that people are being put back in strategy. CIO’s don’t claim to be grand designers anymore. Strategy seems to be like a giant mosaic which one architect alone cannot complete.

The competitive environment faced by companies today is far different from that which gave birth to the concept of strategy some thirty years ago and while this rapidly shifting strategy environment has partially devalued some traditional tenets of strategy, it has also provided the impetus for much new thinking. Indeed the changing context of strategy has provoked a huge amount of thinking on the ‘content’ of strategy. The new themes in the strategy world include: foresight, knowledge, competencies, coalitions, networks, extra-market competition, and ecosystems (Hamel 2001:185). So in our view strategy is not dead; it is busy assuming new forms under the influence of the prevailing context of a bear market and organisational backlashes caused by too many broken technology promises. Indeed when the future was expected to follow relatively neat and linear patterns, strategy could be assigned a clear place

in the order of things. Now that the neatness has been upset, new and broader perspectives on strategy are necessary. What then are the implications of this newer hybrid, low risk, and incremental approach to ICT strategizing?

Perhaps we can say it is one way of coping with the uncertainties of seemingly opposing yet concurrent requirements of low cost, flexibility *and* competitive advantage. This is achieved by enabling and empowering users to ‘pull’ ICT to suit their changing work requirements, to improvise and take ownership and to enable self-service. There is an increasing tendency to manage ICT as infrastructures. Our data suggests that many CIOs believe value can not be derived as before by simply linking and automating business processes through ICT. Rather they are learning how to benefit from ICT by developing a competency in creating and evolving enterprise-wide ICT infrastructures. Indeed Carr (2003) suggests provocatively, that as ICT have become highly commoditised they ‘don’t matter’ anymore. Carr maintains that although ICTs continue to affect the broader macroeconomic forces affecting a firm they have lost the proprietary characteristics that hitherto restricted a firm’s competitors from catching up thereby diminishing their potential for providing strategic differentiation,. It could be argued that in such a situation the imperative shifts from ‘killer apps’ to the provision of shared infrastructures at the minimum risk and lowest cost. Quah & Doyle (2002) make a similar point by suggesting that information processing like electrification matches the definition of a General Purpose Technology (GPT) which would eventually have a much wider ‘yeast’ like impact than the narrow and specific process/industry focused ‘mushroom’ like impact we have hitherto been witness to. This is not to suggest that significant reorganisation would not take place across a variety of industries or that there is less scope for big improvements or to question the value of technological innovation. Much like electricity, ICT are now indispensable but the manner in which they have to be managed and woven amidst people, processes and structures is what requires a change of mindset.

Our preliminary data seems to suggest this change in mindset for managing ICT, however it is difficult to ascertain whether this is a genuine widespread change or simply another trend supporting the viewpoint that markets are inherently irrational and infectious (Shiller 2001). Indeed, White (1981) refers to an ‘a capella’ affect in which market communities fall into a habit of constant observation, mimicking each other so that they are in harmony and can mitigate the effects of the turbulence that the environment has inflicted on them.

Our empirical material though highlights the use of diverse perspectives and methods of perceiving value by various stakeholders. For instance we noted with interest that the respondents we surveyed came from very diverse and multidisciplinary backgrounds spanning Biochemistry, Finance, Economics and Technology. This goes back to the issue of ICT and business strategy alignment, reinforcing the need to cultivate ‘value skills’ amongst professionals in addition to their technical ones, skills that support such professionals in

connecting with their customers and internal stakeholders thus fostering both business and ICT ownership (Denning and Dunham, 2001). Stark (2000) believes that the challenge for the modern firm, whether it is a post socialist firm coping with the uncertainties of system change or a digital firm coping with uncertainties of changing strategy horizons, is to cultivate a pragmatic reflexivity enabling the recombination and redefinition of assets as necessary. Such firms ('heterarchies') are flattened hierarchies of competing and coexisting value systems that can organise diverse and distributed sources of internal intelligence to create active and sustained engagements with competitive pressures. These value skills build on the assumption that there is more than one way to organise, label, interpret and evaluate the same or similar activity much like ongoing skilful conversations amongst involved participants (Introna, 2002).

In conclusion we do not suggest at all, that it is only during good times that CIOs should invest for the long term and focus on innovation. There is far too much uncertainty in the short term ecology of financial services to do that. In fact if the end goal is to create value, then the quest for innovation needs to proceed in good economies and bad. While it is important to take advantage of socio-demographic changes, significant discontinuities or new technologies, creating successful businesses cannot rest solely on our capacity to predict the future, rather we must build the competencies that enable us to redefine the present. Strategy therefore needs to be a continuous process- a dialog rather than a monolog. There is need to bring new voices, new conversations and focusing on creating the right conditions for a diverse population of strategies to emerge which nurture the capability to provide multiple, responsive, customised solutions. Experimentation, hedging and betting are still present, it is just that now they are focussed on a more ubiquitous interpretation of ICT infrastructures rather than specific risky 'killer apps'. Perhaps there is a growing realisation, that linking technology and business is a journey and not an event.

Identifier	FIRM INFORMATION		RESPONDENT INFORMATION
	Category/ Main Business Area/ Key Figures		Designation/ Background/ Roles
A (m) End User Firm	- Project Financing for banks, industries and businesses. Support privatisation, restructuring and raising capital - > 25 Countries, 20 Billion Euros Capital		- IT Director. > 20 yrs Experience - BioChemist(Phd), Business Management, Technical -Software Dev/ Quality Mgr/ Project Mgr/Strategic Planning
B (m) End User Firm	- Regulatory, Analysis, Coordination with Financial Institutions - Stability of Financial Systems- Domestic & International - Maintaining Integrity & Value of Currency/ Effectiveness of Fin Sys.		-Head-Management Services(UK), > 15 yrs experience -Economist -Economic Forecasting/ Fin. Mkts/ Security Settlement
C (m) End User Firm	- Leading Stock Exchange - Company Services, Trading Services, Trading Environment & Information Services through >100,000 installed terminals in over 100 countries worldwide, Markets Regulation		-Head IT Operations, > 20 yrs experience -Technical -Software Dev/ Programme Mgmt/ Consulting/ Managing Operational Relationships
D (m) End User Firm	- Corp. & Markets, Real Estate Finance, Wealth Mgmt & Retail Banking One of the largest Banks in Europe. With > 50000 employees > 2,000 branch offices and over multiple million customers,		-Head of Systems, > 20 yrs experience - Technical/ Computing - Software Dev/ Project Mgmt/ Pensions& Insurance
E (m) End User Firm	-Corporate and resource banking, treasury, investment banking, fund management, private banking and trust services -amongst the world's largest privately-owned banks, > 30 countries		-Group Head of Information Systems, > 20 yrs experience - Technical -Group Director/ Expert Advisor to EC/ Strategy/Implementn
F (m) End User Firm	- One the Worlds Leading ReInsurer, also in Primary Insurance, Asset Management and other Financial Services - 60 Locations Worldwide, > 5000 Employees. (study at UK Life Branch)		-Head IT Operations, > 22 yrs experience -IT & Finance(Insurance) - Business Support/ Bus. Planning/ IT
G (m) End User Firm	- One of the worlds largest Asset Management Co's, with £500Billion -funds in mgmt., for prestigious clients. Eg More than 50% of UK FTSE - 3300 employees across 19 countries		- CTO - Business & Strategy - IB/ Technologist/ Group Head E-Technology/Dot Coms
X (m) Independent Practitioner	Group Dir. Global Supplier of IT & Communications Support Services, ex Founder & Executive Chairman of CMG, ex Deputy Chairman FI Group PLC, Founder President UK & European Computing Services Associations. > 45 yrs experience pan Europe, USA, UK		
Y (f) Independent Practitioner	Director IT Strategic Consultancy, Start up member-Specialist Software Company, ex IS Director large Telecom Company, ex IS Manager very large Food Processing Firm. > 26 yrs experience across Strategy, Programme Mgmt, Budgetary Mgmt, Customer Service, Exploiting IT, Process Re-engineering. Phd Mathematics		
Z (m) Independent Practitioner	ex IT Director UK's Largest Retailer(Food) & also non food, worldwide 979 stores, 260,000 employees, across 10 markets. Turnover 23Billion £. Also into Personal Finance= 2.5 Million Customer Accounts. Set up one of the worlds most advanced On-line Grocery stores. > 35 yrs experience with Managing IT, System Dev etc. Computing Background		

Table 1: Respondent Profiles

Identifier	Description of ICT	Management Approach to ICT
	Diversity of Services/User Roles Supported	ICT Value, Strategy, Assessment & Articulation
A (m) End User Firm	<ul style="list-style-type: none"> - Technical eg: Client Server Technologies, MIS, Data Warehousing. Generally in terms of capability of Systems - User Roles/ Tasks well defined. However a transition was observed with the maturation of Business. - Services mainly Networking, Computational, Adaptive 	<ul style="list-style-type: none"> - Mainly Cost Center(Operational, reduce Risk) - Service Center (supporting business mandate & strategy) - Monthly report based on simplified Balanced Scorecard approach Fuzzy...mix of Financial & People figures. ROI & Business Case argument for new projects at personal level(relationship based) - No continuous 'life cycle' evaluation approach. Only at beginning & end ...but not fed through any process to make value visible.
B (m) End User Firm	<ul style="list-style-type: none"> - Characterised by '4 foci of IT use' across business lines Supporting KW's, Financial mkts, Payment systems, central services & administrative supporting functions - User Roles/Tasks mainly well defined - Services Computational, Adaptive, Networking 	<ul style="list-style-type: none"> - Mainly Cost Centre(maintaining & running Critical systems) - Service Centre-enabling Bus Change(remodel bus. Processes) - Benefits & Judgement focussed. Opportunity Costs & Risk Averseness consideration: Operational, Financial, Reputation - Cross sectional team IT, Finance, Business Groups decide for new. - Review of Time, Cost, Benefits for new initiatives at start, quarter & end. No optimisation. For big projects 'Benefits Delivery Mgr'
C (m) End User Firm	<ul style="list-style-type: none"> - Characterised across business lines: Trading Sys, Info. Distribution Sys, Regulatory News Sys, Mkt Surveillance Downstream & Support systems -User Roles/tasks: described in terms of Internal users, operational users & external users for whom reqts change - Services mainly Computational, Networking 	<ul style="list-style-type: none"> - Cost & Service Center (IT Operations outsourced as a partnership) Managing delivery of services, relationships (SLA's) to support bus. - Benefits articulated in financial terms, based on CBA reports everything quantifiable' approach, link transactions to opportunity costs, customer satisfaction etc - evaluation predominantly at beginning, though the 'content' of projects in terms of meeting user needs is gauged at the end also.
D (m) End User Firm	<ul style="list-style-type: none"> - Description in terms of Architectures: Front, Back & Middle office & the applications lying within each layer. - user roles described in terms of Product groups - Services mainly computational, Networking 	<ul style="list-style-type: none"> - Cost & Service Center(Providing stable platforms upon which Applications supporting business be 'bolted' (IT Insourced here) supporting businesses can be 'bolted' on. - Articulate value in terms of KPI(key performance indicators) which have been agreed with different User Depts. Through SLA's - CBA approach supplemented with Project Assessment methods - Evaluation done regularly, ongoing basis by capturing process parameters(eg customer call handling data) matching it to KPI's
E (m) End User Firm	<ul style="list-style-type: none"> - as Business service sys. & Infrastructure service sys, which are generic & interact with all business lines: treasury banking, investment banking - Services mainly networking, adaptive, computational 	<ul style="list-style-type: none"> - Cost,Service & Investment Center(Delivery & operation of services, understanding requirements, managing risk, provide comp. Adv. - simple CBA approach(costs & revenue focussed), also looking at opportunity costs, technical & operational risks - new projects look at proof of concept (testing) - review of projects done to see implementation against time, cost & benefits but not all components evaluated.
F (m) End User Firm	<ul style="list-style-type: none"> - characterised as according to different group businesses also whether systems are third party or developed in-house, client server architecture & technical description also - Services mainly computational, networking 	<ul style="list-style-type: none"> - Cost Center(It's a backoffice function/ infrastructure) -earlier based on CBA, now monthly reporting in terms of depicting ' control' - New projects consider opportunity costs & act of faith type-qualitat.
G (m) End User Firm	<ul style="list-style-type: none"> - in terms of 'vertical business lines' such as client facing division, investing platforms, operational platform, and at the bottom is 'horizontal common services' - user roles/tasks: described as users of executiveware, customerware, trading related & operational. Tasks to do with managing relationships & changing requirements also 	<ul style="list-style-type: none"> - Cost, Investment & Service Center (provide world class tech. service ideas to the businesses to enable profit maximisation.) - Technology Portfolio method, well defined and reviewed at regular intervals. - each portfolio governed by separate set of qualitative rules - cross functional team evaluate business cases. - tendency to take average & compare with Benchmarks for evaluation
X, Y Z Independ Practition	<p>NA</p> <p>Note: Summary for respondents X, Y have been excluded to avoid redundancy as they were quite similar to Z</p>	<ul style="list-style-type: none"> - Cost , Service & Investment Center (Operations, Opportunities) - 'Factory' approach to operational elements, otherwise a Returns based approach which is tied in with Finance dept. - For new Proj. often 'capture' & present what customers are saying

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