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# **Emergent Cultural Change: Unintended Consequences of a Strategic Information Technology Services Implementation in a United Kingdom University**

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## **Abstract**

*Over the past twenty years United Kingdom universities have been undergoing a dramatic period of transformation and change which can be attributed to the expansion of the higher education sector, the growth in student numbers participating in higher education and the development of an ideological approach to public service management referred to as 'new managerialism'. The growth in student numbers has provided a challenge for universities and many have adopted enterprise-wide information systems such as SITS (Strategic Information Technology Services) to support the management of student data in all areas of the university. This article explores through a three year case study in a UK university how the introduction of SITS, an enterprise wide student administration system, intended to deliver better quality student information, has had some unintended consequences for organizational culture which include the expansion of 'new managerialism' and the further weakening of academic status within the university.*

# **Emergent Cultural Change: Unintended Consequences of a Strategic Information Technology Services Implementation in a United Kingdom University**

## **Introduction**

The organizational cultures and identities of United Kingdom universities have over the past twenty years been undergoing a dramatic period of transformation and change. It is argued that much of this change can be attributed to the expansion of the higher education sector which has seen an increase in the number of universities, the growth in students participating in higher education and the development of an ideological approach to public service management referred to as 'new managerialism' which emphasises the need to overtly manage the work of academics and academic work within the context of the modernisation agenda of government and university funding bodies ( Deem 1998; 2004).

Most United Kingdom universities have found the growth in student numbers challenging especially when coupled with the demand from central government for increasing volumes of student and performance data (Bergquist and Pawlak 2008). Consequently many have turned to information technology and invested in enterprise-wide integrated administration systems which promise to deliver all aspects of student information and to support most of the university activity (Fowler and Gillfilan 2003). One such system SITS (Strategic Information Technology Services) is used by over 70% of the UK HE market and 25% of the Scottish further education market (<http://www.qas.co.uk/partners/tribal-8.htm>) and has become the de facto standard. Like many other integrated systems of its genre it has been built around an 'ideal' model of university administration consisting of modules to support admission of students to university, programmes to manage the curriculum through a standard three year degree, a student module to manage enrolment, fees, progression throughout the degree and tools to 'enable' users to analyse, process and extract data. These enterprise systems are marketed as being highly flexible with the opportunity to customise to individual university needs. However, it is evident that many universities find these systems overwhelming during implementation and adopt practices that bring with them

unintended consequences (Pollock and Cornford 2004). One such consequence may be the advancement of 'new managerialism' within the organization and with it a culture of command and control which maybe incongruent with such knowledge based organizations.

The concept of 'new managerialism' has arisen and been utilised as a way of trying to understand the nature of imposed management practice more often seen in larger private sector businesses onto public sector not for profit organizations (Clarke and Newman 1997). Thus within a fiscally challenged public sector not only in the United Kingdom but also in other countries such as Portugal (Santiago and Carvalho 2008), Australia (Lewis, Marginson and Snyder 2005) and New Zealand (Doolin and Lawrence 1998) it appears that there is an agenda to change cultures of public sector workers, they should be accountable to the tax payer or funder and they should be regulated in terms of their performance. Within higher education 'new managerialism' has been accompanied by the appointment of managers with for example remits for marketing, quality assurance, public relations and information technology as well as practical control technologies such as target setting, appraisals and key performance indicators (Deem and Brehony 2005). In a number of public sector settings government has attempted to introduce enterprise wide systems to support accountability and control (Doolin and Lawrence 1998; Lewis, Marginson and Snyder 2005; Parker 2000) yet to date there is little evidence of its implication in the advancement of 'new managerialism' in the United Kingdom higher education sector. Thus the aim of this article is to explore through a three year case study in an English university how the introduction of an enterprise wide student administration system, intended to deliver better quality student information, has had some unintended consequences for organizational culture which include the expansion of 'new managerialism' and the further weakening of academic status within the university.

What follows is a short discussion of culture research within higher education and how it has moved on since the early studies which focussed on shared values and unitary cultural

communities. 'New managerialism' is then presented as a phenomenon which has colonised public sector management and more specifically higher education where it is argued that its introduction is politically motivated and reifies manager power over services and employees ( Clarke, Gewitz and McLaughlin 2000; Clarke and Newman 1997). Next there is consideration of the role information technology is playing within the context of 'new managerialism' and how integrated information systems have the potential to advance the control agenda. Through exploration of the case study in New University the article provides evidence that systems such as SITS can support and reinforce control and monitoring of staff and can herald a new cultural environment which legitimises the use of even more management technology within the professional academic domain.

### **Culture, Control and the Strategic Information Technology Services (SITS) system**

Introducing a new enterprise wide integrated information system and associated information technology is a challenging endeavour within any private or public organization and has often led to many less than optimal results or even failures (Gargeya and Brady 2005; Somers and Nelson 2004). In trying to understand these experiences a number of academics have been led to focus upon culture and control as social phenomena within these environments (Bloomfield 1995; Bloomfield 1991; Coombs, Knights and Willmott 1992; Doolin and Lawrence 1998). 'Culture' exposes the web of meanings various actors associate with work and related technologies as they adjust to new changes in the working environment. 'Control' is deployed to highlight the intended and unintended consequences of the exercise of power and the use of specific knowledge in and around the system, information technology and organizational relations.

### **Culture**

The academic study of culture is a highly contested domain and has led to disagreements about its definition, the nature of cultures and even to questions about the utility of the concept of organizational culture itself (Silver 2003). Much of the early research into

organizational culture conceptualised culture as a variable that can be controlled or manipulated and has led to prescriptive approaches to culture research (Deal and Kennedy 1982; Huczynski and Buchanan 2007; Ouchi 1981; Peters and Waterman 1982; Schein 2010).

Within higher education this quest for 'shared' values and unitary cultural communities has been reflected in the work of Dill (1982) and Clark (1972, 1987) who studied traditional, elite institutions which operated in an environment different from that found today. These organizations which were much smaller apparently shared the values of academic freedom, autonomy and research yet often came into conflict for a variety of reasons including when in competition for resources. As the higher education climate changed culture research has been characterised by the emergence of work which explores the characteristics of sub-groups such as university departments and subject disciplines where cultural identity of these 'tribes' has proven to be highly insightful (Becher 1989). During the 1990s with the expansion of the university sector across the developed world higher education cultural research continued to evolve and its complex nature was increasingly exposed leading Barnett (2000 p48) to suggest that the 'multiversity' with its diverse activities, stakeholders, factions and interests was unable to share a single organizational culture. Nevertheless has not inhibited academics from trying to develop unifying theories which explain the changes taking place in higher education, for example McNay's work on higher education cultural typologies (1995;2007). One of the difficulties encountered when the focus of analysis is on the institution or a particular department or discipline, the interpretations which surface generally have a theoretical and observational basis: they rarely encompass the perceptions of the actors themselves (Silver 2003 p160).

Departing from this unifying view of culture the approach taken within this article favours an understanding which draws attention to the way meanings are attached to, or constructed around objects and subjects such as information technology and the actors who control or

use it as they develop and sustain social relations. What is stressed here is the importance of culture in understanding how organization is accomplished (Meek 1988). This type of approach is reflected in Herguner and Reeves (2000) study in a Turkish university which explores the complex relationship between academics and corporate management within an institution as mass education develops.

More recently Trivellas and Dargenidou (2009) studied the management of change and its effect on the job satisfaction of a number of stakeholders in a Greek University and Kuo (2009) explored how a variety of actors within higher education construct their unique cultures through their indispensable roles, functions, diverse perspectives and dynamic interactions with others. What emerges from these studies is that ideas and meanings are not homogenous but plural and contested. Thus organizational culture with the context of a new information technology system becomes '*a struggle for hegemony with competing factions attempting to define the primary purpose of the organization in a way that meets their perceived definitions*' (Parker 2000 p75) and cannot be dissociated from organizational power and politics.

Interest in culture within this article focuses upon its mediation of information and related technology within a higher education setting. Attention here is on the meaning of information and technology. Coombs, Knights and Willmott (1992 p60) argue that information technology has a social, symbolic as well as a material existence and any change in meanings attributed to its presence is mediated through organizational and workplace cultures. Nevertheless cultural analysis cannot be conducted without recognition of the way in which social practices are negotiated in relation to other key dimensions including power, control, subjectivity and organizational history.

### **Control and 'new managerialism'**

Managerialism is a distinct set of discourses and practices related to managerial effectiveness, flexibility and consumer awareness that have come to characterize the

private sector world of business (Clarke and Newman 1997). 'New managerialism' is a closely related concept which has seen its recent introduction into public service organisations across the world often at the instigation of government or their agencies (Deem and Brehoney 2005; Gilbert 2005; Lewis, Marginson and Snyder 2005; Santiago and Carvalho. 2008). Techniques which typify this 'new managerialist' approach are the use of internal cost centres, internal markets within organisations, the monitoring of efficiency and effectiveness through the measurement of specific outcomes as well as individual staff performance (Deem 1998). The manner in which 'new managerialism' has infiltrated and grown within public sector services is analysed in great detail by Clarke and Newman (1997) and in particular they chart the 'dispersal' of welfare activity away from the state and into 'the market'. These studies point to paradoxical developments where increasing autonomy for practitioners is accompanied by a strengthening of managerial controls over the activity of both organizations and individual employees.

Nevertheless it is not only social services which have seen the rise of this approach as is evident from Clarke, Gewitz and McLaughlin (2000) where 'the right to manage' within the domain of trusted autonomous professionals is now a legitimate activity for its own sake in the United Kingdom National Health Service (Gilbert 2005), local government (Van Gramberg and Teicher 2000), education (Briggs 2004) and the justice system (De Lint 1998; Dickens 2008; Vickers and Kouzmin 2001).

Higher education has not been immune to the 'new managerialist' project and has seen a growing body of literature on this topic. Rosemary Deem and colleagues have led on much of this research in universities. They suggest that 'new managerialism' has colonised much of United Kingdom higher education and that many manager-academics have adopted these principles, the associated discourse and practices which 'entitle' them to manage both academics and other staff in ways which re-enforce relationships of power and domination (Deem and Brehoney 2005). Australia too has generally embraced 'new managerialism'



across the university sector. Nevertheless it has had its difficulties and is illustrated in Anderson's work (2006) which explores how 'new managerialism' affected the working lives of ordinary academics in eight Australian universities as they increasingly spent more time on tasks such as quality assurance and form filling, tasks they felt were a waste of time. She noted how they resisted this control of academic freedom but concluded that although it was important to academic identity it was unsustainable in the long run without having detrimental effects on their health. In Europe too 'new managerialism' is gaining ground but has yet to have similar influence as it has in the United Kingdom, the United States of America, Australia and New Zealand. With an increasingly turbulent and competitive environment Santiago et al. (2006) believe that inevitably things will change and that collegial approaches to running universities will gradually disappear.

The mechanisms by which 'new managerialism' and its discursive practices are inculcated into and shape organizational life and culture are subject to much debate and analysis. It is a complex area beyond the boundary of this article to consider them all. However it is safe to say that rhetorically 'new managerialism' positions itself as ethically opposed to many of the professional discourses it has displaced which it charges with paternalism, arrogance and self interest. This in turn produces contested claims to represent service users and impacts on trust (Clarke and Newman 1997; Traynor 1999). In the 'new managerialist' organization trust is managed by positioning managerial governance in opposition to professional expertise where claims of promoting excellence in service delivery make it very difficult for any group to counter the managerial logic (Gilbert 2005). 'New managerialism' borrows the language of business and contextualises it for the public service within which it is situated. Much of this language is technical in nature and has the ability over a period of time to shape the identities, views and more insidiously the cultures of organizations and employees within ( Deem 2003; Deem 2004; Deem and Brehoney 2005).

## Enterprise Systems and Information Technology

There have been many attempts to theorise the place of information technology within contemporary society which would appear to indicate that information technology is rather more significant than many other technological innovation in terms of scope and scale of its impact on social and economic change (Coombs, Knights and Willmott 1992). This is also reflected in the on-going debate trying to interpret and understand the introduction of computer technology and associated issues of power, control and culture (Bloomfield and Coombs 1992; Bloomfield and Hayes 2009; Coombs, Knights and Willmott, 1992; Doolin 1998). Early authors taking a *technological perspective* viewed information technology as an external force that once introduced within an organization could be used to impact upon organizational life and bring about change (Leonardi & Jackson 2004). It gave little consideration to the nature of information, organization or individual actors. Research has shown that information technology is more complex than the *technological perspective* would indicate and that contradictory organisational consequences of information technology must be accounted for (Robey & Boudreau 1999).

In contrast to this, the *organisational perspective* views humans as causal agents allowing humans to plan, structure and induce change. In doing so, this approach is considered inherently rational and assumes organisational change as an outcome of planned choice - and thus prone to the influence of people and technology (Markus & Robey 1988). Given this, and in particular the focus on human agency and rational agency, the *organisational perspective* is often optimistic about the ability to design information systems that solves *perceived* organisational problems. However, this belief is based on the assumption that humans are rational and make pre-planned, conscious, decisions, and also that technology is malleable, and therefore easily moulded to fit a specific structure with an intended goal.

As a result, this has been challenged by research which has identified that the implementation of technology in the workplace often leads to unintended and unexpected consequences (Orlikowski 1996, 2007).

The *emergent perspective* acknowledges that there is an intrinsic relationship between technology, actors and context which can influence each other. The perspective also recognises that both the information systems and organisations are continuously evolving and changing over time and this may be reflected in the culture. More recently this work has been extended to develop a theory of 'sociomateriality' which specifically focuses on the 'entanglement' of people, systems and technology (Leonardi and Barley 2008; Orlikowski 2007, 2010).

This emergent/sociomaterial perspective is manifested in the work of Cornford and Pollock (2003), Pollock and Cornford (2004) and Wagner, Newell and Piccoli (2010) who have undertaken large enterprise wide systems studies within higher education in the United Kingdom and United States of America respectively. Their studies explored the practice of introducing the technology and how this practice often emerges in response to other factors and will change over time. Neither focussed on student administration but considered the various sub-groups which interacted with the new system and how they competed for authority over it. The United Kingdom research was concerned about the lack of flexibility of these types of systems and the organizational impact whereas the United States of America study explored the various discourses used by stakeholders to legitimise or resist the newly introduced systems and practice.

Although the development of enterprise wide systems within higher education may be planned with the specific intentions of changing the nature of organizational practice such as the collection and use of student data, unintended consequences may arise from the

contestation of information and the representations of organizational reality between different groups (Doolin 1998). Foucault provides some insight into this through his relational view of power. His concept of disciplinary power and control operates by enhancing the calculability of individuals through surveillance, observation and comparative measures that reference the norm (Foucault 1977, 1980). Various techniques, technologies and systems may be brought to bear on the actions of others from many places in the organization which make visible the work of individuals and calculate the extent to which they depart from the norm of performance (Bloomfield and Coombs 1992). Linked to a centre of calculation the individual is made calculable and made to calculate and thus learn to survey themselves through forms of self-regulation and self-control (Coombs, Knights and Willmott 1992). What emerges are organizational actors who are transformed into subjects whose sense of meaning, identity and reality are negotiated through their participation in a range of disciplinary and discursive practices.

Information technology is thought to increasingly mediate this process. The information systems which use information technology play a vital role in mobilising these values and norms through which individuals derive meaning and identity. They are commissioned and developed by powerful organizational actors whose particular representation of organizational reality are reinforced through the implementation and thus strengthen the framework of meaning within which the organizational participants control their own behaviour with norms associated with these discourses (Bloomfield and Coombs 1992; Doolin and Lawrence 1998; Knights and Murray 1994; Olikowski 1991).

Turning now to the case study the article focuses upon the key issue which emerged over the five years since SITS was introduced into New University and demonstrates how rational intentions to improve the collection of student data, the student experience and relieve

organizational stress led to outcomes which may not have been predicted at the start of the project and may yet have some detrimental implications for the organization.

### **The Case of New University**

In 2004/5 New University decided to purchase and implement an enterprise wide information package known as SITS (Strategic Information Technology Services) and went live with it in 2006. SITS cuts across the traditional boundaries of the organization and had the potential to result in a re-organization of work practices within the university. The perceived value of such systems is in their ability to transform the large volumes of student data overloading universities into knowledge that can allow proactive management (Fowler and Gilfillan 2003). Embedded within the SITS software are data structures and procedures of 'best practice' which are often incongruent with the university operational activities. Nevertheless the vendors suggest the system can be adopted in a flexible manner allowing some customisation to reflect individual university needs.

At the time of this study New University, a post-1992 university, had nine faculties with approximately 15000 full-time students and 5000 part-time students based in the UK. It has around 3000 academic and administrative staff across all faculties. The university is very hierarchical and reflects management structures prevalent during the 1980s when it was under local authority control.

In the early years of the New Labour Government (1998-2005) and with the growth in student numbers the university was struggling to collect and verify the student statistics required by central government in order to secure funding without incurring a financial penalty. As each year went by it risked having its funding 'clawed back' due to over-reporting of student numbers on degree programmes. Departments within faculties had their own

student administration systems and their own procedures around them. They had also been developed and maintained in-house by academics.

The study of the SITS implementation and its influence on organizational culture began in 2007 as an ethnographic study after what had been a very challenging year for many of the academics at New University. Studies which explore and interpret cultural change are by nature ethnographic and longitudinal (Martin 2002; Schein 2010). Ethnography can be defined as a *'style of social science writing which draws upon the writer's close observation of and involvement with people in a particular social setting and relates the words spoken and the practices observed to the overall cultural framework within which they occurred'* (Watson 2011:205). Schein (2010) argues that ethnography should involve participant observation, content analysis of documents, stories, myths, rituals, symbols and other artefacts. This may be supplemented and strengthened by interviews, statistical analysis and even small surveys (Watson 2011). Regardless of how ethnographic research is defined it must have at its heart participant observation.

The research began with an in-depth analysis of the documentation leading up to the SITS implementation. This was followed during 2008 by twenty two interviews (averaging one hour each) with university staff who had been in the university for a no less than five years. As in the case of Doolin and Lawrence (1998) these staff were interviewed more than once. Interviewees included both academic (one male associate Dean, two male principal lecturers and two female and two male senior lecturers) and administrative staff (five principal administrators, five senior administrators, all female staff) from the five largest faculties (Business, Arts and Humanities, Health and Education, Computing and Engineering, Design where student business was more complex as well as staff from the postgraduate research department (2 senior administrators, one male, one female), the SITS implementation team (1 female member of staff), the SITS project manager, the university Registrar (male). Recruitment of interviewees was not an easy task as the SITS project was a very sensitive

endeavour and even today raises mixed feelings within New University. A non-directive interviewing technique was used which allowed respondents to express their own views about organizational life in their own words rather than force them into predetermined categories (Hirschheim and Newman 1991). The interviews involved a discussion of issues surrounding the participants' prior experience of student information systems, the implementation of SITS, life in the organization and change during and after SITS went live. Interviews were taped with permission, transcribed and returned to the interviewees for verification. Anything that was felt by the participants to be problematic was removed from the transcript and after one interview a respondent decided to wholly withdraw her transcript.

Participant observation took place throughout the research study and was recorded using a diary. As a member of staff one of the authors was able to participate in the activities which contributed to the academic role in providing student data. Working alongside other colleagues she was able to observe the action of various individuals and interpret them in order to gain insight into the cultural manifestations of the organization (Bryman 2004).

Burgess (1984) also argues that participant observation can increase the richness of the research and Waddington (2004) suggests that being part of day to day activities or important events can provide valuable understanding of organizational practice which can become ritualised over time. In order to understand administrative life the same author spent a number of periods of observation during peak times in the academic calendar: student enrolment in October, marks recording after assessment in February and examination board preparation time in June.

Using a general inductive approach informed by grounded theory (Crabtree and Miller 1999; King 2004) the interviews, documentation and diary data was coded according to theoretical

concepts suggested by the data rather than imposed by the researcher. The approach used involved a process of developing initial categories, grouping data, identifying patterns and then making comparisons to uncover shared elements and properties (Barley 1990; Van Maanen 1979). The documentation and transcripts were also read to identify statements which reflected values, beliefs and assumptions about SITS as well as for evidence of organizational stories, myths and rituals which may have arisen over the period of the research. Although a great deal of rich data emerged the following focuses upon how SITS has been implemented within New University and how its interpretation within the organization has supported the managerialist agenda and produced some unexpected consequences.

### **Moving to Centralized Control through SITS?**

The last ten years has seen the growth of enterprise wide systems and various other applications which reflect a concern with management of higher education – with resource allocation, efficiency and budgeting – rather than with academic applications (Fowler and Gilfillan 2003; Pollock and Cornford 2004; Wagner, Newell and Piccoli 2010). This is not unlike what has taken place in other public sector services such as the National Health Service (Scrivens, 1987). Initially New University utilised academic skills to support their efforts:

*“We wrote a lot of the departmental systems in-house. We wrote our own timetabling system. We wrote all sorts of systems that took central information and put it in around the university. Many of these systems were used by academics to support the departmental business. It was very localised and decisions were made by departments.”* (Academic A, in Computing department)



However this decentralised approach to data collection resulted in difficulties in presentation of standardised information to government but allowed the faculties to deal with their own particular academic and student needs e.g. nursing students or students on teacher training programmes and control of the interpretation of the data. Eventually a decision was taken to adopt a more consistent system; a decision which on the surface seems rational but was supported by rhetorical devices of ‘*it will make life better for staff*’; ‘*it will enhance the student experience*’ which clearly sought buy in from all departments in the university.

The development, introduction and content of enterprise wide systems such as SITS are likely to be sites of conflict between various organizational factions (Bloomfield and Coombs 1992). In fact even before SITS software is adopted within an organization it embodies a particular ‘best practice’ view of university student data; it is a social construction developed against a backdrop of information technology professionals and other knowledge and associated ways of thinking and speaking (Wagner, Newell and Piccoli 2010). Thus it is not the technology per se which is important but the significance of the SITS information system, whom it will empower and what it potentially makes visible within the organization e.g. performance data. In 2004/5 a group led by the Director of Finance took a decision to purchase SITS. A small team of central administrative staff and managers were assembled and discussions were held with the vendors. From this emerged the SITS strategy:

*“Representative key stakeholders must be involved in the consultation process....School Registrars and key users will act as product champions, and the Registrars Senior Managers Group will be advised by key specialists and practitioner and focus groups and will in turn advise the Project Director”* (The Student Systems Replacement Strategy, 2005)

The key users and stakeholders were taken from the administrative function within each department. The numerous documents produced at the time detail the plans going forward, how the change-over to the new SITS system would occur, the training that would be required for staff and how communication of the project would take place. Control of the project up to ‘going live’ was to be tight and kept within a discrete body of management staff.

The discourse here emphasised the need for management control because of the technical

nature of the system and was aimed at getting the chosen administrative staff aligned to the organizational goals (Deem and Brehoney 2005; Gilbert 2005; Wagner, Newell and Piccoli 2010). Academics on the whole were oblivious to what was going on:

*“I was not involved during the implementation. I sit on the University Teaching and Learning committee and was only told about how it (SITS) was progressing. The downside from my point of view is that I can’t believe that there were no academics involved in those discussions. The issue for me is that academics are the end users of SITS. It must be there to support an academic purpose primarily to do with examination boards.”* (Associate Dean, Learning and Teaching)

By excluding academics and centralizing early control of the SITS project has its consequences as suggested by Bloomfield and Coombs (1992 p474)

*“the effects of the new information systems on management practices of particular groups are under-determined by the intentions of the powerful groups shaping the systems at the centre of the organization”* .

### **New Management Groups**

‘New managerialism’ is frequently characterised by the growth in the number of managers and the discourse surrounding their roles (Deem and Brehoney 2005). In order for SITS to be introduced into New University a number of new groups or teams were established. The two groups that played a major role in the project were the SITS implementation team (technical staff employed from internal university resource and external agencies) and the SITS liaison group (senior administrative staff seconded from each of the departments) both of which were intended to be temporary structures to be dismantled after the system was up and running. The SITS implementation team were seen as the technical experts, housed in their own suite of offices, trained by the SITS vendors, who would ensure that the system went live without too much trouble. The SITS liaison group would support departments in getting the data into the system and extracting the requisite information. Examination of minutes of their meetings suggest the focus prior to going live was on technical issues with little evidence of concern about the effect these changes would have on academic life. This neutral representation of systems and technology is not unusual within these types of

information technology projects as the initial focus is to ensure that the physical resources are in place and being accessed by the appropriate staff ( Coombs, Knights and Willmott 1992; Parker 2000). Nevertheless the decisions on who would have access to SITS are political and subject to control of the dominant group (Doolin 1998).

In partnership with the vendors the university senior management set some very challenging targets for 'going-live' with the new system. Intended regular communications with all staff as indicated in the '*Project Communications Strategy*' proved difficult and consequently what emerged were general emails to all university staff which most academics ignored.

One area that was of concern for the new SITS groups was student data migration from all of the department systems to the new SITS system. SITS has a very rigid set of data structures which cannot be altered. It was the responsibility of the SITS implementation team to transfer the current university student data into the structures available in SITS. This was not easy as has already been stated each department kept their student records according to their needs. They were also faced with determining how the standardised approach to student data collection would be managed going forward. Pollock and Cornford (2004) suggest that enterprise systems such as SITS overwhelm organizations so that they have little option but to implement 'default' settings which tend to emphasise similarities between organizations and not their differences. Thus individual departmental needs are disregarded in the quest to be 'up and running'. The SITS liaison group was asked to assist and advise on new degree programme codes which they did without reference to the academic colleagues who actually managed the students. This assumption of 'knowing what is best for the rest' can be a feature of enterprise systems implementations as a dominant group, in order to make sense of their identity, imposes a view of practice intended to enhance their credibility and competence (Nicolini 2007). In fact the lack of academic knowledge was not seen to be an issue (Briefing paper from SITS Project Manager, 2005).

## **Implementation problems**

At the time when a system is 'going live' organizational resistance is a warning bell that there are misalignments and indicates that issues may need accommodation through sociomaterial adaptations which arise at the boundaries between groups disrupted by attempts by one group to impose new practices on another (Wagner, Newell and Piccoli 2010). In the case of SITS, training of sufficient staff to be able to use the system in time for 'going live' in August 2006 was an issue. The SITS vendors had a specific approach to training which they passed on to the SITS implementation team. This approach ensured that everyone used the system in the same way. However this training by the vendors was expensive and could not be rolled out across the university. Therefore the SITS project manager decided that the SITS implementation team would provide training for all. The problem was there were insufficient trainers to cover every administrator who needed training on SITS in time for 'going live'. Thus the training was done in large groups in information technology laboratories. Staff complained.

Added to the quality of training issue the SITS implementation team would not allow cascade training '*in case the wrong message was given*' so tensions were high as August 2006 approached. The power to determine the nature of the training is indicative of the growing internal credibility of the SITS implementation team not just with the senior management of the university but also the departmental staff taking part in the training who may never have encountered them prior to training and this acts to transform and re-enforce their identity and position in the organization (Coombs, Knights and Willmott 1992).

Academic staff knew little about SITS until they returned from annual leave in September 2006. Student enrolment had taken place without their input and when term began there was chaos: staff were in the wrong rooms, students were on the wrong degree programmes, class lists were inaccurate. This was a result of a previous decision taken by the SITS

implementation team and the SITS liaison team when developing degree programme codes for the system:

*“At enrolment we found problems with the modules. Students were attached to the wrong modules.... This was due to misunderstanding about codes... I spent so much time correcting data, checking... It then impacted on Blackboard.. students going to the wrong lectures.” (Administrator 4)*

When the Heads of department approached the SITS implementation team they were told it was ‘teething problems’ or that they were the only department with that particular problem. The SITS liaison team were overworked trying to sort out problems within the departments, problems that had not been anticipated.

### **Increased Formality and Tension**

Tension between academics and administrative staff were high during 2006/7 and this was also the case within the administrative teams who were dealing with SITS on a day to day basis. Managers within the departments believed they had to ‘*sort things out*’ and what emerged over a number of months were new processes and control mechanisms to ensure that SITS delivered the student information. These processes and mechanisms would safeguard the quality of the data and provide a better service for the students. As Gilbert (2005) argues it then becomes very difficult for any group to counter the managerial logic. Administrative staff were re-organised across the university to reflect SITS best practice. Nevertheless there was some dissent:

*“The system is so complicated, using codes, jargon and real problems with screens that it takes five times longer than the previous one... It is time consuming and complicated... we have a full time team working on it... SITS is their job now.. and we have **good housekeepers** who know the system very well. We didn’t have them with the Marks Recording System as we knew the system inside out.” (Administrator, 6)*

A new group of SITS administrators emerged in the departments during this period, the Good Housekeepers. These individuals were SITS experts in data entry and information retrieval and because of the complexity of the system became very powerful. As in the United States university studied by Kuo (2009) the Good Housekeepers have continued to develop as a distinct group in New University and have made themselves indispensable to their individual departments.

The processes and control introduced in 2006/7 have also impacted upon academic staff. For example academics no longer have access to the 'system' recording of marks for examination boards and have found themselves much more regulated by the departmental SITS administrative requirements:

*" I put my marks into an EXCEL spreadsheet that does not talk to SITS. I put the marks into the Blackboard gradebook that does not talk to SITS. So not only have I recorded my marks three times – on the examination paper, EXCEL and Blackboard which increases the possibility of mistakes BUT I then have to put them onto a piece of paper that I hand to an administrator who then inputs them into SITS. This is nuts! I have asked if my spreadsheet can be uploaded into SITS or the gradebook – but the system says NO! I get into trouble for asking the questions.(Academic 6 who is also a Course Leader)*

Examination boards are also conducted in a different manner. SITS uses algorithms to calculate marks for modules and then the overall year average:

*" ... discretion has now almost disappeared at the examination board. Degrees are now awarded mathematically. So if you get 59% and more than half of your modules are over 60% then you get a 2.1. If you get 59% and half of your modules scored less than 60% you get a 2.2." (Associate Dean).*

Using SITS to calculate degree classifications has allowed management to control academics behaviour at examination boards without actually being present. Academics find it difficult to challenge the logic of the system and SITS as to do so would be to argue for paternalism and self-interest and deny students fairness (Clarke and Newman 1997). Added to this are penalties for not abiding by the SITS rules. Administrators report academics to their managers when they fail to meet SITS deadlines and it can be seen that academics are increasingly becoming subjugated to a system that challenges their sense of meaning,

identity and reality through their participation in an increasing range of disciplinary practices (Coombs, Knights and Willmott 1992).

### **The Unintended Consequences of SITS adoption**

SITS and its related systems, process and people have had a massive impact upon New University over the last four years some of which may continue into the future and may influence university cultures for many years to come. Robey and Boudreau (1999 p 171) suggest that unintended consequences of an advanced information technology adoption within an organization may be categorised into three overlapping areas: *expected consequences do not occur; different consequences may result; contradictory consequences result from the same technology*. It is to these that the article turns and discusses how these may affect the organization going forward.

The rhetoric of the original SITS implementation discourse was that the new system would make *'life better for staff'* and *'enhance the student experience'*. Administrative staff in many parts of the university have seen their workload increase due to SITS due to the amount of data entry required and the difficulty of using the technology. Not all administrative staff have access to SITS due to the limited and costly nature of the licences required to access and operate SITS. Some academic staff also would argue that the rules and procedures introduced around SITS have impeded them in making more efficient use of associated technology such as spreadsheets at assessment times. Thus it can be seen that decisions on who has access to SITS and how its environment is managed is highly political and helps to re-enforce relationships of power and domination (Deem and Brehoney 2005).

In terms of *'the student experience'* students enrol onto their degree programme each year via a SITS portal on the university website and now have access to more personal academic data than ever before. However, this has been at the expense of developing relationships with programme administrators and academic tutors who formally took on the task of students enrolment and providing feedback on marks at assessment times. The senior

management of the university argue this allows a more efficient use of resources and this logic is difficult to counter (Gilbert 2005).

The adoption of SITS has led to *different consequences* occurring. The fact that SITS cannot handle all student data in a useful format for a number of academic departments has led to the running of parallel systems to support their needs. It is not politic to discuss any 'work arounds' within departments as those that are doing so could be viewed as dissenters departing from the required university norms. Regardless of the local practice all relevant data still has to be entered on SITS and this can mean many long hours for those tasked with making the adjustments. Thus stress is evident at peak points in the academic year especially where deadlines are set and staff suspect they are being monitored through the SITS system.

Another consequence of SITS has been the growth in administrative staff with technical skills and the increased status all staff associated with the SITS environment. As has been observed by Deem (2003, 2004) this can play a major role in influencing culture. Thus the original SITS implementation team, a group which was intended to be temporary at the outset of the project, has become a permanent fixture, is located at the centre, plays a role in the university which was anticipated would be done within departments by administrators and has added to university costs. The SITS liaison team now called the SITS user group are also permanent and act as spokespeople for the departments and their administrative staff. 'Good Houskeepers' a group of SITS super-users are still present within the departments and as highly skilled administrators are paid a premium for their technical ability. For a number of administrators who have been in the university for a long time this focus upon SITS skills is seen as divisive and has led to an 'us and them' culture within departments and across the university.

This growth in highly technical administrators may also be seen as a contradictory consequence as academics appear to have been deskilled. From an academic perspective



SITS has heralded a new world for many staff whose *raison d'être* was 'the student' from enrolment to graduation. Trivellas and Dargenidou (2009) argue that when change is introduced into an organization it is important to recognise that there may be some staff whose job is badly impacted by that change and whose morale may dip badly. SITS has improved the working lives of some but not others and consequently the academic staff are becoming even more disengaged from the university body reflecting what Taylor (1999) describes as 'organizational fragmentation'. With the introduction of the new United Kingdom student fees regime in 2012 this disengagement may be counterproductive when students begin to assert their 'consumer rights'. How the university rectifies this will be challenging.

'New managerialism' and its related discourse is increasingly evident within New University and its growth appears to have been legitimised through the SITS adoption. Looking back over the five years since SITS was introduced there have been subtle yet noticeable changes in cultures across the university. Administrative management now appear to have increasing power within the university and from many academic staff perspective resistance appears futile. This power is evident as managers introduce new information technology applications to monitor and manage academic funding applications. The university is also piloting the use of an information technology system to manage academic research outputs. Little consultation has taken place with academic staff and once again the rhetoric is around efficiency and effectiveness.

It is impossible to categorise New University's culture using McNay's (1995) typology because of the numerous groups and individuals which make up the institution. Yet SITS has appeared to centralise power and impacted upon the nature of organizational life within it. The university has come to resemble a 'corporation' which is increasingly bound up in tasks which sap organizational energy and which deflect any form of entrepreneurial activity, something which is seen as strategically important for the university over the next five years.

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