The panoptic gaze: Analysing the interaction between enterprise resource planning technology and organisational culture

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ABSTRACT

The use of enterprise resource planning (ERP) systems to deploy the panoptic gaze remains unresearched in the UK. Though there are studies outside the UK which use panoptic theory to investigate ERP systems, they do not analyse the influence the interaction between ERP technology and organisational culture have on the development of the panoptic gaze. The aim emerging from these issues was to understand whether ERP technology, organisational culture, or a combination of both could support development of the panoptic gaze in an organisation from the UK. The method selected was a qualitative case study of a UK organisation’s finance division, and the techniques used were semi-structured interviews and observations. The study suggests the ERP technology provided an infrastructure from which the panoptic gaze could be deployed. It was not deployed in this instance however, as the finance division’s culture did not emphasise workforce surveillance. The study therefore suggests that in addition to ERP technology a culture emphasising workforce surveillance was needed to develop the panoptic gaze. The findings support the social shaping concept as it was the finance division’s cultural context that influenced whether the ERP technology would be used to deploy the panoptic gaze.

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1. Introduction

The panopticon was originally conceived as a prison in 1787 by Jeremy Bentham. He designed it in such a way that a guard could observe prisoners, who knew they could be observed, but were unable to tell when they were being observed. He argued that prisoners who know they can be observed would conform to disciplinary power. Foucault (1977) later extended Bentham’s work and adopted the panopticon as a metaphor for societal surveillance and disciplinary power. The literature acknowledges the panopticon’s potential to exert disciplinary power over workers, particularly in relation to the monitoring and surveillance of their activities (e.g. Bain & Taylor, 2000; Sewell, 1996; Sewell & Wilkinson, 1992).

More recently, electronic or informational panopticons have emerged in the workplace (Bain & Taylor, 2000; Sewell, 1996; Thompson & Ackroyd, 1995). Zuboff (1988) provides an often cited exposition on the panoptic power of information technology in the workplace. She claims information technology that translates, records, and displays human behaviour, can provide the computerised version of universal transparency. She argues that systems which do not depend on the physical arrangement of buildings, record keeping, or the presence of an observer, can become information panopticons. Gandy (1989) agrees with Zuboff by suggesting information technology can render panopticism if it can support the automatic generation of intelligence about people. More recently, it has been suggested that ERP systems can provide management with a mechanism for workforce surveillance (Elmes, Strong, & Volkoff, 2005; Sia, Tang, Soh, & Boh, 2002).

ERP systems are a software package designed to integrate, standardise, and automate processes and information transactions within the adopting organisation and throughout its supply chain (Al-Mashari & Zairi, 2000; Bingi, Sharma, & Godla, 1999; Davenport, 1998; Holland & Light, 1999). It is done by a collection of application modules communicating with each other directly via one central database from which all modules draw, manipulate, and update data (Bingi et al., 1999; Davenport, 1998; Umble, Haft, & Umble, 2003). The central database enables information to be accessible to those intended across diverse organisational functions, units, and geographic boundaries in real time (Bingi et al., 1999; Nah, Lau, & Kuang, 2001). For the purpose of this study ERP technology refers to the hardware and software, whereas ERP system also refers to the adopting organisation’s social context.

Enterprise resource planning (ERP) systems are becoming more widely implemented in organisations of all types and sizes (Dillard & Yuthas, 2006; Holland & Light, 2001). Despite their proliferation, research tends to focus on issues of implementation whilst their
use remains comparatively unresearched (Esteves & Bohórquez, 2007; Esteves & Pastor, 2001; Holland & Light, 2001; Møller, Krammergaard, Rikhardsson, & Møller, 2004). One aspect of their use which needed further research was whether the interaction between ERP technology and the adopting organisation’s cultural context could support development of the panoptic gaze.

Three issues emerge from previous studies which have investigated ERP systems using panoptic theory. First, they have differing conclusions as to whether ERP systems can support the panoptic gaze. Second, those that claim ERP systems can support the panoptic gaze do not analyse whether it is developed because of ERP technology, organisational culture, or a combination of both. Third, existing research is not within the context of the United Kingdom. The aim which emerged from these three research issues was to understand whether ERP technology, organisational culture, or a combination of both could support development of the panoptic gaze in an organisation from the United Kingdom. It is important to note the study focused on the development of the panoptic gaze, not whether it may in turn render disciplinary power.

This paper explores the potential of ERP systems in facilitating the panoptic gaze using the finance division of a United Kingdom higher education institute as a case study. First it outlines the theoretical underpinnings by drawing upon theory of organisational culture, the sociology of technology, and the panopticon. The research issues are then presented and explored before the methodological approach and organisational context is outlined. The discussion presents findings under two main headings: before the implementation of the ERP system and after the implementation of the ERP system and presents the findings through this comparison. The final section presents conclusions and highlights issues for further research.

2. Theoretical background

This section starts by examining the current focus of ERP systems research to show that the interaction between ERP technology and organisational culture and whether they can support the panoptic gaze is under researched. Organisational culture, a complex social phenomenon which lacks consensus about its definition because of a dispute in its underlying philosophical assumptions, is then analysed as the perspective adopted would influence the approach taken regarding sociological and technological interaction. To understand whether the ERP technology, the adopting organisation’s cultural context, or a combination of both can render the panoptic gaze, the literature review then discusses theories of sociological and technological interaction. ERP systems studies adopting panoptic theory are then critiqued to identify the three research issues which the study addresses in its aim.

2.1. The focus of ERP systems literature

Esteves and Pastor (2001) conducted a survey of 189 enterprise system articles published between 1997 and 2000 within what they considered to be the key information systems journals and conferences. They found that implementation was the dominant category with 78 publications, followed in second place by general with 38, education with 26, usage with 17, evolution with 12, acquisition with 11, adoption with 7, and retirement with 0. In 2007 this publication was updated by Esteves and Bohórquez (2007). The revised survey analysed 449 enterprise system articles published between 2001 and 2005. They found that implementation was still the dominant category with 207 publications, followed by usage with 68, evolution with 59, general with 40, education with 35, adoption with 25, acquisition with 15, and retirement still with 0. Møller et al. (2004) conducted a survey of 739 enterprise system articles published between 2000 and 2004 in 212 journals. The study sought the most frequently used keywords in enterprise system publications. Table 1 shows the 15 keywords with 10 or more occurrences.

These studies indicate literature often takes a managerial perspective, focuses on issues relating to ERP system implementation, and how the introduction of an ERP system can improve organisational efficiency, effectiveness, and/or performance. They also suggest literature which investigates organisational culture and workforce surveillance is not high on the research agenda; therefore, offering an opportunity to explore whether ERP technology, organisational culture, or a combination of both can support development of the panoptic gaze.

2.2. Organisational culture

There is disagreement in the literature about the definition of organisational (or corporate) culture (Alvesson, 2002; Harris & Ogbonna, 1998; Martin, 1992). This absence of agreement could be because of the variation in philosophical assumptions which guide approaches to organisational culture studies (Alvesson, 2002). An important philosophical distinction is between the functionalist (or positivist) and interpretivist paradigms (Alvesson, 2002; Martin, 2002; Smircich, 1983).

Functionalism is rooted in the sociology of regulation, and approaches a phenomenon from an objective position (Alvesson, 2002; Burrell & Morgan, 1979; Martin, 2002). It holds that organisational culture is something an organisation possesses and is given to people when they join. Studies drawing upon functionalism tend to use models and methods derived from the natural sciences to analyse organisational culture as a real phenomenon. Functionalist definitions of organisational culture include Hofstede (2001) who describes it as the “collective programming of the mind; it manifests itself not only in values, but in more superficial ways: in symbols, heroes, and rituals” (p. 1). Alternatively, Schein (2004) claims it is:

...a pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems (p. 17).

Though interpretivism is also rooted in the sociology of regulation, it approaches a phenomenon from a subjective position (Alvesson, 2002; Burrell & Morgan, 1979; Martin, 2002). It seeks to understand organisational culture by explaining it within the realm

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<td>14. Electronic commerce</td>
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<td>15. Critical success factors</td>
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of people’s consciousness and subjective experiences (Alvesson, 2002; Crotty, 1998; Martin, 1992, 2002). Interpretivist definitions of organisational culture include Willmott (1993) who claims its concern is “to win the ‘hearts and minds’ of employees: to define their purposes by managing what they think and feel, and not just how they behave” (p. 516). Alternatively, Martin (1992) declares that: “[a]s individuals come into contact with organisations, they come into contact with dress norms, stories people tell about what goes on, the organization’s formal rules and procedures, its informal codes of behavior, rituals, tasks, pay systems, jargon, and jokes only understood by insiders, and so on. These elements are some of the manifestations of organizational culture. When cultural members interpret the meanings of these manifestations, their perceptions, memories, beliefs, experiences, values will vary, so interpretations will differ—even of the same phenomenon. The patterns or configurations of these interpretations, and the ways they are enacted constitute culture (p.3).

Møller et al. (2004) suggest organisational culture is a social phenomenon largely ignored in ERP systems literature. Those studies that do investigate organisational culture tend to analyse the impact of national and organisational culture on ERP system implementation (e.g. Ke & Wei, 2005; Krumbholz & Maiden, 2001). One study analysing the interaction between ERP technology and organisational culture is the conceptual account presented by Boersma and Kingma (2005). From their review of the literature they argue organisational culture can shape ERP technology, and that this technology in turn influences organisational culture. A criticism of their research is that it has no empirical foundation from which to support the claim. The apparent lack of research in this area demonstrates the need to further understand the interaction between ERP technology and organisational culture. The following section addresses this issue by reviewing literature about sociological and technological interaction.

2.3. Sociological and technological interaction

Burrell and Morgan (1979) plot human nature along the objective and subjective dimension to yield two opposing perspectives for analysing the nature of social science: determinism (objective) and voluntarism (subjective). By applying a sociotechnical lens to the assumptions of human nature it provides opposing perspectives to sociological and technological interaction: technological determinism and sociotechnical systems theory which both reside in the objective dimension; and the social shaping concept which resides in the subjective dimension.

According to Winner (1978), technological determinism rests on two hypotheses: “(1) that the technical base of a society is the fundamental condition affecting all patterns of social existence and (2) that changes in technology are the single most important source of change in society” (p. 76). The technological function is seen as giving a definite artificial form to a specific human activity. From this position, ERP technology is viewed as an external condition which determines the social context within the adopting organisation.

According to Boastrom and Heinen (1977) sociotechnical systems theory argues all organisations are made up of two jointly independent subsystems: the social subsystem which is concerned with employees, their attributes, their relationships, reward systems, and authority structures; and the technical subsystem which is concerned with processes, tasks, and technology which transforms inputs to outputs. Though separate, it is contended that the joint optimisation of the social and technical subsystems is needed to meet organisational objectives.

The social shaping concept is a subjective approach which argues that technology does not determine human nature, rather human actions and interactions shape how that technology is utilised (Bijker, 1987; Pinch & Bijker, 1987; Williams & Edge, 1996). Williams and Edge (1996) argue that the social shaping concept allows technology to be analysed as an outcome of human action and interactions. It stands in opposition to determinism by arguing that technology does not develop because of an inner technical logic; rather conscious and unconscious choices made by a person or people about technology shape the direction of its development and use.

At present, research has tended to perceive ERP technology as determining the adopting organisation’s social context, and in doing so has failed to consider the impact the social context has upon ERP technology. The study drew on these objective and subjective concepts and theories of sociological and technological interaction to understand whether ERP technology, organisational culture, or a combination of both can support development of the panoptic gaze. The following section critiques previous studies which used panoptic theory to investigate ERP systems to illuminate the gaps in existing research and, thus, what the study focused on.

2.4. Enterprise resource planning system studies using panoptic theory

Sia et al. (2002) take the notions of information technology being able to provide a panopticon further by suggesting ERP systems can provide management with panoptic power over workers. They triangulate quantitative and qualitative methods to conduct a case study of a hospital in Singapore. Their research begins by assuming ERP technology creates information visibility because of the apparent seamless integration it generates. Yet in their conclusion, they acknowledge it may not be ERP technology which developed the panopticon effect, but instead the social context it was embedded and shaped in. Though Sia et al. describe the hospital’s social context before and after implementation as one of institutional conservatism, their research does not elaborate on the interaction between the ERP technology and the hospital’s culture, or the influence it had on developing the panoptic gaze.

The study by Elmes et al. (2005) adopted a Foucauldian lens to investigate changes in organisational control that emerged after enterprise system implementation. They took an interpretive perspective and used a grounded theory methodology to conduct a case study of a global manufacturing organisation in the United States of America. Their study concludes with two contradictory theoretical concepts: panoptic empowerment which refers to the information visibility provided by the enterprise system’s database, which in turn empowers workers to be more efficient and effective, but also makes them more visible to those who can exercise control; and reflective conformity which refers to the greater level of worker discipline whilst requiring them to be reflective, and to the benefits achieved because of rules and procedures embedded in the enterprise system. Elmes et al. acknowledge that the enterprise system fostered a disciplinary culture which encouraged workers to follow and value processes. Despite this acknowledgement, they did not elaborate on the interaction between the enterprise technology and organisational culture, or the influence it may have had on developing the panoptic gaze.

Although Sia et al. and Elmes et al. investigated different aspects of ERP systems, they both suggest ERP systems can support development of the panoptic gaze. Conversely, Dechow and Mouritsen (2005) argue whether ERP systems can support panoptic visibility. Their investigation of two Danish organisations highlights two issues. First, integration supported by ERP technology may result in more accurate and available information, but does not necessarily develop panoptic visibility. That is because ERP technology
does not have a place to store details about all management control problems. Second, ERP technology may result in less integration and subsequently less accurate and available information, which means information visibility and invariably panoptic visibility is reduced.

Another issue of these studies is that they are not within the context of the United Kingdom. The variations between different national cultures are well documented in the literature (Hofstede, 1991, 2001; Malhotra, 2001). Some factors which influence these variations are legislation, customers, competitors, and other organisations. These factors could therefore influence the adopting organisation’s cultural context and, thus, whether ERP technology can be used by management as a surveillance mechanism in the United Kingdom.

2.5. Summary of research issues

To summarise, three issues emerge from existing studies about ERP systems and the panoptic gaze. First, they have differing conclusions as to whether ERP systems can support the panoptic gaze. Second, those that claim ERP systems can support the panoptic gaze do not analyse whether it is developed because of ERP technology, organisational culture, or a combination of both. Third, existing research is not within the context of the United Kingdom. The study is drawing upon research about sociological and technological interaction to understand whether ERP technology, organisational culture, or a combination of both are needed to support development of the panoptic gaze. Fig. 1 has therefore been created to illustrate the connection and synthesis between the diverse areas of research to be investigated. The following section explains and justifies the methodology selected for investigating these three issues.

3. Methodological approach

The research approach adopted was qualitative and drew upon the interpretivist paradigm. Because interpretivism investigates different people’s perspectives, it is suited to enhancing the contextual understanding of the social phenomenon being researched (Klein & Myers, 1999; Orlikowski & Baroudi, 1991; Walsham, 1993). A case study of an education institute’s finance division was therefore selected as it would allow the researcher to understand the panoptic gaze through the different meanings different people assign to the ERP system (Stake, 1995; Walsham, 1993, 1995, 2001, 2006). It aimed to understand the process whereby the ERP technology influences and is influenced by its social context (Walsham, 1993). The case study therefore facilitated the detailed investigation of the three identified issues as implied in the study’s aim, thus providing a useful initial step (Eisenhardt, 1989) for opening up the debate as to whether ERP technology, organisational culture, or a combination of both can support development of the panoptic gaze within an organisation from the United Kingdom. The purpose of this case study was not to represent the world, but to represent the case (Stake, 2005). It was concerned with the particularity of the finance division and not with the discovery of laws that can be generalised to a wider context (Burrell & Morgan, 1979; Stake, 2005).

The principle data construction technique selected for capturing users’ roles was the semi-structured interview. It allowed the researcher and participant to establish an interactive process enabling the pursuit of the themes raised (Kvale, 1996; Rubin & Rubin, 2004). Panoptic theory suggests there is an observer and an observed. The study therefore classed managers as the observers and workers as the observed. All eight of the participants interviewed were users of the ERP system and had a position as either a senior accountant, management accountant, accountant, senior finance assistant, or finance assistant. The participants were employed before the ERP system became operational so they could describe whether the division’s culture had changed as a result of the ERP system’s operationalisation. Each interview was conducted in a private room on site, lasted approximately forty five minutes, and was tape recorded with each participant’s consent. The interview approach adopted meant the researcher was able to develop a richer understanding of the different meanings users assigned to the panoptic gaze from different levels of the finance division’s hierarchy at different points in time.

Walsham (1995) argues that interviews are the primary source of data collection when conducting an interpretivist case study. He claims interviews allow the researcher to access actions and interpretations of events which have or are taking place. It has been suggested, however, that interviews could or should be supplemented by another data construction technique: observations (Angrosino, 2005; Bryman, 1988; Lofland, Snow, Anderson, & Lofland, 2006; Walsham, 2006). During the research visits to the site, overt observations and informal conversations were conducted with users from within the finance division. These observations took place between interviews and were conducted within the interviewees offices. These social interactions helped the researcher develop a richer understanding of their socially constructed reality (Kosso, 1998; Lofland et al., 2006).

The data constructed during the interviews was analysed thematically (Aranson, 1994) without the use of computer assisted qualitative data analysis software. Once the interviews were transcribed, participants’ experiences were identified: culture pre ERP; culture post ERP; data access pre ERP; data access post ERP. Data about these experiences was then identified by drawing upon the statements made by participants during the interviews. In isolation these statements may have seemed meaningless. When matched with the identified experiences, however, it created a comprehensive picture which illustrated participants’ perceptions of the division’s culture pre and post ERP and, if workforce intelligence was captured, whether it was done overtly or covertly. The thematic analysis of the data therefore enabled the researcher to investigate different participants’ perceptions about the ERP system and whether it was used to deploy the panoptic gaze.

4. Organisational context

An education institute’s finance division located in the North West of England was selected as the unit of analysis. Because the finance division belonged to a public organisation, staff were not offered rewards or bonuses as an incentive to drive profits, work was instead done to comply with the requirements of the
education sector. The finance division used to have an information system called Nucleus which had aged to the point it was no longer supported by the application vendor, nor did it fit with management’s need for real time access to data. In 2001 the decision was therefore made to replace Nucleus with an ERP system. The ERP technology vendor selected was SAP and the application chosen was mySAP. Installation began in September 2002 with the completion date set for March 2003. It did not become operational until August 2003 however due to a lack of consensus amongst the one hundred people who were selected from within the institute to provide input into mySAP’s specification. Once specification was agreed, it was installed by a group of ‘experts’ from within the institute and an official SAP implementation partner. As mySAP was implemented in the finance division, the financial module and project system module were installed. Contract accounting, a sub-module of the financial module, was also installed. None of these modules were customised as the vanilla approach was adopted.

5. Discussion

5.1. Before the implementation of the ERP system

Prior to the operationalisation of mySAP, the finance division used an information technology called Nucleus, which was unable to capture workforce intelligence, but was able to store, retrieve, and disseminate financial data. Due to an audit requirement, management was tasked with observing workers’ activities to ensure data accuracy. This was done to comply with the requirements of a public organisation operating in the education sector. It required management to print off reports, check data accuracy manually, correct any errors, and if errors were repeated speak to the culprit. Workers knew management accessed data about their activities because they would be spoken to if they repeated errors.

“I didn’t really access data about workers’ activities because there wasn’t time. However, when errors did arise I would talk to the person who made them. Consequently, workers knew data about their activities was accessed as they’d be spoken to.” (Interview 4, manager)

Despite management’s observations, workers accepted it as part of the audit requirement, did not sense any malicious intent, and knew when data about their activities was accessed.

“Management didn’t check what transactions had been done; but they did check the accuracy of my work... I knew when management checked the accuracy of my work, but it didn’t bother me. It was checked because it was an audit requirement.” (Interview 3, worker)

Because workers knew when they were observed, it meant a panoptic gaze was not employed within the finance division. That is because the panoptic gaze is when a manager can observe workers, who know they can be observed, but do not know when they are being observed. Management did not emphasise the observation of workers because it was not engrained in the finance division’s culture during that period. If it was a call centre in a profit driven organisation, for example, management may have covertly accessed workers activities to ensure they were meeting their targets. However, this was a nonprofit organisation which sought to comply with its requirements, not to maximise profits.

5.2. After the implementation of the ERP system

In 2001 the institute decided to implement mySAP in the finance division to replace the ageing and no longer supported Nucleus and to integrate all its financial systems. Although it was not implemented with the intention of providing management with a surveillance mechanism, mySAP inadvertently brought about a level of information visibility as it was able to overtly or covertly capture intelligence about workers’ data input accuracy.

“SAP enables me to drill down into the audit to see who has done what and when... SAP makes it more clear when problems arise. I can access data about who is coding and the errors which are being made... now there is information visibility.” (Interview 2, manager)

Access to workforce intelligence was not just a management feature, but a feature available to those that were granted access to a function called drill down. In this instance, management decided to provide workers with access to drill down to help ensure the finance division complied with its requirements as a public organisation. The audit, now generated each month by mySAP, was interrogated using drill down to identify any errors, who made them, and when they were made.

“It’s transparent and workers know their name is on everything, but they are happy with that because they can also see.” (Interview 5, manager)

“[I] can use drill down to see who entered what and when... it [mySAP] runs reports which tell me about errors they’ve [workers] made.” (Interview 4, manager)

Despite mySAP’s ability to covertly capture workforce intelligence, a panoptic gaze was not employed as management openly disclosed when they accessed intelligence. This undermines the premise of panoptic theory, which is, that management can observe workers, who know they can be observed, but do not know when they are being observed.

“I know management check errors on reports... I know they can drill down to see who did what and when it was done.” (Interview 6, worker)

Despite this, the case study reinforces the view that ERP technology can capture workforce intelligence (Elmes et al., 2005; Sia et al., 2002), and suggests, that if management were to withhold when they access workforce intelligence, and rescind users access to drill down, a panoptic gaze would be in operation. Or if there was a change of management within the institute’s senior management, or locally within the finance division, the cultural context within the division could change to emphasise workforce surveillance. If this were the case, the new management regime could take advantage of mySAP’s capacity to capture workforce intelligence and use it as a mechanism to deploy the panoptic gaze. Contrary to this view, if there were a change of management, they may conform to the cultural context within the finance division meaning the culture would not change to emphasise workforce surveillance.

There were two reasons why the panoptic gaze was not deployed. First, before mySAP, the culture within the finance division did not emphasise workforce surveillance.

“It wasn’t like big brother... There wasn’t a great deal of emphasis on observing workers” (Interview 5, manager)

This cultural characteristic continued throughout implementation and once mySAP was operational. It suggests that in addition to the infrastructure provided by ERP technology, a culture emphasising workforce surveillance was needed to influence whether the panoptic gaze would be deployed. This supports the notion of the social shaping concept, as it highlights how human actions and interactions within the finance division shaped the ERP technology, and whether it would be used to deploy the panoptic gaze. It also reinforces the premise of sociotechnical systems theory, as it
suggestions the finance division was composed of two jointly independent subsystems: mySAP and the finance division’s culture. In order for these two subsystems to have interacted in such a way that they could be used to form the panoptic gaze, both would have to emphasise workforce surveillance. Fig. 2 illustrates how, in addition to ERP technology, a culture emphasising workforce surveillance is needed to support development of the panoptic gaze.

Second, when purchasing mySAP, it seems purchasers made the conscious or unconscious choice that capturing workforce intelligence was not a priority. If such a feature was sought, purchasers could have made enquiries to SAP. In such an event, it is likely the vendor would have pointed to the human capital management solution, as its workforce analytics function allows real time measurement and metrics to provide, what SAP calls, human resource process optimisation. It provides direct visibility into workers’ performance thus enabling management to make workforce related decisions. When operational, management also made the conscious or unconscious choice that a panoptic gaze would not be deployed, despite knowing mySAP’s financial and project system modules could be used to capture intelligence about the accuracy of workers’ data input. Management could have chosen to withhold when they observed workers’ activities, thus, altering mySAP’s trajectory and rendering a panoptic gaze. The case study therefore suggests that the choices made by purchasers and management influenced which mySAP functions were purchased and whether they would be used to covertly capture workforce intelligence.

The case study also goes on to support Dechow and Mouritsen’s (2005) claim that ERP technology can bring about information visibility due to integration, but cannot store data about all management control issues. The finance division suggests two reasons for this. First, although mySAP can capture workforce intelligence, it can only store data specific to the module that is operational. Since only the financial and project system modules were implemented, it could not, for example, capture intelligence about human resources. Second, despite the modules ability to capture intelligence about workers’ data input accuracy, they cannot capture data about all management control problems. That is because each adopting organisation would have its own idea of what data needed capturing; as such, vendors could not design and develop ERP technology to satisfy the requirements of all organisations.

6. Conclusion

The aim of this investigation was to understand whether ERP technology, organisational culture, or a combination of both can support development of the panoptic gaze within an organisation from the United Kingdom. The investigation suggests ERP technology provided the finance division with an infrastructure from which the panoptic gaze could be deployed. In this case, management used mySAP to overtly access intelligence about workers’ data input accuracy, thus, diminishing the panoptic gaze. There were two reasons why intelligence was overtly accessed. First, the finance division’s culture did not emphasise workforce surveillance prior to mySAP. This cultural characteristic subsequently shaped how mySAP was used once operational. Second, the choices made by purchasers and management influenced which mySAP modules were purchased and whether they would be used to covertly capture workforce intelligence once operational.

By analysing the interaction between ERP technology and organisational culture the investigation has made an important contribution to an area currently lacking research (Boersma & Kingma, 2005; Möller et al., 2004). The study appears to contradict the dominant view that ERP systems are a rational technology that can be managed to manipulate the utilising organisation’s social context (e.g. Bingi et al., 1999; Davenport, 1998); instead suggesting, the utilising organisation’s cultural context can influence how the ERP technology is used. When plotted along Burrell and Morgan’s (1979) objective and subjective dimension of human nature, it suggests the case organisation’s purchasers and managers were located in the voluntarist dimension, since they were able to make decisions and take actions which shaped the technological base of the organisation. This supports the social shaping of technology concept, and undermines technological determinism as, in this instance, it was the finance division’s cultural context that shaped how mySAP would be used. The study also acknowledges sociotechnical systems theory by identifying mySAP and the finance division’s cultural context as two jointly independent subsystems which had to be in congruence to support development of the panoptic gaze.

The study therefore has implications for research and management practice regarding the impact of the ERP technology upon the adopting organisation’s business processes. That is because prior studies have often suggested ERP systems are deterministic and impose their logic on business processes (Light & Wagner, 2006). In this case study, however, the cultural context prior to mySAP influenced how the business processes would be utilised: not to act as a mechanism for covertly collecting intelligence about workers’ activities.

The case study applies to the finance division of an education institute from the United Kingdom. Therefore the investigation does not claim to be generalisable to all organisations using ERP systems; it needs extending to offer a wider perspective of the interaction between ERP technology and organisational culture, and the influence they can have on the panoptic gaze. Despite this, the contributions generated are transferable and give further understanding into existing research. The investigation could also go on to act as a stepping stone to investigate the influence the panoptic gaze has on workers’ behaviour in an office environment. Subsequently, it could investigate whether disciplinary power, induced by the panoptic gaze, increases or decreases workers’ performance.

References


