Paradoxical effects of institutionalisation on the strategic awareness of technology in organisations

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\textbf{A B S T R A C T}

Much of the IS literature focuses on the positive impacts of the institutionalisation of IT in business routines; that is it assumes that it is good for IT to become embedded within an organisation. In this paper, however, we explore the ‘dark side’ of such institutionalisation, demonstrating how a technology once institutionalised can become invisible to management so that its strategic potential is under-exploited while at the same time business risks associated with the IT are ignored. We demonstrate this through an in-depth longitudinal case study which follows the development of an intranet in a bank in the UK over a period of 5 years. By following changes to the management of the intranet and its continuous embedding in work practices, the paper identifies six characteristics of institutionalised systems and highlights five risks for a business. The paper contributes to the literature in IS by exploring the impact for businesses from the apparent paradox between institutionalisation and awareness of the strategic value of technology in organisations.

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1. Introduction

The role of technology in contributing to institutional stability has often been underplayed in the institutional theory literature, even though technology, and especially Information Technology, “makes organising durable” (Czarniawska, 2008). This is especially the case in relation to the organisation/management literature where an institutional theory lens is very prevalent. Some IS literature has focused on the processes surrounding the institutionalisation of a particular technology (Mignerat and Rivard, 2009) but it has tended to underplay the longer-term consequences of this, assuming that organisations become more efficient when technology is routinely integrated into work practices (i.e., institutionalised) as long as it is aligned with the functioning of the organisation (Avison et al., 2004; Chan et al., 1997; Cragg et al., 2002; Galliers, 1991; Kearns and Lederer, 2000). In this paper we address this gap in the IS literature, created by the failure to track the events and outcomes of a technology over time. In doing this, we explore some of the downsides associated with how technology makes organising durable. We show how, as new technology (in this case an intranet) becomes more deeply intertwined in business processes and routines, it also tends to lose senior management attention who hence become increasingly “mindless” about its strategic value (Swanson and Ramiller, 2004) which can increase business risk and also lead to under-exploitation. We explore this paradoxical relationship between embeddedness and the strategic awareness of the value of technology by looking at the longer-term consequences of the institutionalisation of intranet technology in a UK bank.
Much of the IS literature ignores this paradox because it adopts an uncritical stance towards the effects and processes of institutionalisation, assuming that the deeper embedding of a particular IT is predominantly a good thing. There are some exceptions to this positive orientation about the outcomes of technology adoption, for example, in the literature on the unintended consequences of technology (Robey and Boudreau, 1999). However, this literature focuses on the initial consequences of implementing a new technology, rather than on consequences that can emerge later in the technology lifecycle. More recently the IS literature has suggested that as technology becomes more intricate to the functioning of organisations and to the routine behaviours of employees, the social and technical dimensions develop to mutually constitute the ‘sociomateriality’ of an organisation (Orrlikowski, 2007). This new conceptualisation in IS research has raised subtle but highly relevant questions, for example about the ontological separation between technology and the social context that influences its use, but like the previous research streams it has not explored the possible implications of the social and technical entanglement on the strategic management of technology in organisations. This study addresses this gap in the literature, addressing as the central question: “What is the impact of the institutionalisation of a particular IT (in this case an intranet) on the strategic awareness and use of this IT in an organisation?”

The paper is not intended to develop new theory; its main contribution is in connecting different strands in the literature to draw attention to this paradoxical relationship between the institutionalisation of IT and awareness of its strategic value in organisations. Drawing on institutional theory, the paper also contributes with a characterisation of institutionalised IT and a typology of associated risks. It also provides some recommendations for practice.

The paper is divided into five main parts. The next section reviews literature to reveal a paradox suggesting that as technology becomes more embedded and critical to the business; it also becomes less visible to senior management hindering its strategic development. This section also highlights a gap in the literature in understanding risks and dangers of institutionalisation in the management of technology in organisations. The following section describes intranet systems, used as the empirical setting for this study. We then discuss our research methods. The following section reveals our case findings and the final section summarises and concludes this study.

2. An institutionalisation paradox

Institutional literature explains the generation and reproduction of habits and routines in social settings (Zucker, 1987). There are many variants of institutional theory but Clegg (1990) suggests that it is important to recognise that there are two distinct ‘types’ of institutional theorist: those who focus on macro isomorphic processes viewing institutionalisation as a property of the environment which restricts options and leads to the increasing convergence of behaviour across an organisational field (e.g., Meyer and Rowan, 1977; DiMaggio and Powell, 1983); and those who focus on micro processes through which practices become institutionalised within an organisation (e.g., Tolbert and Zucker, 1996). In this paper we are concerned with the latter and more specifically with the strategic consequences to organisations of the development of institutionalised practices. Our approach thus recognises the embeddedness of technology as part of, and not separate from, an institutional effect or process, so that we apply institutionalist concepts to IS research by contextualizing the IT artefact as an integral part of institutional change (Goodman and Sproull, 1990).

Despite ambiguity still prevailing about the processes underpinning the development of institutionalised practices (Currie and Swanson, 2009), there is general agreement that technology becomes institutionalised in organisations when it becomes taken-for-granted and part of the routines and habits of employees. Habits reduce the need for cognitive effort, because they lead to following the ‘normal’ or accepted way of doing something, rather than having to think through a response to each event encountered (Berger and Luckmann, 1967; Schutz, 1962). However, institutional theorists are concerned not just with individual habits, but also with habits that are generalised so that all actors in a social setting accept the habit as the appropriate way to behave in relation to a recurring situation (Zucker, 1977, 1986). For example, Tolbert and Zucker (1996) describe the process of institutionalisation in three sequential stages: (1) habitualisation, (2) objectification and (3) sedimentation, respectively. As sedimentation is reached, facts and routines become externalised (Berger and Luckmann, 1967) and are easily and naturally transmitted across time (continuity or “depth”) and space (across groups or “width”). Sedimentation is therefore the process by which typifications (repeated patterns of behaviour) acquire a “reality of their own” as ‘social facts’ (Zucker, 1977). This view of institutionalisation follows Scott’s (2001) third institutional pillar, the cognitive-cultural pillar.

While there is a growing interest in the IS field on processes of institutionalisation, the focus has tended to be on institutional dimensions at the macro-level (Auyerou, 2002), and even here the coverage of institutionalisation is still scarce compared to other fields in social science research. For example, Weerakkody et al. (2009) concluded that the IS field has not gone beyond applying theoretical concepts and suggested that further theoretical development and adaptation would be desirable. Their review indicates that the majority of the research in IS looks at the institutionalisation of specific technologies such as ERP (Liang et al., 2007; Damsgaard and Lyytinen, 2001). Mignerat and Rivard (2009) provide an in-depth analysis of 53 articles taking an institutional perspective to study IS related phenomena. They also concluded that there is still much to be explored and that more studies are needed to understand longitudinal implications of IT diffusion and “to investigate situations where the targets of institutional pressures enact responses other than the acquiescence strategy” (Mignerat and Rivard, 2009, p. 389). They suggest that the IS literature to-date has been relatively passive in the way it uses institutional theory and has not sufficiently explored its underlying assumptions. They suggest that future studies should not take-for-granted established pre-conceptions about the effects and processes of institutionalisation.
One assumption that has become established in the literature is the positive nature of institutionalisation for organisations. In this study we challenge this view by exploring potential negative consequences of institutionalisation to the strategic management of technology in organisations. We review three streams of literature in the IS field that deal with processes of appropriation and embedding of technology in organisational settings. These three streams of literature do not all make an explicit link to institutional theory, but they share in common an underlying assumption that the embedding of technology in organisations is inherently good.

The first stream of research relevant to conceptualising IT institutionalisation in an organisation is the IS alignment literature, which suggests that a greater degree of congruence between the IT capabilities of an organisation and its strategic objectives will increase efficiency and improve performance (Luftman et al., 1993). Greater alignment is achieved by increasing the “coherence between the organisational requirements and expectations and the delivery capability within the IS function” (Henderson and Venkatraman, 1999, p. 476). This requires ongoing changes to the structure, processes and governance of the organisation (Broadbent and Weill, 1993) through a process of ‘mutual adaptation’ (Benbya and McKelvey (2006, p. 286). An underlying assumption in this body of work is that the alignment and assimilation of technology in the functioning of organisations improves effectiveness (Chan and Reich, 2007). However, while achieving alignment may be desirable to increase efficiency, it may also lead to too much specialisation and lack of flexibility to respond to changes in the business environment.

The second related body of research is the diffusion of technology. This suggests that the process of adoption of an innovation in a social setting follows a five-step process (Rogers, 1962, 2003). Individuals move from being simply confronted with the prospect of using a new technology towards greater knowledge of its use and functionality, and finally to full exploitation of its benefits – confirmation stage. The diffusion process thus ends when the technology has become embedded (i.e., institutionalised) in the routines and ‘normal’ behaviours of individuals. Similarly, Cooper and Zmud (1990) argue that the successful implementation of IT concludes when adopted technology has become infused in its organisational “work contexts”. Kwon and Zmud (1987, p. 233) say that “incorporation occurs when the innovation becomes embedded within an organisation’s routine and when the innovation is being applied to its full potential within an organisation”. Terms such as “incorporation”, “embedding” and “adoption” used in this literature, all reflect characteristics of institutionalised systems in organisations. The main conclusion from a review of this body of work is that it also takes the stance that the embedding of technology is good for organisations.

The third body of work takes a longitudinal approach to explain the natural evolution of technology in organisations and portrays the ultimate stage as full integration of technology in the work environment. The stages of growth model (Nolan, 1973, 1979) as applied to the IS field (Gibson and Nolan, 1974) indicates that although initially the benefits and functions of the technology are not fully understood by organisations, over time this can be followed by a stage of contagion and proliferation and subsequently by the need to increase control. This is then followed by a stage of integration and finally full maturity (Galliers and Sutherland, 1991) as the technology finally becomes infused (Sullivan, 1985, p. 5). In this final stage, technologies such as intranets, are fully embedded in the functioning of the organisation (Damsgaard and Scheepers, 2000; Duane and Finnegan, 2003).

Despite the lack of explicit reference to institutional theory, the concept of institutionalisation is present in these three bodies of research through concepts such as infusion, incorporation, integration and embeddedness. All these streams of literature share the view that the progressive “infusion” and institutionalisation of technology in organisations brings benefits for organisations, as suggested by Purvis et al. (2001, p. 117): “in order to gain the value-adding potential of organisational knowledge, it is not sufficient to simply adopt and deploy IT-enabled knowledge platforms. Significant business value will only be derived from these knowledge platforms when their implicit functionality is assimilated within the ongoing actions of individuals and teams”. Lamb and Davidson (2005, p. 79) studying the adoption of intranet technology echo this assertion: “For many managers and researchers […] standardisation and integration of intranets is a “higher” stage of technological maturity that the firm should vigorously pursue”. What this literature tends to ignore is that as technology becomes institutionalised, it also becomes more difficult for actors to envision or disentangle the relationship between technology and its strategic value, particularly as stable working practices obscure the effects or impact of technology. For example, Sabherwal and Chan (2001, p. 182) suggest, based on Miller (1996, p. 510), that an “overemphasis on alignment could constrain an organisation’s outlook, inhibiting the recognition of alternative perspectives and reducing the ability to recognise and respond to the need for change”. Thus, the more entangled the technology becomes with organisational practices, the more rigid and difficult it is to adapt and respond to changes in markets and business environment. Oliver (1991, p. 175) articulates this by saying that “conformity to the institutional environment can also threaten long-run survival by imposing structural and procedural rigidities on the organisation that inhibit its ability to adapt and respond to future unforeseen contingencies as they arise in the environment”. Even organisations that have achieved alignment face sudden changes in industry conditions, and in that case they may find it necessary to make revolutionary changes (Greenwood and Hinings, 1996).

This ‘darker side’ (Kahn et al., 2007) of the institutionalisation of technology, where unintended consequences may have paradoxical or contradictory impacts within the organisation, is hardly noticed in the IS academic research. The work of King et al. (1994) on the institutional impact on innovation and recent studies exploring processes of deinstitutionalisation (Mattila et al, 2010; Nicholson and Sahay, 2009) have hinted that institutionalisation is not a permanent feature of organisational life. However, the literature lacks a balanced perspective. Our research addresses this generalised agnostic view of the potential negative implications of institutionalisation to the strategic management of technology in organisations. Furthermore, the above streams of research characterise the final stage of institutionalisation as related to taken-for-grantedness,
but they do not characterise the properties of institutionalised IT. Technology progressively becomes part of the daily routines of employees and acquires a status as rule-like social fact (Zucker, 1987). At this stage, Silva and Backhouse (1997, p. 390) say that information systems “are no longer considered as innovations, but as unnoticed and unremarkable tools that people take-for-granted in doing their work. Institutionalised information systems are noticed only when they break down”. Our empirical work will aim to identify what an institutionalised system looks like in an attempt to draw out the sociomaterial characteristics of institutionalisation, that is how the social and technical are entangled once an intranet is institutionalised.

3. Intranets as emergent and embedded systems

In the early years of intranet adoption, studies demonstrated that organisations struggled to control their development with the result that many companies had multiple, unconnected and disparate intranets that had been developed in an ad hoc manner by different organisational groups (Newell et al., 2001). This chaotic development was considered by many to be problematic especially because it made it very difficult to find information across the array of very different intranet sites within an organisation. Today, however, the situation is very different, with intranets now so ubiquitous in organisations that it is hard to imagine any large organisation operating without one. Intranets are now expected to offer employees a central gateway to a variety of organisational resources, including services such as email, corporate information, workflow management systems, collaborative groupware tools, and databases (Lamb and Davidson, 2005) and today social media such as wikis, blogs and social networking tools are also included on the corporate intranet. Intranets are now common in all kinds of organisations and are used to support internal information sharing, collaboration and self-servicing of key processes.

The emergent nature of intranets makes this technology highly suitable to study the paradoxical effects of institutionalisation in organisational practices. Lamb and Davidson (2005) suggest that the development of intranets within organisations (from a chaotic mixture of independent intranets to an integrated corporate intranet) can be explained as a process of institutionalisation. We also use this institutional lens in this paper but to explore the relationship between intranets and strategy. In doing this, we follow the advice of (Robey and Boudreau, 1999) to consider the consequences of IT using an oppositional (rather than deterministic) logic, considering forces that are simultaneously promoting and opposing organisational change. From this logic of opposition perspective, an intranet may not enhance information processing capabilities and business effectiveness (Premkumar et al., 2005), nor “improve the ability to deliver the right information, to the right people at the right time” (Curry and Stancich, 2000). Rather, the impact of intranet functionality on an organisation will be the outcome of the specific interplay between the technology and the behaviour of individuals within an organisation (Baptista, 2009; Orlikowski, 1992). For example, Ruppel and Harrington (2001) noted that because an intranet is introduced in an organisation it does not automatically mean that old ways of communicating, including using paper-based documents will be abandoned, even if they are less efficient.

Unlike other types of technologies such as ERP or CRM, intranet technology is open-ended and serves no specific or well-defined business function (Damsgaard and Scheepers, 1999). The development of intranets does not start with a clear view of what the system “should or should not do” (Bansler et al., 2000). Their development is typically unplanned, unpredictable and improvised (Ciborra and Lanzara, 1994) and is often decided and shaped in response to the needs of the community of users (Newell et al., 2001; Newell et al., 2000a) and the dominant frames of reference in an organisation (Ciborra and Lanzara, 1994; Orlikowski, 1992). Thus, it is difficult to predict how intranets will evolve since they have a tendency to ‘drift’ (Ciborra and Associates, 2000).

At their core, intranets are formed by a technical infrastructure that contains information and rules that shape the way information and services are displayed and accessible to users. This technical platform could be based simply on html code or more advanced “Content Management Systems” and “Document Management Systems”, and more recently social media based technologies. Newell et al. (2000a) name this technical layer of intranets as infrastructure but argue that two additional layers also form intranets. The infrastructure layer comprises the rules and standards governing the development and use of the intranet. At this layer, intranets are formed by the different roles involved in the management of the environment (for example: publisher, author, site owner, content reviewer), their associated responsibilities and the policies and standards shaping the use of the system. Ongoing changes to the scope and function of the intranet require ongoing adaptations to this infrastructure layer. The infocultural layer represents the impact of the intranet on the behaviour and social fabric of the organisation. At this level, the intranet entails the effects of the information and design of the intranet in employee decision-making. For example, the infocultural layer includes how intranets emerge and influence employee empowerment and sense of belonging as well as willingness to trust colleagues and organisational commitment (Baptista et al., 2006).

Star and Ruhleder (1996) emphasise the emergent and complex nature of infrastructural technology such as intranets, by arguing that it is not helpful to see it as something that is built, maintained and then invisibly merged into the background. An infrastructure technology, they argue, is a tool that ‘emerges in situ’, taking on different meanings and attributes, depending on how it is used in practice by particular communities (Star and Ruhleder, 1996). They provide the example of a blind person, who cannot use the internet (or intranet) without a Braille terminal. In this sense, infrastructure needs to be seen from a relational perspective – it is infrastructure in relation to supporting particular work practices of particular communities in a particular context and so has the potential to emerge in different guises over time and across space. Changes in work practices go hand-in-hand with changes in the supporting infrastructural technology, but not in a causal/deterministic kind of way. Orlikowski (2002) depicts this as a constantly evolving mutual entanglement between the social and the
technological. We can therefore describe intranets as emergent technologies that will, by dint of being deployed in practice, evolve relationally through use even while they may come to represent deeply embedded infrastructures. Thus, as intranets evolve, they become more intertwined with the functioning of organisations (Damsgaard and Scheepers, 2000; Duane and Finnegan, 2003). This means that while a major disjuncture in intranet development (e.g., the advent of Web 2.0 fostering the use of blogs, wikis and social networking services inside organisations) may promote organisations to rethink the strategic value of their intranets, between such disjunctions, organisations can lose sight of the strategic potential that could be derived from their intranet. This paper therefore explores how the strategic potential of an emergent technology, such as an intranet, can be under-exploited because it becomes “part of the furniture”. We draw upon institutional theory, focusing on the impact of institutionalisation on the strategic awareness of IT.

4. Research question and methods

This research studies the effects of the gradual evolution of an emergent technology through use, exploring how this may at times change its perceived strategic value. More specifically, we study the relationship between the institutionalisation of an intranet in a bank in the UK over a period of 5 years and the strategic awareness given to the intranet in this same period. The scope of analysis is clearly focused on intranets, however as they become increasingly integrated with other systems in organisations the technical boundaries become more blurred. Nevertheless, from a governance perspective the boundaries between them and other systems (such as CRM and ERP systems) are clearly demarcated by the range of responsibilities of the intranet team. Thus, for the purpose of this study, the scope of analysis is determined by the typical remit of intranet teams in governing the publishing of information and management of intranet services in organisations.

Our central research question is: “What is the impact of the institutionalisation of an intranet on the strategic awareness and use of this IT in an organisation?” In looking at this question, our study does not presume a linear pathway for technology change, since intranet technologies may be more or less tightly coupled with existing working practices at different periods in time. For example, whereas managers may perceive intranets as strategically important and business critical at the initial implementation stage, their views may consciously or sub-consciously change over time, particularly as their influence on the day-to-day involvement with intranets changes.

The research was therefore designed to capture the relationship between ongoing changes to an intranet and the strategic focus on this technology in the organisation. To achieve this objective, this study follows the historical evolution of an intranet in a bank in the UK over a five-year period (from 1999 until 2005) aiming to capture changes in the technology and the associated work practices over this period of time as well as the strategic focus. It follows Lee and Baskerville’s (2003) framework of research methods to develop a detailed and rich description of a unique case with theory. It adopts a longitudinal approach in order to study the relationship between institutionalisation and strategic awareness of the intranet over time. This approach allows the examination of gradual changes to the technology and associated organisational practices (Pettigrew, 1990).

The study uses qualitative methods and follows the interpretive tradition to develop understanding of this phenomenon. It adopts a single, exploratory longitudinal in-depth case study research strategy (Yin, 1994) and follows a series of other qualitative studies of intranets (Lamb, 2002; Newell et al., 2000a; Newell et al., 2000b; Newell et al., 1999). The focus of the study on employee perceptions of the intranet as part of the organisational environment makes this study inherently phenomenological as it aims to study the essence and meaning that people attached to the system as they used it as part of their normal everyday lives. A phenomenological study “describes the meaning of the lived experiences for several individuals about the concepts of the phenomenon” (Creswell, 1998, p. 51). Phenomenology was used to capture gradual changes to employee perception and behaviour as technology became more embedded in work practices and organisational life.

The method used for data collection and analysis follows Markus (1983), using various data sources to understand the feelings of stakeholders throughout the history of the implementation of the system. Based on the data, the history of the intranet at Alliance and Leicester (A&L) from late 1999 until 2005 is reconstructed. The collection of data included regular interviews with a representative panel of intranet stakeholders over a two-year period as well as ongoing analysis of documentation. The panel of interviewees included the intranet team as well as a number of stakeholders and employees of the bank. Most of the interviews followed a semi-structured methodology to keep focus on relevant issues and lasted about one hour. All interviews were recorded and transcribed for qualitative analysis. A series of focus groups were also conducted to capture the views of employees from various areas of the organisation. Groups represented in the focus groups included call centre staff, staff working remotely and staff from other business units. A series of interviews with staff in branches was also conducted to ensure broad representation of views. Overall, a total of 40 interviews were conducted and most of them recorded and transcribed. A total of 93 documents were collected, catalogued and analysed covering new policies and managerial documentation, including meeting minutes from key steering bodies and management team meetings over the 5 years period of analysis. Backup copies of the intranet were also analysed at different points in time. All the data was recorded and catalogued according to a timeline so that changes in the management and functionality of the intranet were appropriately captured. There were no restrictions on the access to data and the longitudinal nature of the study allowed for several iterations of analysis and interpretation of the data.

This hermeneutical approach is coherent with the aim to study the gradual embedding of the technology in work practices and ultimately how it becomes taken-for-granted by employees in an organisation, as posited by Boland “the output of
an information system is an unfamiliar text to be read, interpreted and made meaningful by those who use it in ways that will always surpass any clear representation the system’s creators had in mind… studying that process of interpretation is the hermeneutic task for information systems research” (Boland, 1985, p. 440). The longitudinal nature of this study allowed the tracking of changes in behaviour over time. This was important because “an understanding of a particular social system is dependent upon the monitoring of these accommodative, adaptive and negotiated responses” (Vitalari, 1985, p. 250). It also enabled an iterative process in which exploratory and target data collection stages could be continually revisited. Thus, learning was incorporated into successive cycles of data collection, thus improving the accuracy of interpretation and analysis. Furthermore, the longitudinal analysis allowed us to “see” changes that require longer reaction cycles, such as months and years, since social settings do not change “by the minute or hour” and an opportunity to capture the complexity of events and the inherent relationships of the phenomena. Given our focus on the consequences of institutionalisation in this paper we only summarise our processual analysis of the institutionalisation process; further details of this are available in Baptista (2009).

5. Case findings

Alliance and Leicester (A&L), a bank in the UK, was chosen as the empirical setting for this research. In 2005 A&L employed 8500 staff offering a range of banking services from cash handling, retail and commercial banking. The bank positioned itself in the market as a “Direct bank with high street presence”. This meant that its primary channel of communication was telephone and the Internet but it also offered branch service for customers that valued face-to-face interaction. As part of this strategy, A&L had since 2000 invested significantly in technology, which included the development of an intranet to support the communication of the new business strategy, named “Strategy 2000”.

This new emphasis on direct channels and supporting technology to reduce costs coincided with the appointment of a new Chairman of the Board in 1999 and later in 2001 of a new CEO. These changes at the helm of the company marked a significant step change in the management style and culture of the company. A&L had grown through an intense process of mergers and acquisitions in the 1990s so the culture was still very diverse. Employees perceived the bank to be bureaucratic and “run by accountants, project managers and risk managers” arguing that it “has policies and procedures for everything – we even have an Official Christmas Decorations policy”. The new management team established a priority to change the culture of the organisation to make it more collaborative, open and efficient.

At the core of this new emphasis was the development of a new intranet system, which was initially commissioned towards the end of 1999 as a communication channel to support the delivery of the new business strategy. Table 1 summarises the evolution of the intranet over the period of analysis between 1999 and 2005.

As Table 1 demonstrates, by 2005 the intranet was institutionalised within A&L, being (a) widely recognised as part of the normal functioning of the bank and (b) part of the formal policies governing the operating procedures of the bank.

While these properties of “taken-for-grantedness”, embeddedness and invisibility are evident in the institutional literature, our empirical data also allowed us to identify other features that were evident once the intranet was institutionalised in the bank in 2005. These features are presented in Table 2, which identifies literature supporting each of the identified features alongside evidence from the case. This typology is new because it focuses on the sociomaterial properties of the technology rather than the behaviour and perceptions associated with its use. Thus, once institutionalised, the intranet became the “scaffold” (Orlikowski, 2007) for daily work practice to the point where the technology and users were so deeply entangled that it was difficult to imagine how they could be separated. The typology in this table is offered as one of our

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<th>Year</th>
<th>A&amp;L intranet evolution</th>
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<td>1999–2000</td>
<td>The idea for developing an intranet is first discussed in the IT department but not taken forward. A change in leadership team of A&amp;L results in the development of the intranet to communicate a new business strategy and support the “e-enabling” of the business. A consultancy report by BT defines a governance model based on a small central management team and a devolved publishing model.</td>
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<td>2001–2002</td>
<td>Media-aware departments develop their own intranet sites. Adoption rate remains low until the internal company magazine “SpectrumLive” goes online. Business processes, such as HR, are migrated to the intranet, fostering adoption. The HR site becomes a role model for using the intranet to save costs and improve service. However, uncontrolled growth in content and the large number of publishers signals the need for more stringent governance and a revised information architecture and homepage.</td>
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<td>2003–2004</td>
<td>The growth in content and services means the intranet supports most of the business processes and internal services previously only available in paper. Three new services contribute to the development of familiarity and more deeply embed it in the normal routines of employees: “Classifieds”, “Announcements” and “Questions and Answers”. Additional layers of governance are enforced to ensure that the intranet is compliant with corporate and industry guidelines.</td>
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<td>2005</td>
<td>Governance is tightened to manage growth through policies and monitoring controls. Improving consistency of navigation and content across various sections of the intranet is the main driver. An external consultant is employed to work with publishers and site owners and a new Content Management System is considered needed to increase control and ensure consistency through the enforcement of templates and content workflow; the request for this is turned down. The intranet becomes formally part of the business critical infrastructure and is included in business contingency planning.</td>
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Table 1
Summary of the evolution of A&L’s intranet from its inception in 1999 until 2005.

Evolution of alliance and Leicester's intranet and role of IBF.
Table 2  
Characteristics of institutionalised systems.

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<th>Characteristics</th>
<th>Background to the concept</th>
<th>Evidence from A&amp;L</th>
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<td>Representative</td>
<td>Institutionalised technology is perceived to be exterior to the interests of individuals or of any particular group of organisational stakeholders. Berger and Luckmann (1967) suggest that the meaning of institutionalised behaviour becomes inter-subjective within a social setting and seen as independent of any personal interests (Berger and Luckmann (1967) on reification and objectivation).</td>
<td>All areas of the A&amp;L’s business were represented on the intranet in 2005. Information and news were published by employees across the organisation from various areas of the business and levels in the structure of the organisation. The CEO had his own site and blog but our data from 2005 shows that employees saw the intranet as representative of the organisation as whole and not biased to a senior management agenda.</td>
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<td>Formalised</td>
<td>Institutionalised technology becomes part of the formal functioning of organisations, therefore part of its regulative environment. It gains legitimacy by becoming perceived to be the “right” way of doing things in the organisation. This concept is grounded in Zucker’s (1977) definition of institutionalisation as the “embedding in formal structure of the organisation”. This is also grounded in Garfinkels (1963) work showing that formalisation contributes to the development of independence from self-interest and intersubjectivity of meaning – two characteristics of institutionalisation.</td>
<td>Over time governance structures surrounding the intranet became more formalised as it became more complex and embedded in ongoing business practices. More intranet policies were created and various new roles formalised. Simultaneously, other policies such as HR and the operational risk framework changed to incorporate the impact of the intranet on their functioning and the risk profile of the bank. This meant that over time the intranet became more intrinsic to the governance of the business and embedded in the formal functioning of the organisation.</td>
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<td>Functional</td>
<td>Technology is institutionalised when it is embedded and closely aligned with the ongoing functioning of the organisation. As suggested by the IS alignment literature, coherence and harmony foster the process of adoption and fusion between the technology and the organisation (Luffman et al., 1999; Smacznzy, 2001; Avison et al., 2004). Technology is institutionalised when it offers a comprehensive set of services that form a convenient and preferred method for doing things in the organisation.</td>
<td>By 2005, most of the information needed for employees to do their jobs and daily activities was being published online on the intranet and alternative media had been scaled down. A clear example was HR processes and information that migrated to the intranet leading to a reduction in the size of the telephone help line and regular newsletters. Over time, employees came to expect to find information and procedures on the intranet and by 2005 surveys indicated that the intranet was their preferred and most convenient source of information and work processes.</td>
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<td>Importance</td>
<td>Institutionalised technology becomes increasingly integrated in business processes as suggested in the stages of growth literature (Gibson and Nolan 1974; Sullivan 1985; Galliers and Sutherland, 1991). Technology is progressively used for important tasks and embedded in the core functioning of the organisation, thus becoming more important for the business. This is in-line with studies describing stages of growth of intranets in organisations (Damsgaard and Scheepers, 2000; Duane and Finnegan, 2003).</td>
<td>Since the launch of the HR site in 2002, several other functional and business divisions migrated their internal processes to the intranet. Moving internal services to the intranet was perceived to drive cost-savings and deliver a better experience to employees. Over time, many business processes were available only on the intranet and employees had to use it on a regular basis to perform key activities.</td>
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<td>Familiar aesthetics</td>
<td>Technology is institutionalised in organisations when it blends with other features of the organisation. Employees become familiar with it and perceive it to be a normal feature of everyday life and of their world known in common (Schutz, 1962). This sense of familiarity grows when the aesthetics of the technology are aligned with the symbols, visual properties and values intrinsic to the culture of the organisation. The diffusion of innovation literature uses the term “compatibility” to show that innovations that are compatible with the expectations of the users are adopted faster (Cooper and Zmud, 1990; Kwon and Zmud, 1987).</td>
<td>The visual design and navigation of the intranet changed over time to increasingly look and feel more in-line with other features of the organisation. By 2005 the intranet team had overhauled the intranet three times since its launch in 2000 in response to regular usability reports and user feedback. The intranet became more consistent in terms of the colour schemes used and its visual queues, to reflect the brand of A&amp;L. The top navigation and structure of the various sections of the intranet also changed regularly to position content where most employees expected to find it.</td>
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<tr>
<td>Ease of use</td>
<td>Institutionalised technology becomes easier and natural to use. As suggested by the technology adoption literature (Davis, 1989) technology is adopted when it becomes easy and natural to use by employees. This means that the use of the technology becomes intuitive and employees are not required to make conscious effort to make it deliver expected functionality.</td>
<td>The changes made to the interface of the intranet were also aimed at making the intranet easier to use. Improving the accessibility and findability of information and services to make the navigation of the intranet easier to understand was a major drive of the intranet team.</td>
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telephone, email, company magazine. The intranet in 2005 had become, as stated by a middle manager in the retail division “like the carpet, we no longer think about it”. One illustrative quote from an administrative employee exposes the high level of reliance on the intranet “If I went to another organisation that didn’t have all the information I need on the intranet, it would be quite daunting to know where to find it”. For this employee, the use of the intranet had become scripted in habitualised routines making it difficult to imagine normal work without this tool. However, as the intranet developed these institutional characteristics over time, there were also a number of important unforeseen impacts of this evolution on the management of the technology. We identified five impacts with a significant repercussion to operational risk of the bank, which are described next.

5.1. Intranet grew silently beyond its capacity

Over time the intranet grew exponentially in terms of number of users, content and services delivered. Its role also evolved to become a hub for many organisational resources and as this happened so the level of complexity increased with a growing number of links to other systems. The number of publishers grew fast from about 5 in 2001 to 70 in 2005 with a regular turnover requiring continuous training and a much more streamlined and standardised procedure to publish increasing numbers of webpages. The volume of content also grew exponentially as virtually all departments had their own site containing information, news and access to forms and documents. The basic intranet infrastructure also linked to advanced backend systems such as HR transactional software and to new applications developed in-house to manage room bookings, taxi sharing and a forms warehouse providing access online to all the company’s forms and standard operating procedures. Despite this significant expansion in scope and role of the intranet, the basic technical infrastructure remained the same. When it was first launched the intranet was based on simple HTML software to publish information. As its complexity and use grew over time, the in-house IT team had to keep developing patches and additional small applications to allow the intranet to expand and cope with this increased demand for capacity. A member of the intranet team said “We have to prioritise development. We receive many requests for new services and applications. Most of them make sense but are not viable because of the limitations of our infrastructure”. The intranet had grown silently without ongoing monitoring and planning for expansion so the infrastructure had been stretched to the limit as recognised by the IT team in 2004. Beyond the technical limitations of the existing solution, there were also constraints in terms of the ability to enforce controls and establish a common governance system. This was the case even though enforcing standard procedures had become critical as the intranet started to be used for unintended purposes.

5.2. Intranet used for unintended purposes

The intranet at A&L was not specifically designed for supporting work practices in the ways it was eventually used; rather people gradually developed the functionality and learned to use the intranet to support different aspects of their work practices. Thus, our case data shows that the intranet was used by all business functions in the bank. It also became expected that all employees would monitor news and information on the intranet regularly to keep up with changes in the business; this was actually enforced by only publishing corporate news on the intranet and removing the company magazine from print and reducing the face-to-face cascading of information. By policy all employees had to have access to the intranet either through desktops or public kiosks in branches and laptops to staff on the move. By 2005 A&L’s intranet was seen to play a fundamental role in the functioning of the organisation as described by the Head of Corporate Communications “I think the intranet has become fundamental to our business. It has grown to become the principle communication channel in the Group. But it is grown beyond that and it now has a number of critical activities run from it. I couldn’t imagine and certainly wouldn’t want to be running A&L without the intranet”. Several areas of the organisation adopted the intranet as a cheaper and more efficient mechanism to support internal business processes. For example, it was increasingly being used to support sales teams in call centres. The provision of this information is highly regulated and of vital importance to the business. Despite the critical importance of this information, the existing system dealt with this on an ad hoc basis. Call centre staff would read the information about rates for mortgages and savings, which was being uploaded manually by publishers. The intranet manager recognised that the system was prone to human errors but was finding it difficult to get the attention of senior managers to invest in creating a more robust system based on workflow of approvals. She said “Microsoft withdraw support from our publishing tool. This may finally help my ongoing project of improving and upgrading the intranet infrastructure to a proper Content Management System”. The intranet infrastructure had evolved by tinkering at the edges, creating a situation where strategic attention was really needed, but not forthcoming, to rethink the underpinning processes at the core of the platform.

5.3. Intranet link to strategy faded over time

While in 2000 the intranet was close and highly shaped by the interests and agenda of senior leaders in the bank, by 2005 it was no longer widely perceived to be integral to the business strategy. The intranet was initially commissioned by the new senior management team to communicate the new business strategy, “Strategy 2000”. Other astute senior leaders in the bank became directly involved in the initial development of the intranet. For example the HR Director saw the intranet as a catalyst to implement some needed changes in the functioning of the department and used it to cut significant costs to
the bank. The HR processes manager Pam, describes the significance of this “The intranet was pretty much being developed along the route of communications, media stories, that kind of information. No one had looked at it as a means of conveying how do we do things around here, or the rules that govern what you do”. So after a strategy meeting for senior managers in late 2000, she came away thinking that the benefits of the investment in new technology to serve customers should also be applied inside the bank. Pam said that at the time she thought “if we're going to enable our customers to go through every single channel, then surely we should be doing something for our own people. After all, how could they work effectively if we are telling them that we are providing all this wonderful technology for our customers but we don't provide it for them?” A member of the intranet team reflected on how the success of the HR site reinforced the strategic nature of the intranet across the organisation: “HR was using their site as a business case to reduce headcount and they were saving a lot of money”.

New services were added to the intranet that kept its profile high on the agenda of senior management during its first 2 years. However, as these new features became established as part of the way of doing things in the organisation so the interest in the intranet as a strategic tool faded. Despite the augmented role of the intranet in delivering core services to employees, the intranet was no longer perceived to be a core factor in the delivery of new business objectives, the intranet manager said that “the risk is that the intranet is perceived as the telephone system, so for many senior managers it just needs to work”. The intranet was not seen as a revenue generator or cost saver for the organisation, as it became perceived as part of the company infrastructure. This made it difficult for the intranet manager to develop a business case to justify investment in upgrading the infrastructure to a more robust system to cope with the increased complexity and scope. The intranet manager said “it has been really difficult to develop a convincing business case to upgrade our intranet to a more sophisticated Content Management System because the intranet is perceived to be a communication channel, not a business tool”.

5.4. Intranet perceived as infrastructure and “below the radar”

The view that the intranet is part of the organisational infrastructure, rather than a driver directly linked to new business objectives is confirmed with the move of the intranet team from a direct report to the head of the Internal Communications function, to form a new organisational function called Shared Resources reporting to the board secretary. This move reflected a generalised view that “there is no one at the top acting as an Ambassador for the intranet” (mentioned by a senior manager).

The main link to the company strategy in 2005 was the newly gained rating of the intranet as “Business Critical” by the company Risk Committee. The intranet manager in 2005 said that this rating was a good signal of the importance of the intranet for the organisation. She said “this is a very crude but objective measure of its importance”. However this status mainly reflected an interest in increasing the technical resilience of the servers and platform of the intranet to ensure 99% availability of service to meet regulatory requirements but it did not cover governance to ensure for example that accurate data and information is published or used in the way it was intended. Although this new development raised the profile of the intranet and included it in the company Business Continuity Plan, the intranet was still perceived at this stage as technical infrastructure and did not regain the status as strategic driver of earlier stages of its development. The main senior sponsor for the intranet admitted “I do think that we undervalue the intranet as an organisation. I have been trying to PR the intranet internally but have not been very successful”.

5.5. Intranet “working well” fostered false sense of security

The stability of the intranet platform created a false sense of security in senior executives who were increasingly detached from the ongoing development of this infrastructure. This made it increasingly difficult to keep the continuous involvement from senior managers required to maintain the strategic development of the intranet. A senior intranet stakeholder stated “this [maintaining senior involvement] is a challenge - because the intranet functions well and is reliable, it isn't generally seen as a priority for senior sponsors. They are comfortable with it and so getting their involvement is a challenge”. The intranet manager reinforced this view by stating “my job would be much easier if the intranet broke down”. Her observation reinforces the view that the good functioning of the intranet had become taken-for-granted despite the growing exposure to operational risk by the expanded role and scope of the intranet in the organisation.

5.6. Review of risks associated with the institutionalisation of the intranet in the bank

The five unforeseen impacts above show that the institutionalisation of the intranet was accompanied by a series of effects with significant risk to the operational functioning of the organisation. Table 3 highlights the main risks associated with the institutionalisation of the intranet in the bank:

Table 3 above reveals unforeseen developments to the management of the intranet with potentially significant impact to the bank. However, the main overall effect of the increased institutionalisation of the intranet in the activities and routines of the organisation was a reduction in the status and visibility of the intranet as a vehicle to achieve strategic goals. Despite the original imperative to set up the intranet as a channel to communicate and reinforce the new business strategy in 2000, later in 2005 the intranet was no longer seen as a strategic business driver. Instead, it was perceived to be an important but passive infrastructure technology. Paradoxically, as the intranet became more integrated and embedded in the business processes and culture of the organisation, so becoming more business critical as people became operationally dependent
on it, it simultaneously became less salient. This lack of saliency translated into reduced investment, which raised operational risks for A&L.

6. Discussion

The A&L case shows that institutionalisation arises from the ongoing use and embedding of technology in work practices and employee behaviour (as suggested by the IS alignment, diffusion and stages of growth literatures). In this way, the technology ‘becomes’ the business process as practices are inscribed into the artefact. However, as the technology becomes “mindless” to its users (Swanson and Ramiller, 2004), the risk of it loosing strategic input from senior management increases. One of the effects of this is that, as indicated by our case study, it becomes more difficult to secure the necessary resources and strategic input required to keep these technologies aligned with changes in the business. As the technology becomes institutionalised senior managers are likely to delegate the management and control of the intranet to technical support staff.

This is visible in our study of A&L’s intranet which in 2005 had become so engrained in the functioning of the bank that stakeholders would only recognise its strategic importance to the business when faced with the prospect of the intranet being “theoretically switched off” and realising that in that case “most organisational routines will come to a halt” (Damsgaard and Scheepers, 2000, p. 143). As suggested by Silva and Backhouse (1997, p. 390) “Institutionalised information systems are noticed only when they break down”. Thus, we identified a paradox in the sense that the intranet was increasingly “business critical” as it became core to many business processes in the bank, but at the same time, increasingly non-salient as a technology that needed strategic attention and input from senior executives.

Our analysis suggests that there are two aspects of institutionalisation that are important in understanding this paradox – the increasing embeddedness of the technology coupled with its emergent nature. First, it was the very embeddedness of the technology that made it difficult for senior management to separate the strategic capacity of technology from its operational use, even though intranet technology had become integral to the daily activities of the bank. As Damsgaard and Scheepers (2000, p. 142), say: “the intranet at this stage corresponds to Heidegger’s term ‘ready-at-hand’, in which the technology disappears and becomes a natural ‘extension’ of the users”. They say that when intranets reach this stage, employees “do not think about the technology itself anymore” and only become aware of their institutionalised routines when the technology is not available. As technology becomes more embedded in organisational routines, organisational actors become less cognisant of the daily routines and outcomes of the technology (Zucker, 1977). Second, following Star and Ruhleder (1996) our case demonstrates how the institutionalisation of emergent technologies like the intranet occurs gradually. That is, even though the intranet became ‘part of the furniture’, it was not static; the intranet evolved as people used it in new ways to accomplish their work practices. However, while the intranet was evolving as staff increasingly used it as part of their daily work practices, there was not a strategic focus on how far this emergence aligned with the needs of the business. This was because, as
the intranet became more embedded, key stakeholders increasingly became complacent and unresponsive to further investments to keep the technology up-to-date and aligned with the ongoing changes to the functioning of the organisation. The failure to keep the intranet on the strategic agenda of senior management increased operational risk, particularly as the poor management of a burgeoning intranet site was not conducive to meeting the business goals of improving strategic alignment and agility.

Given the above, the risk for organisations of this paradox is the gradual misalignment between the technology and the functioning of the organisation. Over time, the lack of reflection about the strategic use of the technology to meet the changing needs of the organisation can lead to lack of investments necessary to keep the technology operating and supporting employees according to ongoing changes to business processes and industry regulations. For example, as the intranet became more deeply embedded in the provision of customer services in the bank, a more advanced governance system was required to ensure that the information provided was compliant with internal and external policies and regulations. External legal and regulatory requirements required a revision to existing business and administrative processes, and failure to comply would be met with financial penalties. However, our findings show that the bank’s intranet technology was not perceived as a top management priority at this time, nor given much attention by employees. Yet, given that the banking sector is highly regulated, there was a high probability that the intranet would have to respond to new regulations, for example to prevent anti-money laundering, compliance with Basel II and the UK’s freedom of information act. In fact the bank was under increased pressure to implement new regulations and systems to prevent money laundering. A new role was created to lead this initiative in the bank but most of the activities were centred on developing automated profiling algorithms within the banking systems and little attention was paid to the central role of the intranet in serving customers, thus enforcing anti-money laundering regulations. The low profile of the intranet in senior management’s agenda, made it unlikely that the intranet would be featured in the bank’s responses to these new developments.

An important insight from this study is therefore that the operational risk profile of technology changes overtime without the immediate awareness of senior management and staff. Thus, over time, the intranet emerged to play a key role in banking processes and in handling customer and employee information. Therefore it was critical that senior management understood its role, strategic significance and risks of using it as a business tool; that is, that they understood the infostructural and infocultural roles of technologies such as intranets, as well as their infrastructural role in delivering core business services (Newell et al., 2000a). The evidence suggests that this was not the case. This may have serious consequences to the operational functioning of the organisation and strategic effectiveness of the technology. Table 4 summarises the five main risks identified in our research and suggests possible measures to mitigate these risks.

As illustrated in the table above, our findings suggest that organisations need to develop internal systems to regularly and proactively disrupt the process of institutionalisation to raise awareness of long established technologies. This is particularly important for emergent technologies such as intranets, which need to be constantly adapted to ongoing changes in the organisation and its environment.

7. Conclusion

One contribution of our research is to demonstrate the importance of technology for the institutional stability of an organisation, reinforcing the point that the lack of interest in the organisation/management literatures on the role of technology is a major shortcoming (Czarniawska, 2008). In relation to the IS literature, this has explored the processes through which IT becomes ‘taken for granted’ and embedded into organisational practices and routines, but it has done so with an implicit assumption that this is a positive force contributing to alignment with the functioning of the organisation (Teo et al., 2003). Our contribution is to demonstrate the ‘dark side’ of this institutionalisation in relation to the negative strategic

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<tr>
<th>Challenges and risks</th>
<th>Recommendations for practice</th>
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<tr>
<td>Silent growth beyond capacity increasing risk of disruption to its availability</td>
<td>Monitor the growth and evolution of emergent systems by creating performance metrics to ensure that complexity is forecasted and managed</td>
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<td>Unintended use of the intranet risking non-compliance</td>
<td>Establish a governance system that monitors the development of new functions to ensure compliance to corporate rules and regulations</td>
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<td>Fading link to strategy risking stagnation</td>
<td>Clearly establish the direct contribution of the intranet to the changing strategic business objectives of the organisation. The intranet strategy should adapt to incorporate new developments in the business and industry</td>
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<td>Perceived as infrastructure risking continuous innovation and alignment with the organisation</td>
<td>The underlying technical platform of the intranet may be managed as organisational infrastructure, but the intranet front-end, content and services need to be more proactively managed to keep them aligned with changes in the organisation and as a strategic driver for the business</td>
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<td>False sense of security risking regular review of risks</td>
<td>Prevent complacency by monitoring the risks of using the intranet as a business tool even when it continuously works well</td>
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Table 4
Summary of challenges and business risks and recommendation for practice.
consequences. Interestingly, Oliver identified this issue back in 1991 saying that research should address the lack of “explicit attention to the strategic behaviours that organisations employ in direct response to the institutional processes that affect them” (Oliver, 1991, p. 145). However, little research has focused on this. Our case clearly indicates the strategic risks associated with the institutionalisation of an intranet.

Our analysis identifies what these strategic risks can be and in our discussion we suggest some practical ways in which these risks may be mitigated. Future research is needed to establish how these risks are common across organisations and across different types of IT. Future research is also needed to establish whether the suggested risk mitigation practices can actually work in practice. Action research may be a good way to explore this. We have also established a preliminary characterisation of the features of institutionalised IT. This was a by-product of this research and future research can usefully examine the generalizability of our framework as well as develop operational measures for each feature. In this way future research can help to further balance our understanding of the negative as well as positive outcomes of the institutionalisation of IT in business organisations.

In conclusion, we offer an illustrative case study of the consequences of institutionalisation on the strategic development of technology in organisation. We suggest that a paradox emerges where the taken-for-granted nature of emergent infrastructure technology combines with reduced collective awareness at the senior management level. This phenomenon serves to challenge the speed at which senior executives and others can identify and respond to endogenous and exogenous pressures to adapt technology to meet changing business conditions. The consequences, therefore, of the dark side of institutionalisation may be that organisations become less competitive and agile where technologies become removed from the ‘radar screen’ of key decision makers. On a practical level, our findings indicate the need for senior management to continuously raise awareness about the strategic possibilities of established technology to ensure that they do not ‘drift’ away from business needs. As our findings show, the lack of senior management attention to the strategic alignment of the intranet with the business meant that the growing risks of using it as a business tool were not monitored and its strategic potential was under-exploited.

References
