Power and Politics in a System Implementation

By

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Submitted in fulfilment of the requirements for the degree of
Doctor of Philosophy
Deakin University (June, 2005)

Acknowledgements

I would like to express my utmost gratitude and appreciation to the following people for their support and encouragement during my preparation of this thesis:

My principle supervisor, Professor Brian Corbitt. For his ability to motivate and for his belief in my abilities, thank you. For providing invaluable feedback. For being honest and constructive, and helping me to visualise an overall format for the study.

My associate supervisor, Dr Darryl Coulthard. For his honesty and support throughout the thesis, as well as the ability to listen to my ramblings and make sense of it!

My father, Janusz and mother, Danuta. My brother, Dion and grandmother, Mrs Janina Nizniak. For their love and belief in my ability. For the long distance phone calls of reassurance and encouragement.

My beautiful partner, Miss Ainslie Gable. My Australian family, Helen and Peter Stewart. Thank you for your belief, love and support in helping me get through this thesis.

My friends, both in Australia and New Zealand. For getting me out of the house for a bit of fun every now and again.

The staff in the School of Information Systems, Deakin University. For ongoing general support. For allowing me to bounce my ideas around and for giving useful feedback. For light hearted encouragement when I needed it.

To all those who participated in this study in any way. Whether it was by being interviewed or by offering advice, it was all appreciated.

This thesis is completed in memory of my grandfather, Mr Wladyslaw Nizniak (21/12/1922 - 12/07/2004).

My warmest thanks.

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Abstract

The central concern of this study is to identify the role of power and politics in systems implementation. The current literature on systems implementation is typically divided into two areas, process modelling and factor based studies. Process modelling classifies the implementation into a linear process, whereas factor based studies have argued that in order to "successfully" implement a system, particular critical factors are required. This literature misses the complexities involved in systems implementation through the human factors and political nature of systems implementation and is simplistic in its nature and essentially de-contextualises the implementation process.

Literature has investigated some aspects of human factors in systems implementation. However, it is believed that these studies have taken a simplistic view of power and politics. It is argued in this thesis that human factors in systems implementation are constantly changing and essentially operating in a dynamic relationship affecting the implementation process. The concept of power relations, as proposed by Foucault (1976, 1977, 1978, 1980, 1982), have been utilised in order to identify the dynamic nature of power and politics. Foucault (1978) argued that power is a dynamic set of relationships constantly changing from one point in time to the next. It is this recognition that is lacking from information systems. Furthermore, these power relations are created through the use of discourse. Discourse represents meaning and social relationships, forming both subjectivity and power relations. Discourses are also the practices of talk, text and argument that continuously form that which actors speak.

A post-structuralist view of power as both an obvious and hidden concept has provided the researcher a lens through which the selection and implementation of an enterprise-wide learning management system can be observed. The framework aimed to identify the obvious process of system selection implementation, and then deconstruct that process to expose the hegemonic nature of policy, the reproduction of organisational culture, the emancipation within discourse, and the nature of resistance and power relations. A critical case study of the selection and implementation of an enterprise-wide learning management system at the University of Australia was presented providing an in-depth investigation of the implementation

of an enterprise-wide learning management system, spanning five years. This critical case study was analysed using social dramas to distinguish between the front stage issues of power and the hidden discourses underpinning the front stage dramas. The enterprise-wide learning management system implemented in the University of Australia in 2003 is a system which enables academic staff to manage learners, the students, by keeping track of their progress and performance across all types of training activities.

Through telling the story of the selection and implementation of an enterprise-wide learning management system at the University of Australia discourses emerged. The key findings from this study have indicated that the system selection and implementation works at two levels. The low level is the selection and implementation process, which operates for the period of the project. The high level is the arena of power and politics, which runs simultaneously to the selection and implementation process. Challenges for power are acted out in the front stage, or public forums between various actors. The social dramas, as they have been described here, are superfluous to the discourse underpinning the front stage. It is the discourse that remains the same throughout the system selection and implementation process, but it is through various social dramas that reflect those discourses. Furthermore, the enactment of policy legitimises power and establishes the discourse, limiting resistance. Additionally, this research has identified the role of the "State" and its influence at the organisational level, which had been previously suggested in education literature (Ball, 1990).

Supporting Publications (Appendix B)

Nguyen, L., Torlina, L., Peszynski, K. J., and Corbitt, B. (2005). Power Relations in Cyber Communities. To appear in *Electronic Commerce Research Journal, 5*(4).

Corbitt, B. J., Peszynski, K. J., & Boon, O. (2005). Managing Complexity and Institutionalization: Power and Politics in ERP Implementation in an Australian University. In L. von Hellens, S. Nielsen & J. Beekhuyzen (Eds.), *Qualitative Case Studies on Implementation of Enterprise Wide Systems* (pp. 160-175). Hershey, PA: Idea Group Publishing.

Peszynski, K. J., Corbitt, B. J., and Saundage, D. (2004). Deconstructing Power within a Strategic Information System. *Proceedings of the 15th Australasian Conference on Information Systems (ACIS)*, Hobart, Australia, December 1-3 2004.

Peszynski, K. J., and Saundage, D. (2004). Power, Politics and Legitimacy in Information Systems Implementation: An Ethnographic Study. *Proceedings of the 15th Australasian Conference on Information Systems (ACIS)*, Hobart, Australia, December 1-3 2004.

Boon, O., Corbitt, B., and Peszynski, K. J. (2004). Reassessing critical success factors for ERP adoption – a case study, *Proceedings of the 8th Pacific Asia Conference on Information Systems (PACIS)*, Shanghai, China, July 8-11 2004

Nguyen, L., Torlina, L., Peszynski, K. J., and Corbitt, B. (2004). Power Relations in Cyber Communities. *Proceedings of the 12th European Conference on Information Systems (ECIS)*, Turku, Finland, June 14-16 2004.

Peszynski, K. J. and Corbitt, B. (2003). Putting the Power in Power, Politics and MIS Implementation: A Reworking of Markus (1983) 20 years on. *Proceedings of the 14th Australasian Conference on Information Systems (ACIS)*, Perth, Australia, November 26-28 2003.

Chapter One – Introduction

1.1 Introduction

This thesis is a study of the selection and implementation of an enterprise-wide learning management system at the University of Australia[1]. The enterprise-wide learning management system, implemented in the University of Australia in 2003, is a system which enables academic staff to manage learners, the students, by keeping track of their progress and performance across all types of training activities. The learning management system allows staff to create learning resources, deliver content, monitor student participation and assess student performance. The focus of the study is on the social issues involved in systems selection and implementation, rather than on the system implementation process itself. The technical aspect of systems selection and implementation refers to the tools, methodologies, procedures and techniques utilised to implement a system, whereas the social aspect of systems selection and implementation refers to the human factors involved, such as the political environment. Describing the social factors involved in systems selection and implementation will help provide richness to an understanding of what contributes to either a successful or flawed implementation process.

1.2 Systems Selection and Implementation

The failure of an information system in an organisation can have a crippling effect on the organisation itself, the members of that organisation and the reputation of that organisation. In other words, if a system is not successfully implemented, the company could lose potential profit. For example, RMIT, a University in Victoria, Australia, mismanaged the implementation of the Academic Management System, resulting in students not being able to arrange enrolments, invoices, subject changes and timetables (Royall, 2002). Subsequently, the system was abandoned and members of the senior management and project team were fired.

Stories of failed systems occur regularly in the media, which damage the credibility of organisations and turn potential customers away. The costs of systems failure vary. Typically they include firstly, economic costs, such as investments in

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[1] Full details of this case study can be found in Chapter 4.2

equipment and labour. Secondly, there are costs of missed opportunities, where a system fails to deliver on benefits promised. Finally, there are costs incurred in terms of client service or risks to the community (Sauer, 1993). In the case of the failed implementation at RMIT, the users of the system, students were unhappy with the system and called for the resignation of the Chancellor of the University, followed by the Vice-Chancellor (Royall, 2002). People become wary of information systems. This is partly attributable to the media as they would have us believe that information systems are constantly failing.

There are many other stories of failed systems implementation that have also had significant consequences. Neumann (1993, p. 146) highlights fourteen different cases of failed systems implementation. Examples include:

- A new child support checking system in Virginia, USA, which experienced massive delays, confusion, lost checks, delayed payments, and improper seizure of tax refunds. Operations costs were expected to be triple the original estimates;

- The Bank of America spent US$23 million on an initial 5-year development of MasterNet, a new computerized trust accounting and reporting system. After abandoning the old system, they spent US$60 million more trying to make the new system work, and finally gave up. Departed customer accounts may have exceeded billions of dollars;

- Oklahoma hired a major accounting firm in 1983 to design a US$.5 million system to handle its workers' compensation claims. Two years and more than $2M later, the system still didn't work. It was finally finished in 1987 for nearly US$4 million; &

- The software for the modernisation of a satellite tracking control facility in the United States was about seven years behind schedule, about US$300 million over budget, and provided less capability than required.

It is therefore important to implement successfully a system and ensure that it is running well and that the users, both customers and employees alike, are sufficiently satisfied with the system to want to continue using it. However, this raises crucial issues for organisations implementing systems. How can successful system implementation be guaranteed? Is it by having good project management, getting the system implemented on time and on budget? Or is it by the technical team

developing the system in a way that attracts users which is bug free? Or is it through the involvement of end users and customers, identifying what they want and catering to their needs? Or is it the top management, those funding the project, believing that improved efficiency and effective can be delivered with such a system? Each aspect is in itself important, but ultimately, can such a guarantee of successful system implementation be offered? This leads to perhaps the most significant question in systems implementation: can successful systems implementation be guaranteed at all?

1.3 Problem domain

These questions lead the researcher to the problem domain. The information systems community need a deeper understanding of what is involved in systems implementation, and more specifically, what enables successful implementation and what contributes to unsuccessful systems implementation. The focus of this study is on the social aspects of system selection and implementation as opposed to the technical or actual system implementation process. The researcher is interested in how the social component of system selection and implementation affects the overall process. The technical component of system selection and implementation has already received significant discussion and has led to two approaches to systems implementation, namely process models and factor-base studies. These traditional approaches to systems implementation are discussed in greater detail in Chapter 2.2.

Proponents of the first approach, process models, argue that systems implementation should follow a particular procedure, typically a five or seven-step process known as the system development lifecycle (SDLC) (Davis, 1974; Hoffer, et al., 1998; Avison and Fitzgerald, 2003). If a project manager or system implementation team follows the linear step-by-step process, then they will have a system implemented successfully. This approach has created multiple methodologies, or stock or package of methods, such as the Structured Analysis, Design and Implementation of Information Systems (STRADIS) (Gane and Sarson, 1979); the Structured Systems Analysis and Design Methodology (SSADM) (Downs et al., 1988; Weaver, 1993); and Object-oriented analysis (Booch, 1991; Coad and Yourdon, 1991; Martin and Odell, 1992). These methodologies can then be employed in the implementation process, allowing the implementation team to get various perspectives from the

stakeholders of what they require, and how they can use that information to implement a system.

Advocates of the second approach, factor-based studies, argue that in order to successfully implement a system, certain critical factors are required to be in place (Rockart, 1979; Ginzberg, 1981; DeLone and McLean, 1992, 2003). Typically, research has indicated that the absence of top management support (Ginzberg, 1981; Kydd, 1989; Corbitt 2000), poor attitudes towards information systems (Corbitt, 1997) and absence of education and training (Cragg and King, 1983) lead to failure of the information system implementation. Instead, the support of management (Somers and Nelson, 2001; Poon and Wagner, 2001; Hartman and Ashrafi, 2002), clear goals and objectives of the proposed system (Averweg and Erwin, 1999; Teo and Ang, 1999; Somers and Nelson, 2001), project management (Somers and Nelson, 2001; Akkermans and van Helden, 2002; Havelka and Lee, 2002) and the available information technologies (Khandelwal and Ferguson, 1999; Somers and Nelson, 2001; Croteau and Li, 2003) all contribute to a successful system. However, it is argued that factor-based studies provide somewhat obvious findings that perhaps do not reflect the complexity involved in systems implementation.

However, it is argued here that both of these approaches are structuralist, and essentially over simplistic in nature. These approaches do not provide adequate detail about the complexity of the process, nor do they tell us anything specific about the factors or steps involved with systems implementation. Such factor studies are rarely reflective of the processes which occur in systems implementation. Rather, the traditional approaches tend to provide structure to enable understanding of a complex process. They reduce the complex to an easier, simpler structure. Implementation is neither driven entirely by factors of success or failure (Corbitt, 1997). Rather, the implementation process in information systems is more reflective of the stakeholder relationship interactions and the impact of the context, either business, organisational, social or cultural, in which the implementation occurs. However, the traditional approaches ignore or underplay the political aspects involved in stakeholder relationships, as well as elements of power in systems implementation. As a result, some authors have taken a more socio-technical approach to information systems implementation (Mitev, 2001; Orlikowski, 1992). In order to do this, we as researchers, must "move beyond commonsense explanations of failure and success

and find more complex and richer ways of understanding the use of IS in organisations through the inclusion of broader social, economic, political, cultural and historical factors" (Mitev, 2001, p. 84). By taking this approach, we can enable a better understanding of the power and politics involved in systems implementation, by focusing on social issues in the implementation process (Chapter 2.5).

Rather than take the social aspect of systems implementation at face value, we need to understand and perform research that recognises the complexity and historical construction of the members of the implementation team and process (Mitev, 2001). We currently cannot describe or explain the political environment in systems implementation because politics in implementation endures influence, pressure, dogma, expediency, conflict compromise, intransigence, resistance, error, opposition and pragmatism (Ball, 1990). That is, the implementation process is complex, messy, inconsistent, ambiguous and contains dilemmas.

1.4 Research Question

The approaches adopted in previous studies have over-simplified a complex process influenced by social factors, rather than exploring the inherent political issues involved with systems selection and implementation. This makes the systems implementation process messy, inconsistent and imbued with ambiguity, rather than structured or manifestly associated with factors creating success. The motivation behind this research is that previous studies of systems implementation and social factors have been structuralist and simplistic (Mitev, 2001). Previous studies reduce a complex process into various steps with particular factors involved in order to implement a system. It is argued that the systems selection and implementation process does not follow the linear system development lifecycle, nor do the critical success factors truly represent what is occurring in the systems implementation process. The researcher wishes to explore and report on what occurs during the selection and implementation of a new system in an organisation, paying particular attention to the role of power and politics in the systems selection and implementation process. This motivation has led to the development of the following question:

How is power and politics an integral part of the systems selection and implementation process?

This also raises the following sub-questions:

What are the positive and negative aspects of power and politics in the systems selection and implementation process?

How can this understanding of power and politics be incorporated in the systems selection and implementation process in order to help researchers and practitioners?

By undertaking this research, we can identify outcomes of the selection and implementation of an enterprise-wide system by providing a better understanding to the human factors involved, and specifically the power and politics in systems selection and implementation. It should be noted, however, that the outcomes of this study do not aim to provide a solution to the power and politics involved in systems selection and implementation, but to fully recognise that there are political factors involved in implementing a system.

Nevertheless, there is also potential to gain insight into the lessons learnt from that particular implementation about what can contribute to a better implementation process – specifically, that the literature on implementation methodologies and tools is not a true representation of the systems selection and implementation process. For if power and politics in systems selection and implementation is central to the systems selection and implementation process, then the research on critical success factors and process models do not fully represent the social aspect and complexities involved in the selection and implementation process.

The objective of this study is not to re-write or change the stages involved in the systems selection and implementation process. There are common steps or stages in that implementation process. The objective of this research is not to define what the steps are, or what is involved in them. Instead, the objective of this research is to review the role, influence and importance of power and politics in the systems selection and implementation process. This cannot be done within the current common and structuralist approach. Rather than concentrate on the technical aspect of systems selection and implementation, researchers should undertake research

based on the supposition that managerial assumptions are *socially constructed* (Chapter 2.5) (Mitev, 2001).

1.5 Research Approach

The nature of this research suggests that a post-structuralist analysis of power and politics in systems selection and implementation is required in order to provide a richer understanding of the phenomena under investigation. A critical theory approach has been adopted in this study as the researcher is then able to critically assess the social reality being studied, and therefore create awareness and understanding of the various forms of social domination.

Ngwenyama and Lee (1997, p. 153) have argued that the critical approach is different to the positivist, in that the critical approach, as adopted in the Information Systems discipline, observes people "not as passive receptacles of whatever data or information that is transported to them, but as intelligent actors who assess the truthfulness, completeness, sincerity, and contextuality of the messages they receive." The critical approach also differs from the interpretive approach, as the critical approach "requires the researcher to attend to not only the matter of mutual understanding, but also the matter of the emancipation of organisational actors from false or unwarranted beliefs, assumptions and constraints" (Ngwenyama and Lee, 1997, p. 153-154). Details about the methodology used are presented in Chapter Three.

To facilitate clarity and to provide some boundaries for the study, a case study methodology has been adopted, as it allows the researcher to identify what it is the subjects are doing, in their own words. Benbasat et al. (1987, p. 370) note that a case study allows for the exploration of "a phenomenon in its natural setting, employing multiple methods of data collection to gather information from one or a few entities." Benbasat et al. (1987) argue that case study research is well-suited to the information systems discipline not only because "the researcher can study information systems in a natural setting, learn about the state of art, and generate theories from practice" (Benbasat et al., p.81), but also "to understand the nature and complexity of the processes taking place" (Benbasat et al., p.81). The benefit of using a case study in developing a deeper understanding is that its method usually focuses on one or a few cases to be investigated to represent other typical cases. A case study also covers a

small scope of a case and investigates the case in detail (Borg and Gall, 1989; Denscombe, 1998). By being immersed in the organisational activities, the researcher is able to gain richer information as to how power relations are created and how they may transform over time for the systems implementation group.

Data was collected from interviews and existing organisational documents. Staff involved in implementation of a learning management system in the University of Australia were interviewed and their data supplemented by and cross referenced with university policy documents, minutes of meetings and other publications. The enterprise-wide learning management system was selected and implemented to enable academic staff to manage teaching and learning by keeping track of student progress and performance across all types of learning activities. They used a range of tools to create learning resources, deliver content, monitor student participation and assess student performance. The systems selection and implementation process studied in this thesis has been on-going since 2000. The systems selection and implementation process of the enterprise-wide learning management system has been written in narrative form, telling the story of the selection and implementation process at the University of Australia. This approach has been adopted as the narrative form "supports a unity of form among the original interview situation, the analysis, and the final report" (Kvale, 1996, p. 184).

1.6 Structure of the Thesis

Chapter Two provides a review of the literature on systems implementation, specifically the two approaches to systems implementation, process models and factor-based studies, before proceeding onto a discussion of the weaknesses within the literature in regards to a post-structuralist view of systems implementation. A review of power-related information systems studies will then be discussed, again highlighting the weaknesses of the current literature in regards to the structuralist approach being taken. A framework will then be suggested that takes a post-structuralist view of power and politics in the realm of systems selection and implementation, including issues of resistance and control.

Chapter Three will discuss in greater detail the approach taken in this research. A post-structuralist, critical view of power and politics in systems selection and implementation is required, in order to provide a richer understanding of the

phenomena under investigation. A critical theory approach was adopted for this study as critical theory creates awareness and understanding of the various forms of social domination. By using critical theory, the researcher is able to critically assess the social reality being studied.

Chapters Four, Five and Six present the research in context – in other words, the narrative, or story, of the selection and implementation process of an enterprise-wide learning management system at the University of Australia. Each chapter deals with a specific phase of the implementation process. Chapter Four discusses the historical context of the organisation, and the decision to implement a learning management system. By providing this detail, the reader is able to ascertain the strategic direction of the university as well as being able to identify any issues that arose in this historical phase of the University, which may impact the current selection and implementation process.

Chapter Five discusses the selection process involved with identifying and recommending an enterprise-wide learning management system to the senior members of the university. This phase of the selection and implementation process saw the establishment of two working groups, which were given the task from the Deputy Vice-Chancellor to recommend an enterprise-wide learning management system. Requirements were gathered for the new system, which involved the wider university community, as well as the two working groups. A list of 64 potential learning management systems were identified, which was then reduced down to a working subset of five systems, before being further condensed to a list of three potential systems. Debate and discussion were held over the three potential systems and one system was identified, by the majority of the working groups, to meet the requirements established earlier, which was then recommended to the senior members of the university.

Chapter Six discusses the implementation of the enterprise-wide learning management system at the University of Australia. This phase of the selection and implementation process saw a number of changes occurring at the senior level of the university, with the old Vice-Chancellor retiring and a new Vice-Chancellor being appointed. Further changes occurred as the Deputy Vice-Chancellor resigned within the first six months of the appointment of the new Vice-Chancellor, and a new senior

position, the Pro Vice-Chancellor (Distance Education) was established. Policy was enacted that required units to promote distance education. Units were migrated across to the new enterprise-wide learning management system through a phased-in, parallel approach, overcoming technical issues with the new software and hardware. A brief discussion on the current status of the system is provided. Furthermore, at the conclusion of each chapter, an analysis of the emerging themes relating to that specific phase of the implementation process will be provided.

Chapter Seven considers the framework developed in Chapter Two to provide further analysis and discussion of the role of power and politics in systems selection and implementation, in regard to the implementation of the enterprise-wide learning management system at the University of Australia. This chapter will relate the findings of Chapters Four, Five and Six to the proposed framework, highlighting aspects of resistance and control in the implementation process. Implications for systems selection and implementation, practice, theory and future research as well as limitations of the study are then considered. A brief summary of the thesis is then provided, concluding this thesis.

Chapter Two – Developing a Conceptual Framework

2.1 Introduction

This chapter explores existing research and theory to provide an interpretative lens to answer the research question "how is power and politics an integral part of the systems selection and implementation?" This exploration starts with an analysis of existing research on systems implementation. The objective of this research is not to examine systems implementation structures, but to provide a critique of that literature and identify gaps in the light of other theoretical traditions. The technical aspect of system implementation, the tools, methodologies, procedures and techniques utilised to implement a system, has received extensive attention in the literature. However, the researcher is interested in the social issues involved in system selection and implementation and is therefore focusing on those aspects, as opposed to the systems implementation structures. By identifying gaps in the literature, the researcher is able to develop a conceptual lens to detect issues of power and politics in the system selection and implementation process.

Through the study of the literature, the researcher will argue that power and politics are an integral part of the system selection and implementation process. This viewpoint has not been well discussed or examined in the literature. However, power, properly conceived as a fluid and non-static technique or action that individuals can engage in and which is exercised rather than possessed, can be seen as integral to the outcomes and processes of system selection and implementation. As will be discussed throughout this chapter, there is no exercise of power without resistance. It is the political nature of power, resistance and discourse that forms the basis of an argument which suggests that power impacts substantially on system selection and implementation as it affects the role of organisational reproduction and control through the obvious creation of policy and the hidden impact of discourse.

This chapter will describe systems implementation and the two research areas of systems implementation, process models and factor based studies. Weaknesses in terms of the attention paid to social issues in systems implementation will be discussed, which will then lead to a discussion on the importance of power and politics. The traditional view of power and its use in Information Systems research

will be discussed, and an attempt will be made in this chapter to demonstrate that the traditional views of power are inadequate for the understanding of power and its influences on system selection and implementation. A post-structuralist view of power will be introduced and issues such as resistance and discourse will be discussed in light of the adopted post-structuralist view of power, before providing the conceptual lens to be used in this study.

2.2 Systems Implementation

Systems implementation has received considerable attention in the literature from authors such as Davis (1974), Lucas (1981), Maddison, et al. (1983), Avison and Fitzgerald (1995; 2003), Hoffer, et al. (1998), Lauden and Lauden (1998), Hawryszkiewycz (2001), and Nickerson (2001). Although no specific definition is provided, the general description of systems implementation is the process of identifying the need for an information system of some kind, and the process(es) involved in getting that system installed into an organisation. Lucas (1981, p. 14) characterises information systems implementation as "an on-going process which includes the entire development of the system from original suggestion through the feasibility study, systems analysis and design, programming, training, conversion, and installation of the system." Research into the area of systems implementation has provided the majority of early studies in the discipline of information systems and typically falls into two categories: process models such as the systems development lifecycle (SDLC); and factor studies (Newman and Robey, 1992). Both forms of research will be discussed here.

2.3 Process Models

Avison and Fitzgerald (2003, p. 528), utilise the definition offered by Maddison, et al (1983, p. 4), that an information system methodology is "a recommended collection of philosophies, phases, procedures, rules, techniques, tools, documentation, management, and training for developers of information systems," to suggest that an information systems methodology contains a variety of components. These components include:

- How a project is to be broken down into stages;
- What tasks are to be carried out at each stage;
- What outputs are to be produced;

- When, and under what circumstances, they are to be carried out;

- What constraints are to be applied;

- Which people should be involved;

- How the project should be managed and controlled; and

- What support tools may be utilised.

Early studies of systems implementation have described stages in systems development and implementation (Davis, 1974). Davis (1974) argues that this process consists of three major stages and eight sub-stages. The activities taking place in each stage varies from stage to stage, and one needs to complete one stage before proceeding onto the next stage. Davis' (1974) model outlines the stages and sub-stages as follows:

Main Stage	Sub-Stage
Definition stage	Feasibility assessment
	Information analysis
Physical Design Stage	System design
	Program development
	Procedure development
Implementation Stage	Conversion
	Operation and management
	Post audit

For Davis (1974), the definition stage focuses on what the new system will do and how it will look to the user. This stage involves initial conceptualisation of the system and requirements gathering of what users believe they see as necessary in the new system. An assessment is also performed on the technical and financial feasibility of the project. The physical design stage takes the business specification developed during the definition stage, and a design of the computer-based system to meet the specifications developed earlier in the process. During the implementation stage, the physical system is installed, operated and monitored. Each component of the system design and implementation process consists of various steps, making this process linear and essentially simplistic, providing structure for system implementers to follow. The implementation team cannot proceed onto the next step until the current step is complete.

The work by Davis (1974) was a pre-cursor to the more traditional Systems Development Life Cycle (SDLC), which, similarly to Davis' (1974) approach, is a set of steps or stages that start with a set of user requirements and produce a system that meets these requirements (Hawryszkiewycz, 2001; Avison and Fitzgerald, 2003; Nickerson, 2001; Hoffer, et al., 1998; Lauden and Lauden, 1998). The SDLC is also known as a linear or waterfall model, whereby those adhering to the SDLC have to go through a rigorous step-by-step process of implementing a system. Depending on the author, there can be a number of different steps involved to get the system implemented.

For example, Hoffer, et al. (1998) condense the systems development life cycle into seven steps: project identification and selection; project initiation and planning; analysis; logical design; physical design; implementation and maintenance. Similarly, Nickerson (2001) simplifies the system development lifecycle to five steps: systems planning; systems analysis; systems design; systems implementation; and systems maintenance. Each phase inside each step is also simplified compared to Hoffer et al. (1998). Lauden and Lauden (1998) differentiate themselves by describing the development and implementation process as five steps, but differently to Nickerson (2001): define and analyse problem; investigate and understand problem; select best option; design solution; and implement solution.

It is interesting to note that many of these potential systems design and implementation processes are similar, albeit it monotonous and consistently simplistic, reducing a complex process into a set of structuralist steps and phases. However, there is still a lack of agreement in regard to the number of stages involved, what those stages are and what is required in those stages. This highlights a problem inside the systems design and implementation literature itself. That is, with the systems implementation literature being in existence for over 30 years, there is still little or no common understanding of how many steps or stages should be included in the systems implementation process. Ideas have not progressed in the last 30 years besides being pedantic about the number of steps. A total reconceptualisation is required in order to develop a richer understanding of systems implementation and what goes in the implementation process, rather than identifying a new process model, describing it and testing it.

Furthermore, there are weaknesses associated with process models used in systems implementation. The main weakness is that this approach is structuralist. Those that adhere to process models believe that structure underpins particular events, viewing systems implementation as highly ordered and rational. The process model approach is not necessarily a toolbox that is used by system implementers to implement a system. Rather, as presented, process models enable the system implementers to utilise particular methodologies to implement a system. It is these methodologies that are linear and structured. By adhering to the process modelling approach, we can implement a system by following certain steps, but they have to be completed in a linear manner. In other words, we cannot proceed to the next step until the current step has been completed and the appropriate outputs have been produced. In practice, the implementation process does not follow this linear method. We cannot break a project down into various stages, because of the nature of systems implementation and one of the most important elements of systems implementation, the people (Nguyen, 2000). People do not work in this linear method. Invariably, the systems implementation is chaotic and complex.

Avison and Fitzgerald (2003, p. 34) further highlight weaknesses involved with the Systems Development Life Cycle. These weaknesses include:

- Failure to meet the needs of management;
- Instability;
- Inflexibility;
- User dissatisfaction;
- Lack of control; and
- Incomplete systems.

This raises the question of "why?" Why do organisations, developers and researchers still promote and follow the SDLC when it has proven weaknesses, which ultimately affect the overall implementation of the system. Besides the technical shortcomings of the SDLC, there are also theoretical shortcomings of the process models approach. These weaknesses include the typical positivist approach adopted for such studies and the creation of a structured view of the world in which research must be undertaken to find or create order out of a messy and complex environment.

As a result of this shortcoming with the SDLC, at least ten potential methodologies utilised for the systems implementation process have been developed (Avison and Fitzgerald, 1995). Later research (Avison and Fitzgerald, 2003) categorised the above methodologies into various groups, which are shown in Table 2.1. As can be seen in Table 2.1, the majority of the methodologies and categories are normative and structuralist in nature. They all have multiple phases and tasks required to complete each phase before moving onto a new phase in the methodology.

Table 2.1 Categorised Systems Implementation Methodologies

Process Based Methodologies
Structured Analysis, Design and Implementation of Information Systems (STRADIS) (Gane and Sarson, 1979)
Yourdon Systems Method (YSM) (Yourdon, 1993)
Jackson Systems Development (JSD) (Jackson, 1975; 1983)
Blended Methodologies
Structured Systems Analysis and Design Method (SSADM) (Downs et al., 1988; Weaver, 1993; Eva, 1994)
Merise (Quang and Chartier-Kastler, 1991)
Information Engineering (IE) (Martin and Finkelstein, 1981; Martin, 1989)
Welti ERP Development (Welti, 1999)
Object Oriented Methodologies
Object-Oriented Analysis (OOA) (Booch, 1991; Coad and Yourdon, 1991; Martin and Odell, 1992; Rumbaugh et al., 1991)
Rational Unified Process (RUP) (Jacobson, 2000)
Rapid Development Methodologies
James Martin's RAD (JMRAD) (Martin, 1991)
Dynamic Systems Development Method (DSDM) (Stapleton, 1997)
Extreme Programming (XP) (Jeffries, 2001)
Web IS Development Methodology (WISDM) (Vigden, et al., 2002)
People Oriented Methodologies
Effective Technical and Human Interaction of Computer-Based Systems (ETHICS) (Mumford, 1983; 1986; 1995)
KADS and CommonKADS (Wielinga, et al., 1993; De Greef and Breuker, 1992)
Multiview (Wood-Harper et al., 1985; Wood-Harper and Avison, 2003)

Organisational Oriented Methodologies

      Soft Systems Methodologies (SSM) (Checkland, 1981)

      Information Systems Work and Analysis of Changes (ISAC) (Lundeberg, et al., 1982)

      Process Innovation (PI) (Davenport and Short, 1990; Davenport, 1993)

The people-oriented and organisational-oriented methodologies start adopting a social perspective on systems implementation, recognising that there are social and organisation factors involved with systems implementation (Mumford, 1983, 1995). The use of the ETHICS methodology is an attempt to establish "a value position in which the future users of computer systems at all organisational levels play a major part in the design of these systems" (Mumford, 1983). The ETHICS method requires the system implementation team to select people who are representative of their units or constituents, whilst at the same time overcome the key difficulty of identifying and addressing the needs of an enormous range of stakeholders in a complex organisation. As a result, ETHICS focuses on quality of job life for users of the software and hence the ETHICS method is primarily designed for workplace systems, adopting an iterative process that begins with early interaction with the users. An updated version of ETHICS, QUICKethics (Quality Information from Considered Knowledge) has been developed by Mumford (1995, p. 79) and is described as the "front end of ETHICS". QUICKethics is designed specifically for requirements analysis and consists of four acts: Self-reflection; Self-identification; Group discussion; and Group decision (Avison and Fitzgerald, 1995). Each manager "describes his or her work role and relationships with information needs, along with information needs ranked as 'essential', 'desirable', and useful on an individual basis" (Avison and Fitzgerald, 1995, p. 364).

However, the people-oriented and organisational-oriented methodologies still take a structured view of systems implementation. ETHICS consists of fifteen steps (Mumford, 1986), KADS and CommonKADS develops five and three different models respectively, with the aim to develop a computational model of desired behaviour (Wielinga, et al., 1993; De Greef and Breuker, 1992; Avison and Fitzgerald, 2003). There are seven stages required to use the soft systems methodology (Checkland, 1981; Checkland and Scholes, 1990), and ISAC consists of five major phases (Lundeberg, et al., 1982). Process innovation (Davenport and

Short, 1990; Davenport, 1993) follows five stages and the Multiview methodology sees information systems development as a hybrid process that involves the specialists that build and design the system, and the users that will be using the system (Wood-Harper et al., 1985; Wood-Harper and Avison, 2003). Although this approach is flexible in terms of the techniques used, there is a five stage waterfall process where each stage depends on the previous stage for progress to be achieved (Avison and Fitzgerald, 2003). This is not to say that we must reject all engineering principles and abolish steps and guidelines, and follow an ad hoc approach. Instead, the current weakness of these structured approaches is their simplistic view on the complexity and dynamics of the social world within which the system is being implemented and used.

There are, then, a plethora of methods to implement an information system. However, it can be argued that the weakness of the methodologies described above is that they are essentially structuralist and linear, and reduce the complexities of the process to phases or stages in order to simplify understanding. The outcome at each stage is a social product: a product of an application of engineering principles but also a product of social interactions between stakeholders and subjective socially meaningful interpretation of the developers about the organisations, businesses, people and their needs. There is however, a methodology that recognises the systems implementation process as complex and non-linear, requiring a social interaction of various stakeholders. This methodology is Peter Checkland's (1981) Soft Systems Methodology (SSM).

Checkland (1981) provides extensive discussion about intersubjectivity in soft systems methodology. For Checkland (1981) a system can be characterised as one which is comprised of many interacting parts such that a change affecting any one part has a propagating effect influencing all other parts in an unpredictable manner. Through processes of modelling, iteration, reflection and negotiation it draws together different perceptions, assumptions and points of view of different people who are involved in a problem situation in a cycle of learning (Barry and Fourie, 2001). The soft systems methodology expresses the situation in which a perceived problem exists in terms of structure and processes and the relation between the two, rather than as a clearly defined problem. Checkland's (1981) soft systems

methodology views unstructured problems as conditions to be alleviated, rather than problems to be solved.

However, in the researcher's opinion, the soft system methodology does not acknowledge the dynamics and complexity of social relations in the implementation process. The rich picture and associated documents, such as the conceptual model, reflect a rather static picture of the organisation. The dynamics and complexities would then be lost when the developers move from the real world to the conceptual world. Furthermore, can we really implement a system if we start at stage one, complete that stage, produce the required outputs, move onto stage two and repeat until the system is implemented? Do organisations and developers follow these structured methodologies?

Research has already shown that the linear methodologies described above are not followed. Although these methodologies are "well used, respected, [and] typify the approaches utilised in [Information Systems development]" (Avison and Fitzgerald, 1995, p. 261), it is interesting to note that in a survey of UK organisations implementing a system, while the organisations surveyed were using some kind of methodology mentioned above, the majority of organisations were developing or adapting the methodology to fit the needs of the developer and the organisation (Fitzgerald, et al., 1999). The majority of organisations did not use the formal methodologies, but rather opted for ad hoc approaches, contingency approaches, component development or outsourcing the development and implementation process. Why, then, is research still being undertaken identifying the technical issues in systems implementation if these methodologies are not being strictly followed? Rather, research needs to be undertaken to explore the social issues inside systems implementation, focusing on how people influence the implementation process and why such methodologies are not adhered to.

The other apparent and recognised shortcoming of the existing systems implementation process models is that they support a continual linear or sequential process, that one stage should be completed before going onto the next stage. As Ginzberg (1981, p. 47) stated, by using this systems implementation process approach "it is difficult to say whether 'good' performance at a particular stage requires good resolution of all issues or only of some issues, and if the latter is the

case, which issues are most important?" This systems implementation approach then is essentially reductionist, perhaps simplistic. It is certainly structuralist. There is a constant search for categorisation, stages and sub-stages. To counter this apparent reliance on structure, some researchers have sought to understand those factors considered critical to the success of systems implementation. Ginzberg (1981) claimed that management information systems implementation research looks primarily at the measurement of success and failure (Rockart, 1979). Research has also focused on critical success factors and systems implementation (DeLone and McLean, 1992; 2003; Somers and Nelson, 2001; Wilkin and Castleman, 2002; Shanks et al., 2003; Seddon, 1997).

2.4 Critical Success Factors

Considerable research has examined the individual, organisational, and technological variables that affect implementation success (Lucas, Ginzberg, and Schultz, 1990; Sanders and Courtney, 1985; Rockart, 1979; Somers and Nelson, 2001; DeLone and McLean, 1992, 2003; Boon, et al., 2004). These include organisational commitment, the existence of an executive sponsor within the organisation (Raymond, 1985), the existence of an operating sponsor within the organisation to provide quick feedback across the organisation (Montazemi, 1988) and the existence of dedicated facilities within the organisation. In the small business context, Cragg and King (1983) suggested that the successful implementation of information systems occurs where there is demonstrated relative advantage in terms of time saved, benefits accrued or discomfort decreased, and where competitive pressure required the organisation to implement an information system in order to make the organisation flexible and profitable. A similar argument was offered by Allen and Kern (2002) in the higher education context. Finally, the central importance of the role of management is supported by Parr, et al. (1999), Duchessi, et al. (1989), Somers and Nelson (2001), Akkermans and van Helden (2002), Poon and Wagner (2001) Averweg and Erwin (1999), Hartman and Ashrafi (2002), and Teo and Ang (1999).

In order for a system to be considered successfully implemented, certain objectives or factors need to be addressed (Rockart, 1979; Boynton and Zmud, 1984; Martin, 1982; Zahedi, 1987; Soliman, et al., 2001). Previous work has addressed the most commonly cited critical success factors in systems implementation (Boon, et al., 2004). The five most common factors in systems implementation are top

management support, clear goals and objectives, business process reengineering (BPR), project management, and information technology. It is interesting to note that three of the five common success factors involve human factors of some kind. Emery (1971) discussed the human factors in systems implementation, however, little has been added to the literature and body of knowledge in regards to human factors in systems implementation since then.

Human factors make up some of the more significant critical success factors, such as having top management support, a project champion driving the project, as well as competent project teams (Havelka and Lee, 2002; Somers and Nelson, 2001; Boynton and Zmud, 1984; Akkermans and van Helden, 2002; Bergeron and Begin, 1989; Hartman and Ashrafti, 2002; Croteau and Li, 2003). Human factors also include having the appropriate information systems staff, with skills for the project and an empathy for supporting users (Teo and Ang, 1999; Pollalis and Frieze, 1993; Khandelwal and Ferguson, 1999).

Ginzberg (1981, p. 460) states that "while such research can provide insight into the nature of the implementation problem, it lacks the power of an alternative approach, one that focuses on the *management* of the implementation process" (original authors emphasis). It is through studies of the management aspect of the implementation process that we can really understand what contributes to implementation success or failure. The management aspect also provides the richness that other measurements of systems implementation cannot, due to the simplistic, reductionist nature of measuring successful implementation.

The failure of information systems implementation has been linked to the absence of an information systems champion or change agent, lack of management support (Ginzberg, 1981; Kydd, 1989; Corbitt 2000), strain on already restricted managerial time (Cragg and King, 1983), poor attitudes towards information systems (Corbitt, 1997), absence of education and training (Cragg and King, 1983), organisational problems (Markus, 1983), technical problems (Cragg and King, 1983), and perceived gaps between expectations of information systems supporters and those expected to use the system (Kydd, 1989).

Current research in the systems implementation process has generally taken a positivist approach. Essentially, positivists undertaking research in the critical success factors involved in systems implementation believe that human factors can be isolated from the environment, adopting a simplistic view of the world. According to Mitev (2001), this approach is typically taken by managers and technologists and is unrealistic as it views technology as unproblematic and neutral. Following the positivist approach, managers typically believe that technology has little or no impact on the systems implementation success or failure. This positivist approach also misses the social aspect of systems implementation; it fails to recognise that there is a political aspect involved in systems implementation. In other words, this viewpoint ignores or reduces the "understanding of organisations characterised by a belief in rational management; a denial of the existence of power relations and conflicts; a tendency to see organisations as individual closed entities; and limited focus on the business environment" (Mitev, 2001, p. 85). Implementation however, is neither driven entirely by factors of success or failure (Corbitt, 1997). Rather, the implementation process in information systems is reflective of the stakeholder relationship interactions and the impact of the context, either business, organisational, social or cultural, in which the implementation occurs.

2.5 The Importance of Power and Politics

The systems implementation models and methodologies outlined above ignore the political aspect and therefore the element of power in systems implementation. As a result, some authors have taken a more social-technical approach to information systems implementation (Mitev, 2001; Orlikowski, 1992). In order to do this, we as researchers, must "move beyond commonsense explanations of failure and success and find more complex and richer ways of understanding the use of IS in organisations through the inclusion of broader social, economic, political, cultural and historical factors" (Mitev, 2001, p. 84). By taking this approach, we can enable a better understanding of the power and politics involved in systems implementation by focusing on social issues in the implementation process.

There is more to the implementation process than what the existing literature suggests. Systems implementation processes, it can be argued, operate at a more discursive level where operational practice and policy impacts on the decisions made along the systems implementation process, as opposed to the more technical aspect

of implementation utilising process models and critical success factors. There is more to the implementation process than what the existing literature suggests. There is an inherent political issue. In other words, there are forms of influence or self-serving tactics of influence in the system selection and implementation process. Furthermore, as Bacharach and Lawler (1998, p. 69) state, politics refers to "the efforts of individuals or groups in organisations to mobilise support for or opposition to organisational strategies, policies, or practices in which they have a stake or interest." This makes the systems implementation process messy, inconsistent and imbued with ambiguity, rather than structured or manifestly associated with factors creating success. Systems implementation takes place in the fluid setting of changing business. Implementation involves more than just a multi-staged context (McLaughlin, 1987), it is also an iterative process (Corbitt, 1997). By exploring the implementation of policy, McLaughlin (1987) claimed that implementation is affected by social issues such as local capacity and will. However, there are other factors that play an important role in system selection and implementation. Belief may also be nurtured from action. Even motivation or will is influenced by factors beyond the reach of technical implementation (Corbitt, 1997). Environmental stability, competing centres of authority, contending priorities or pressures and other aspects of the social-political milieu can influence implementation intensely (Yin, 1981). Implementation generally requires a combination and balance of pressure and support (McLaughlin, 1987). Pressure by itself may be insufficient when objectives contain their own implementation directions (Corbitt 1997). Pressure per se cannot affect those changes in attitudes, beliefs and routine practices typically assumed by reform policies. Communication can be deliberately distorted by misinformation to influence process and gain advantage (Forester, 1989). The implementation of any new system also involves a change in the way business is performed.

Systems implementation, it can be argued, is essentially political and non-rational (Self, 1981; Mitev, 2001). Mitev (2001, p. 90) argues that "politics is an inescapable feature of local organisational life…some human perspectives win over others in the construction of technologies and truth, some human actors go along with the will of other actors, and some humans resist being enrolled, in an unpredictable manner." One cannot plan or premeditate the political nature of organisations or the system selection and implementation process. Rather, the system selection and implementation process is differentiated by the various stakeholders involved in the

implementation process. In this process the constructions of power and influence interact to impact on the path that systems implementation follows. This implementation process is influenced by, and influences, human behaviour.

As outlined in Chapter 1.4, rather than take the social aspect of systems implementation at face value, we need to understand and perform research that recognises the complexity and historical construction of the members of the implementation team and the process itself. By researching the complex human issues in systems implementation, particularly the power and politics involved, we are able to identify what influences the implementation process. We can essentially identify the driving forces of systems implementation. Currently we cannot describe or explain the political environment in systems implementation because politics in implementation endures influence, pressure, dogma, expediency, conflict compromise, intransigence, resistance, error, opposition and pragmatism (Ball, 1990).

Contrary to the process model and critical success factor approaches outlined above, the systems implementation process does not necessarily follow a structure. Like all social processes, it is inevitably chaotic, messy and encumbered with values, ideology and other social practices. In information systems this has been the focus of work by Ngwenyama and Lee (1997), Romm and Pliskin (1999), Trauth and O'Connor (1991), and Daft and Lengel (1986). When implementing a system, developers do not necessarily follow the SDLC step-by-step. The implementation process is differentiated and not as simplistic as the systems implementation literature claims. The implementation process cannot realistically be structured or categorised into various steps. Systems implementation, it can then be argued, is inherently a political and complex process. Few researchers have studied the power and politics involved in systems implementation. However, in a series of papers, Markus (1981, 1983, 1984; 1994; Markus and Pfeffer, 1983; Markus and Bjørn-Anderson, 1987) examined the role of power, politics and systems implementation. The seminal research by Markus was undertaken in 1983, over twenty years ago, and argues that the power of human and technological resistance impacted on systems adoption. However, the implications of this study have rarely, if at all, been taken further, or applied to the systems implementation process. To deal with this aspect

more fully, there is a need to re-examine the nature of power and discuss the apparent influence of power on systems implementation.

2.6 The Social Impact of Power

As Parsons (1963, p. 232) stated, there is a "notable lack of agreement both about its specific definition, and about many features of the conceptual context in which it should be placed." It is not only Parsons (1963) that reflects on the lack of agreement on the definition of power, as authors such as Pfeffer (1981) and Galbraith (1984) have also highlighted this issue. What further complicates this issue is, as Galbraith (1984) states, "the reader or listener is assumed to know what it [the term 'power'] means" (p. 1). This section provides a brief summary of the work on power by initially discussing the classical view of power as proposed by Dahl (1957) and his method of analysing power (Dahl, 1968). An analysis of Dahl's work in the management discipline will be provided and critiqued via Lukes (1974), which then leads into a discussion of power-based studies in the Information Systems discipline.

Dahl (1957, p. 202) provides a classic view of power suggesting that "*A* has power over *B* to the extent that he can get *B* to do something that *B* would not otherwise do." Dahl (1957) referred to power as the controlling of someone else's behaviour and/or actions. This view is shared by Russell (1975, p. 25), who argued that "power over human beings may be classified by the manner of influencing individuals." However, Russell (1975) described how individuals may influence or be influenced by the use of power, for example by:

- direct physical power over an opponent's body – which refers to physical damage via the use of a weapon to get their way;
- rewards and punishments as inducements – the use of incentives, such as monetary reward or punishment by removing privileges; and
- influence on opinion – the use of propaganda to modify an opponent's mindset.

Through later work, Dahl (1968) suggested four key characteristics to analyse power: magnitude; distribution; scope; and domain. Magnitude equates to the amount of power someone is presumed to possess. Dahl claims that this is a difficult characteristic to identify. The example provided by Dahl (1968) related to the

magnitude of the power *A* has with respect to *B* (in the sense that *A* has power over *B*). This power is thought to be able to be measured via an interval scale.

Distribution relates to the classification and description of the most common allocations and patterns of power relations. Dahl (1968) suggested some of the typical questions raised in terms of distribution:

- What are the characteristics of *A* (where *A* is the powerful figure in the relationship), and what are the characteristics of *B* (where *B* is less powerful compared to *A*); and
- Do they come from different classes, strata, regions or other groups, such as culture?

Dahl's (1968) view of scope contests the view that individuals or groups may be powerful with respect to one kind of activity, but weak with respect to others. In other words, power need not be generalised, instead power may be specialised (Dahl, 1968). Is power generalised over many scopes or is it specialised? This is the typical question raised in regards to scope for Dahl (1968), There is a need to specify the power of *A* with respect to some class of *B*'s activities, the scope.

In domain, the fourth characteristic, power is limited to certain individuals (Dahl, 1968). Domain links back to scope in that individuals may have power in regards to specialised areas, or domains. Who appears to have more power in the relationship and what are their characteristics? These are some of the questions Dahl (1968) has raised. The characteristics considered include class, strata, region and culture of individuals.

Four underlying explanations were used to explain why magnitude, distribution, scope and domain are important for analysing power: resources; skill; motivation; and costs. Resources relates to the differences attributed to the distribution of resources. If you increase resources, you increase power. Resources for Lasswell and Kaplan (1963, p. 87) included "power (which can serve as a base for more power), respect, moral standing, affection, well-being, wealth, skill and enlightenment."

Skill refers to the different skills an individual may possess (Dahl, 1968), and leads to the fact that power is not generalised, it is specialised, relating to the domain of the

individual. Two individuals may have the same resources (and skills), but may differ in terms of motivation (Dahl, 1968). For example, *A* may have the motivation to choose resources to increase his or her power as opposed to *B* who may be motivated to use his or her resources differently.

The final explanation relates to costs (Dahl, 1968). The supply of resources may have a bearing on how willing *A* will be in order to control *B*, in other words, the opportunity costs involved. Will *A* invest a lot of his or her resources if the return does not exceed the costs involved? As this is unlikely, there is a trade-off in regards to the costs involved of investing the resources and how much of a gain they will make.

This is a structuralist approach to analysing power, reducing power to the ability to allocate or give power to a particular individual or group. As structuralist as this work is, this classic view of power is influential in business. For example, research by French and Raven (1958) claims that power can take on multiple forms in organisational behaviour:

- Coercive Power – a person reacts to this power out of fear of the negative ramifications that might result if they fail to comply.
- Reward Power – compliance achieved based on the ability to distribute rewards that others view as valuable.
- Legitimate Power – the power a person receives as a result of their position in the formal hierarchy of an organisation.
- Expert Power – influence based on special skills or knowledge.
- Referent Power – influence based on possession by an individual of desirable resources or personal traits.

Rather than treating power as a property of the individual, as Dahl (1957; 1968) does, French and Raven (1958) believe that power is a property of the relationship between an individual and others (Buchanan and Badham, 1999). This approach enables a researcher to categorise the type of power and role someone may have in the organisation. The research by French and Raven (1958) has influenced the work of Benfari et al. (1986), who identified eight bases of power. These include the five from French and Raven (1958), plus information, affiliation and group power. Furthermore, Benfari et al. (1986) continues the classical, structuralist and

categorical view of power by providing both a positive and a negative exercise of power depending on the circumstances. This treatment of power has been criticised by Buchanan and Badham (1999). This method of treating power as a property of a relationship do not distinguish power-related behaviour from other forms of organisational behaviour, therefore creating a generic concept of power, which has limited analytical appeal (Buchanan and Badham, 1999). More importantly, this treatment of power presents a surface view of power (Buchanan and Badham, 1999), enabling the analyst to categorise power into five or eight bases of power. In other words, this treatment of power is essentially structuralist in nature and misses the messiness and complexities involved with power.

In the management literature, Pfeffer (1981) examined organisational behaviour and outlined one method to help assess power in organisations. According to Pfeffer (1981), there is a need to identify political actors in the organisation, we need to identify the relevant units for analysis. Pfeffer (1981, p. 36) stated that "in most cases it [identifying political actors] will require judgement to assess whether or not the appropriate units of analysis have been identified." A direct, or binary approach (straight yes or no answer) is ineffective in this type of scenario. For example, the typical question asked is "is this actor political in the environment or group they belong to and work in?" A binary approach would answer "yes" or "no". Such an approach cannot be adopted for a study of power. Pfeffer (1981, p. 37) further adds that "it is important to recognise that the identification of meaningful political units will change over time and be dependent on the particular set of issues at hand." In conjunction with the transforming issues Pfeffer (1981) referred to, actors may also have multiple memberships, relationships and interests that are crosscut in a variety of different ways.

One way of analysing and measuring power is by its visible symbols. For Pfeffer (1981), such symbols include titles, special parking places and office size. However, one can only read so much into these symbols, and thinking that one can derive a precise measure of power, based on certain symbols is naïve and simplistic. There is no proof that specific, visible symbols, provide a perfect correlation to the amount of power an actor possesses.

Another way of finding out who possesses power is to ask people within the decision-making group. This is known as reputational indicators of power (Pfeffer, 1981), which requires members of an organisation to rate and rank departments and subunits to assess the relative power each unit possesses. However, informants may be unwilling to tell you what they know about the power distribution within the unit, or simply that they do not have the knowledge about power within the unit. Pfeffer (1981, p. 45) added that identifying the powerful "requires observation of the various social actors prior to the decision-making event, as well as a knowledge of their preferences before the political activity began. If one knows the initial preferences, the attempts at influence undertaken, and then the final decision, power can be more reliably diagnosed." One cannot simply administer a questionnaire or survey to identify the power actors possess within the unit, nor can one use specific symbols or interviews to assess the power within the unit.

Pfeffer (1981) further suggested that power can be analysed by recognising specific symbols (such as title and office size) and by asking individuals to rate or rank other individuals and units in regards to perceived power. However, both of these methods have serious flaws, such as being overly simplistic and containing bias, as individuals would rank according to their preference and not to what the appropriate ranks are. Pfeffer (1981, p. 45) noted this and suggested that analysing power "requires observation of the various social actors prior to the decision-making event."

The implication of this approach is that power can be measured, a positivist and structuralist approach. It is believed that this approach to power misses the intricacy of what power is and how it operates in the organisation and system selection and implementation process. In other words, power has typically been represented as something that can be measured. Under the classical view of power, there is a structuralist understanding that power can be reduced to categories (French and Raven, 1958), and characteristics (Dahl, 1968). Power, by the definition employed in this study, is not a concrete term or concept. The definition of power is abstract in the sense that power is a social human behaviour and cannot be measured using a psychological scale. Power does not reside in, or is not an attribute of, people.

It is through this work that Lukes (1974) developed a seminal contribution to studies of power. Lukes (1974) developed a valuable link between what he sees as the behaviourist orientation of many organisational theorists and the views of other social theorists. His work provides an influential summary of earlier writings on power. Having studied and critiqued two previous conceptions of power by Dahl (1957) and Bachrach and Baratz (1962), which he distinguishes as the one-dimensional view of the American pluralists and the two dimensional view of Bachrach and Baratz, Lukes (1974) then develops his own dimension - the third dimension of power.

The first dimension as discussed by Lukes (1974) implies an intentional agency theory. This is the same view as Dahl (1957, p. 202), whereby "*A* has power over *B* to the extent that he can get *B* to do something that *B* would not otherwise do." Dahl referred to power as the controlling of someone else's behaviour and/or actions, called 'episodic power'. The focus in the first dimension is on the observable activities of members, "seeking proof of power in processes" (Thompson and McHugh, 2002, p. 123). Fundamentally the exercise of power entails conflict. More specifically, the process of power works through the realm of decision-making, with the winner prevailing through the possession of superior resources, acumen, or both (Lukes 1974). In other words, power can be easily identified and measured.

Lukes (1974) also discusses a 'second-dimension' to power, proposed by Bachrach and Baratz (1962). The second dimension includes the notion of mobilizing bias and non-decision making. Essentially, the use of power can be seen not only in the overt attempts to influence decision-making, but also in the more subtle ways that issues put forward for decision making are selected and presented, in such a way as to head off the mere possibility of conflict. An example includes the professor who attends a meeting and decides not to make a proposal (Introna, 1997). However, this still concentrates on the observable nature of power. As Lukes (1974, p. 20) states, "the two-dimensional view of power involves a *qualified* critique of the *behavioural* focus of the first view…and it allows for consideration of the ways in which decisions are prevented from being taken on *potential* issues over which there is an observable *conflict* of…*interests*, seen as embodied in express policy preferences and sub-political grievances" (original authors emphasis). Lukes (1974) acknowledges that

there are hidden agendas of power and that ownership of resources sets the grounds upon which these agendas are set.

Where Lukes (1974) differentiates himself from other researchers on power, is his third dimension, people's interests. Lukes (1974, p. 27) defined power as: "*A* exercises power over *B* when *A* affects *B* in a manner contrary to *B*'s interests." Furthermore, Lukes (1984) believed and acknowledged that processes cannot be measured, but the outcomes, in terms of the structuralist inequalities between groups can. Lukes (1974, p. 284) acknowledges that this is a hidden conflict, "which consists of a contradiction between the interests of those exercising power and the *real* interests of those they exclude" (original authors emphasis). Power, for Lukes (1974), is vested in the ability to define reality for others, so that they internalise the existing order as 'divinely ordained and beneficial', or at least acquiesce in it because they can 'imagine no alternative' to it. Lukes (1974) proposes that power elites manage not only the first two dimensions of power but also this third, more subtle, dimension.

Giddens (1979, 1984), Clegg (1989), Hardy (1996) and Thompson and McHugh (2002) are amongst Lukes' critics. Hardy (1996) argues that Lukes' (1974) third dimension of power sees power solely as being exercised in a 'top-down' manner, that the possibility of the less powerful being capable of influence is explicitly denied. Consequently Hardy refined Lukes' model to include a 'bottom-up' aspect to each of the three dimensions. Further criticism of Lukes' work is that there is an inadequate resolution of the dilemma between defining what power is and where it is located (Thompson and McHugh, 2002; Giddens, 1979, 1984). The difficulty lies in identifying whether it is culture, social groups, gender or race that determines power; or whether power depends on our will and responsibility.

2.7 Power in Information Systems Research

Lynne Markus was the first person to introduce power-based research into the Information Systems discipline via an arguably positivist (Lee, 1989) and interpretive perspective (Walsham, 1993; Lee, et al., 2000). The web version of the Social Science Citation Index shows that "over 200 other published studies have cited Markus' classic paper since 1993 (the earliest year covered by the web version of SSCI)" (Lee, et al., 2000, p. 724). Markus (1983) based her work on Kling (1980),

who examined the role of politics and power in systems development through the social aspect of resistance to the diffusion of information technologies. Kling suggested that resistance can be viewed in a number of ways, from the rational to the structuralist, from human relations to an interactionist perspective, and from both an organisational and class political perspective. According to Romm and Plisken (1998, p. 83) these perspectives differed on a variety of dimensions, including "their view of technology, the social setting into which it is introduced, and the implications for the dynamics of the diffusion process." By adopting these dimensions, Kling (1980) introduced a structuralist view of politics into the diffusion of information technology literature. Kling (1980) believed that the complex issues could be simplified and reduced into various categories, measurable by correlations between variables. Social activities and concepts however, are naturally messy and complex (Ball, 1990; Corbitt, 1995) and thus it is difficult to categorise their impact.

By extending the work of Kling, Markus (1983) discussed the social aspects involved in Management Information Systems (MIS) implementation. Markus (1983) defined three major categories of resistance to diffusion: people-determined, system-determined and interactionalist. However, Markus' paper deals only with the obvious – an interpretative or positivist view about the role of influence, politics and agendas within organisations dealing with information systems. In her work, Markus focused her argument on a variant of interaction theory. Furthermore, Markus (1983, p. 431) argued that 'here, resistance is explained as a product of the interaction of system design features with the intraorganisational distribution of power, defined either objectively, in terms of horizontal or vertical power dimensions, or subjectively, in terms of symbolism."

Information Systems research in the 1980's and early 1990's adopted the work of Kling (1980) and Markus (1983) as studies that were then completed investigating the strategies and tactics used by stakeholders to influence the information systems development process to their favour (Franz and Robey, 1984; Lyytinen and Hirschheim, 1987; Markus and Robey, 1983; Robey, 1984; Robey and Markus, 1984; Robey, et al., 1993; Newman and Robey, 1992). However, the majority of these authors adopted the work of the structuralist, Dahl (1957), moving away from a post-structuralist view of power and politics in systems implementation, and towards a categorical and measurable positivist-based understanding of power. Romm and

Pliskin (1998; 1999) recognised the positivist view of power in Information Systems and suggested that there is more complexity involved behind the "seemingly simple definitions" (Romm and Pliskin, 1998, p. 82). As a result, Romm and Pliskin (1998, p. 82) discussed two different approaches to power utilised in information systems research: "the Marxist, or critical voice, and the functionalist, or managerialist voice." Power-based research in the Information Systems discipline either follows the critical voice or the managerialist voice.

Examples of research adopting a managerialist voice includes work by Robey (1984), who utilised the "zero-sum" game, where one party "wins" and the "losses" are suffered by other parties in conflict. This utilisation adopts a binary view of power, similar to Dahl (1957), where *A* has power over *B*. Later research by Robey (1984; Robey and Farrow, 1982; Robey, et al., 1989) developed a model to investigate conflict involved in information systems development. This model consists of four variables: participation; influence; conflict; and conflict resolution (Robey, Smith and Vijayasarathy, 1993). In simplifying the conflict and conflict resolution process, Robey (1984) noted that "participation is treated as a determinant of influence, and influence is treated as a determinant of both conflict and conflict resolution" (Robey, et al., 1993, p. 125). This model has also been tested empirically (Robey and Farrow, 1982; Robey, et al., 1989).

Research by Robey and Markus (1984) acknowledged that information systems implementation imposes both a technical and social change in an organisation. However, Robey and Markus (1984, p. 5) treated the political aspect of information systems implementation as ritual, or "symbolic behaviours that reinforce the prevailing belief system in an organisation." There was no attempt to understand the inherent complexity of the political process in systems implementation.

In an attempt to move away from the managerialist view, Markus and Bjørn-Anderson (1987) extended previous work of power in Information Systems focusing on power relations. However, this is only in regards to "the professional/user power relation: the power of IS professionals over systems users" (Markus and Bjørn-Anderson, 1987, p. 298). In essence, they investigated only one aspect of power relations. They categorised the exercise of power, taking into account the context and target of the power exercised. They categorised the exercise of power as:

- technical, where information systems professionals exercise power over users when system design features are selected and users will initially explicitly object;

- structural, where the exercise of power is done by the "creation of organisational structures and routine operating procedures that give them formal authority over users or foster user dependence on them for important resources (Markus and Bjørn-Anderson, 1987, p. 500);

- conceptual, by selecting objectives the information system will serve; and

- symbolic, where users' desires and values are shaped outside the context of the individual development effort.

The focus of these power relationships is the interaction between the system designer and system user. In essence, this does not deal with the problem of power relations within the organisational context of systems implementation. Although Markus and Bjørn-Anderson (1987) attempted to move away from the managerialist approach to power, they adopted a categorical approach of the exercise of power in their study, arguing that power could be structured and placed into various categories, depending on how that power is exercised.

In a further attempt at deepening the understanding of the role of power in systems development, and ultimately moving away from the managerialist approach to power, Hirschheim and Klein (1994) reviewed Mumford's (1983) information systems development methodology – ETHICS – and proposed a different methodological approach to the more common structuralist method. In this different approach, Hirschheim and Klein (1994) discuss the concept of 'neohumanism', which according to Hirschheim and Klein (1994, p. 84), "insists that [user participation in the analysis, design, and implementation of an information system] is even more important for social sense-making to create ethical imperatives of work arrangements, in a democratic society." Neohumanism utilises the structuralist approach and extends it to include emancipatory ideals and principles. By modifying Mumford's (1983) ETHICS methodology to incorporate the neohumanism ideals, Hirschheim and Klein (1994) suggested how emancipation can be achieved through systems development.

Essentially, emancipation is concerned with remedies to overcome the communicative distortions, such as weaknesses of human personality including wilful unresponsiveness by an individual or information inequalities resulting from legitimate division of labour (Hirschheim and Klein, 1994) present in a given situation in systems implementation. In order to do this:

- all members of the organisation must have an equal opportunity to raise issues by asking questions, making speeches, or giving rebuttals to questions and speeches of others;

- members must be in an equal position to give and refuse orders, diffusing the distorting effects of power amongst members of the organisation;

- members must be in an equal position to call into question the truth, correctness, appropriateness, or sincerity of what is said, helping to maximise the chances that the best available evidence is used to test factual truth; and

- members must be in an equal position to express their attitudes, feelings, concerns and doubts, maximising the chances that illusions and deceptions are uncovered.

This approach recognises the rich perspectives within systems implementation that are created by and create the systems implementation process, and recognise the importance of power and power relations in that process.

Moving further away from the managerialist perspective, Myers and Young (1997) investigated the role of hidden agendas and power in managerial assumptions in information systems development. Myers and Young (1997) identified the need for research on social issues such as power and politics in systems implementation, by adapting Broadbent, et al.'s (1991) adaptation of Habermas' (1984) model of societal development. Myers and Young (1997) examined how hidden agendas and power can be deeply embedded within information systems development projects. An ethnographic study explored an information system for mental health services in an organisation in New Zealand. The implementation of the system contained hidden agendas of management and more broadly of the New Zealand Government. Furthermore, the study by Myers and Young (1997) discussed the extent to which hidden agendas, power centres and managerial assumptions inhibit, repress and constrain user participation.

Building on research by Drory and Romm (1990), Romm and Pliskin (1998, 1999) adopted the framework of organisational politics combining three aspects: influence attempts; conflict; and informal means, and incorporate conflict into the "mainstream literature on organisation politics" (Romm and Pliskin, 1998, p. 83). They concluded that the use of email and its features, such as speed, multiple addressability, recordability, processing and routing, facilitate its use for political purposes. As has been argued previously, this view of power misses the complexities involved with power and politics, preferring an easy to measure and observe approach.

In a more recent paper, Dhillon (2004) attempted to investigate power and information systems implementation utilising post-structuralist work by authors such as Lukes (1974) and Foucault (1976; 1977; 1978; 1980; 1982). However, in an attempt to interpret power, Dhillon (2004) reverts to the managerialist, structuralist view of power, adopting Hardy's (1996) four dimensions of power, resource, process, meaning, and system-based power. Specifically, Dhillon (2004, p. 637) argued that successful implementation of an information system will occur when power residing in the resources, processes, and meaning can be effectively leveraged. By exploring the implementation of an information system at the Nevada Department of Motor Vehicles (DMV) and Public Safety, Dhillon (2004, p. 643) concluded that it is "important to understand the human behavioural aspects of analysis, design and management of systems. In particular, an understanding of power in the resources, processes, and meanings needed to align changes in the structure, systems, people, and culture." Furthermore, three lessons were discussed from the implementation of the information system:

- an understanding of resources, processes, and the meaning of power is a precursor to successful information systems implementation;
- in addition to understanding the dimensions of power, there is a need to address various alignment questions pertaining to the changes in structure, systems, people, and the culture; and
- an adequate consideration and understanding of power vested in the system is essential for any successful information systems implementation.

Power, by the definition employed in the Information Systems discipline, is a managerialist and structuralist concept, seeking a category to group the exercise of power in systems selection and implementation. However, as Dhillon (2004)

foreshadowed, there is an alternative perspective to power. It is abstract in the sense that it is a social human behaviour and cannot be simply measured using Likert scales. On the other hand Foucault (1980, p. 98) suggested that power must be analysed as

> something which circulates, or rather as something which only functions in the form of a chain. It is never localised here or there, never in anybody's hands, never appropriated as a commodity or piece of wealth. Power is employed and exercised through a net-like organisation. And not only do individuals circulate between its threads, they are always in the position of simultaneously undergoing and exercising this power…individuals are the vehicles of power, not its points of application.

In other words, power, for Foucault, is non-static, fluid and exercised, rather than something that can be possessed by managers and those seeking power. It is to this approach that we now turn.

2.8 The post-structuralist view of power

According to Buchanan and Badham (1999) no contemporary treatment of power is complete without reference to the French philosopher Michel Foucault. Foucault (1976; 1977; 1978; 1980; 1982) was concerned with the development of the human sciences, specifically the evolution of forms of discipline and control. Foucault's work is argued to be both post-structuralist and post modern, despite him not accepting this label. Foucault does not hold that any essential or "real" structure underpins particular "events" (McHoul and Grace, 1993). This viewpoint opposes that of the classical, positivist view adopted in studies of power in the Information Systems literature. Rather than view power as episodic and structuralist, as the traditional view of power is, Foucault theorised a post-structuralist view of power.

For Foucault (1976; 1977; 1978; 1980; 1982), power relations consist of two dimensions, bio-power and disciplinary power. Bio-power operates through establishing and defining what is normal or abnormal, and consequently what is socially deviant or acceptable in thought and behaviour (Buchanan and Badham, 1999). This is achieved through the use of discourse. As a result, organisational culture, or culture of the systems implementation team, plays a significant role in sustaining and altering what we conceive as socially normal or deviant. Through this, we can challenge the power and discourse by questioning what is normal, rather than

accept the status quo, or the current and taken for granted definitions and representations.

The other form of power that Foucault (1976; 1977; 1978; 1980; 1982) identified was that of disciplinary power. Disciplinary power operates through the construction of social and organisational routine, targeting individuals and groups (Foucault, 1977). Power is therefore established through a set of techniques whose effects are achieved via disciplinary practices, the tools of surveillance and assessment to control and regiment individuals (Buchanan and Badham, 1999). This was based on Jeremy Bentham's concept of the *panopticon*, a devise that was developed to constantly keep an eye on prisoners. A watchtower is established in the middle of a collection of cells. Each cell is observed from the central watchtower, but no cell can see into another cell. Prisoners could also not escape from being seen and no prisoner could tell if they were being watched or not. As a result, this affects their behaviour with the knowledge that they *may* be being watched. The prisoner would act under the assumption that they are indeed being watched. Similarly to bio-power, the structure of the *panopticon* encourages self-discipline (Buchanan and Badham, 1999). Foucault (1977) concluded that the *panopticon* serves as a metaphor, claiming that disciplinary and bio-power, tacitly influence and constantly control our behaviour through our own self-monitoring.

Foucault (1978, p. 94) claimed that "power comes from below; that is, there is no binary and all-encompassing opposition between rulers and ruled at the root of power relations, and serving as a general matrix." Rather than power being an absolute term, whereby someone has power all of the time, Foucault's notion of power is in the form of power relations. As Foucault (1978, p. 92) stated

> Power must be understood in the first instance as the multiplicity of force relations immanent in the sphere in which they operate and which constitute their own organisation; as the process which, through ceaseless struggles and confrontations, transforms, strengthens, or reverses them, as the support which these force relations find in one another, thus forming a chain or a system, or on the contrary, the disjunctions and contradictions which isolate them from one another; and lastly, as the strategies in which they take effect, whose general design or institutional crystallisation is embodied in the state apparatus, in the formulation of the law, in the

various social hegemonies…one needs to be nominalistic, no doubt: power is not an institution, and not a structure; neither is it a certain strength we are endowed with; it is the name that one attributes to a complex strategical situation in a particular society.

In one of his later works, Foucault (1982, p. 220) noted that "what defines a relationship of power is that it is a mode of action, or mode of conduct, which does not act immediately and directly on others. Instead it acts upon their actions: an action upon an action, on existing actions or on those which may arise in the present or future." In other words, power is not something that is possessed by individuals, but power is exercised upon the actions of others, thus breaking away from the classical and structuralist view of power as adopted by Dahl (1957).

Deleuze (1988, p. 73) supported Foucault, claiming that power relations are

Simultaneously local, unstable and diffuse, [power relations] do not emanate from a central point or unique locus of sovereignty, but at each moment move from one point to another, in a field of forces, making inflections, resistances, twists and turns, when one changes direction, or retraces one's steps, this is why they are not 'localized' at any given moment.

Power relations change from one moment to the next. They are never static, never standing still. It should be noted however, that people do not 'have' power implicitly; rather, power is a technique or action that individuals can engage in. Power should not be viewed as an entity, but rather a process. In other words, power is not possessed, it is exercised. A power relation only occurs where there is the potentiality for resistance, that is to say it may arise between two individuals each of whom has the potential to influence the actions of the other and to present resistance to this influence, the action upon an action as described above. Understanding power in this manner highlights the differences between the structuralist view of power and that of the post-structuralist, Foucault. For example, under the structuralist view, power is episodic, visible, observable in action, deployed intermittently, and is absent except when exercised, whereas through Foucault's (1976; 1977; 1978; 1980; 1982) view, power is present in its absence, discreet, operating through taken-for-granted daily routines and modes of living.

We are not born with power, but we come into power. Foucault (1978, p. 94) argued that "power is not something that is acquired, seized or shared, something that one holds onto or allows to slip away." These power relations are dynamic, transforming and constantly changing (McNay, 1994). Foucault claimed that power is transformable, that we may have power at one point in our life and then at another point in our life have no power. Foucault (1978, p. 93) stated that power "is produced from one moment to the next, at every point, or rather in every relation from one point to another. Power is everywhere; not because it embraces everything, but because it comes from everywhere." That is, power is instantiated in action.

People look at what forces are at their disposal to get the obvious next step to be one that will serve the interests that they are concerned with in order to exercise power (Introna, 1997). However, people cannot predict what forces and power relations are in play since they are mobile and continually changing. Instead, people will draw upon those forces and power relations as they arise. Going further, every act, every communication by every person simultaneously reconfigures power; sometimes in a minute way and sometimes in a big way (Introna, 1997). In this sense then, power is imbued in the complexity of social agency. Its dynamic nature changes and alters the power relations that emerge. Inevitably this power is constructed by knowledge.

In systems implementation, Dhillon (2004, p. 637) argued that "a properly planned implementation does result in shifting/modifying the power, however the success rates of such rationally planned approaches are rather dismal." Additionally, there is a need in systems implementation to consider how the end-user resists the implementation of a system and how management imposes that system upon the end-user. Work by Zuboff (1988) analysed the managerial techniques of control and surveillance, claiming that because of systems implementation and the power vested in these systems, the divide between the managers and employees increases, the former become increasingly isolated while the latter become suspicious.

McNay (1994, p. 101) criticised Foucault because in Foucault's writing, "power relations are only examined from the perspective of how they are installed in institutions and not considered from the point of view of those subject to power." McNay claimed that Foucault is only discussing power from one point-of-view, the

institution. To provide a balanced discussion, McNay believed that Foucault needed to consider the power relation of those subject to overriding power, the less powerful, to see how they succumb and resist to the more powerful. In order to get a better understanding of the power relations operating in the system implementation process, the various actors need to be identified, from the managerial level to the end-user level in order to provide a more balanced discussion.

Through the metaphor of the *panopticon*, Foucault (1977) argued that power is established and maintained not by overt legalistic control but, rather, by subtle forms of discipline. Disciplinary instruments of hierarchical observation, normalising and examinations are used. These serve to identify deviation from the norm or are overtly used for individuals "to become part of the 'web of control' of the state bureaucracy" (Kenway, 1990, p. 175). The influence of the larger social, political and economic contexts, and the history of the social drama acted out over time within specific arenas. Hatcher and Troyna (1994, p. 167) argued that "struggles over policy take place on a terrain already structured by power and above all by the power of the state," or in this context an organisation and/or of ownership or governance structures.

Hatcher and Troyna (1994) criticised Foucault, arguing that he underplays the coercive dimension of power of the state, and suggested that the state often uses force in implementation (cf McNay, 1994). It is an apparent simplification of what Foucault (1977) said to suggest that the organisation has no power. Rather, Foucault (1980) suggested that power is constituted by social relations and that when such a social relationship is created, the relationship can be challenged and/or modified. Social relationships he argued, not only exist as attraction but also generate resistance.

The role of the organisation in systems implementation is accepted both as an influential parameter and as an influence affected by the recontextualisation of the situation of the information system in its organisational context (Corbitt 1997). Futhermore, in the realm of information systems implementation, it is argued that within an organisation actors are both empowered and disempowered and that it is by studying the immediate, the personal and the ordinary that the various levels of

resistance, empowerment and disempowerment can be recognised in the systems implementation process.

By adopting Foucault's (1976; 1977; 1978; 1980; 1982) notion of power relations, we are forced to pay attention to the myriad of mundane, transparent, taken-for-granted, daily routines that continually shape our thinking and behaviour, and that of others (Buchanan and Badham, 1999). As Foucault (1976; 1977; 1978; 1980; 1982) argued - and it is believed that this is relevant in the realm of systems implementation - these power relations are constantly shifting, as they are open to challenge and dispute. It is through viewing systems selection and implementation from the perspective of various stakeholders, ranging from managers through to end-users over a period of time, that we are able to appreciate the dynamic nature of power relations. Furthermore, it is through knowledge that we are able to recognise the opportunities to find these areas of dispute or appropriate points of resistance and proactively challenge and achieve power.

Foucault's (1976; 1977; 1978; 1980; 1982) perspective of power relations served to remove the obscurity of the political role in controlling and regimenting individuals, opening up the practices of challenge and resistance (Buchanan and Badham, 1999). Essentially, as Foucault (1978, p. 95) suggested, "where there is power, there is resistance." According to Ashforth and Mael (1998), resistance implies opposition against something, typically power and the attempt to influence or control an organisational member. They contended that power and resistance are embedded in a dynamic relationship, that one force triggers the other and vice versa.

This contrasts with the classical use of resistance in Information Systems research. For example, Markus (1983, p. 432) viewed resistance as "a product of the interaction of system design features with the intra-organisational distribution of power, defined either objectively, in terms of horizontal or vertical power dimensions, or subjectively, in terms of symbolism." That is, potential users would resist information systems if "they cause a re-distribution of power that either conflicts with the organisational structure (objective definition) or with the interests of individuals who are likely to lose power as a result of the implementation (subjective definition)" (Romm and Pliskin, 1999, p. 28). Markus (1983) claimed that resistance typically falls into these categories. Krovi (1993) reproduced the

structuralist construction of resistance in information systems implementation, analysing the causes of this resistance. Change, he argued, is closely related to resistance (McKenna, 1994; Krovi, 1993; Markus, 1983).

According to Mitchell (2004), to overcome resistance, problematic people either need to be replaced or co-opted into the development process. Furthermore, people resist due to factors inbuilt into the system being implemented. Careful selection of, or attention to software quality, will reduce the levels of user resistance. Finally, resistance is a product of the interaction between personal characteristics and system characteristics. There is a greater focus on issues like organisational setting and the impact on distributions of power, or more specifically, the mismatch between existing patterns of behaviour and new patterns introduced by the system (Mitchell, 2004). By employing greater user participation, we may be able to overcome the issues of resistance that Markus (1983) suggested and remove the structuralist imposition of that approach. Peszynski and Corbitt (2003) argue that power is more diffuse and non-systematic than Markus (1983) had argued. Peszynski and Corbitt (2003) argued that power within organisations in systems implementation results from and creates subjugation of one group to another, thus creating a power shift.

Furthermore, the systems implementation process is people-influenced rather than people-determined. Determinism suggests that power exists as some quantifiable whole and is ingrained and objective. Power in reality is intersubjective. It is, and is becoming, rather than exists unmoved or unchanged. Power changes and is changed. It forms and reforms as the context in which it is created or displayed and is recontextualised by the actors operating within it. The sub group leaders in the organisation described gained their ability to resist from reputation gained and respect imbued in their legitimate power. Power is enacted by subterfuge, containment, disruption, challenge and radical action. Power is not static but dynamic and enforced through challenge rather than hierarchy or organisational structure, as argued in the more interpretive/positivist paper of Markus in 1983, it is through discourse in which power is exercised.

Power by means of discourse gives rise to regimes of truth. Truth, being knowledge that is held to be true, is produced in discontinuous, unstable and mobile political discourses that function as the "general politics of truth." Each institution or society

has its "regimes of truth, its 'general politics' of truth: that is, the types of discourse which it accepts and makes function as true; the mechanisms and instances that enable one to distinguish true and false statements, the means by which each is sanctioned; the techniques and procedures accorded value in the acquisition of truth; the states of those who are changed with saying what counts as true" (Foucault, 1977, p. 131). Part of the post-structuralist emphasis on decentring the subject is via discourse (Thompson and McHugh, 2002).

Discourses are "about what can be said, and thought, and also about who can speak, when, where and with what authority" (Ball, 1990, p. 17). Discourses represent meaning and social relationships; they form both subjectivity and power relations. Discourses are also the practices of talk, text and argument that continuously form that which actors speak. Foucault's disciplinary practices produce knowledge that is inseparable from power (Thompson and McHugh, 2002). Foucault (1978, p. 101) claimed that "we must make allowance for the complex and unstable process whereby discourse can be both an instrument and an effect of power, but also a hindrance, a stumbling block, a point of resistance and a starting point for an opposing strategy. Discourse transmits and produces power; it reinforces it, but also undermines and exposes it, renders it fragile and makes it possible to thwart it." There is a double side to discourse. On one side, discourse liberates and links knowledge to power, it creates power. However, on the other side, discourse exposes our lack of knowledge or weakness, therefore allowing other (more knowledgeable people) to gain the upper hand (and hence more power). For Foucault (1980, p. 119) power "traverses and produces things, it induces pleasures, forms knowledge, produces discourse." Power structures discourse in a discontinuous and diffused manner.

Haidar and Rodriguez (1995, p. 120) suggested that "discursive practices are understood as happenings which essentially fall into the production and reproduction of social, historical and cultural life manifesting not only linguistic mechanisms but also devices of a different order, such as those that reproduce ideology and contribute to maintaining existing power structures." The link between how discourses are created and the power relations is supported by the ideologies of the group or individual members. Foucault (1980, p. 102) argued that:

> The major mechanisms of power have been accompanied by ideological productions…basically I believe that what has taken place can be said to be ideological. It is both much more and much less than ideology. It is the production of effective instruments for the formation and accumulation of knowledge – methods of observation, techniques of registration, procedures for investigation and research, apparatuses of control. All this means that power, when it is exercised through these subtle mechanisms, cannot but evolve, organise and put into circulation a knowledge, or rather apparatuses of knowledge, which are not ideological constructs.

By utilising discourse, members are able to challenge the existing power relations and in effect, establish a new power relation. Members of the implementation team rely on their ideologies to create their discourse, and as a result, define the power relations inside the systems implementation team. Ideologies are the "basic frameworks for organizing the social cognitions shared by members of social groups, organisations or institutions…ideologies are both cognitive and social. They essentially function as the 'interface' between the cognitive representations and processes underlying discourse and action, on the one hand, and the societal position and interests of social groups, on the other hand" (Van Dijk, 1995, p. 18).

Westwood and Clegg (2003) claimed that all discourses are in a constant state of change, as the interactional and textual work that sustains them ebbs and flows. Discourses broaden, develop, and strengthen, but they also wither, decay and die and are reconstituted as they synthesize, bifurcate, coalesce, and fragment. Westwood and Clegg (2003, p. 1) stated "discourses vary in terms of their longevity, coherence and power effects."

Discourses inside systems implementation constantly change as they are challenged, re-created, challenged again and so forth. The discourses surrounding the power relations reflect the dynamic nature of the power relations. The discourse is established in the exercise of power of individuals or groups. It is through resistance that these power relations are challenged. As the power relation is challenged, so to is the discourse. A new discourse is established as an outcome and this discourse continues until the next challenge. As I have previously argued, systems

implementation is a complex process due to the human factors involved, specifically the power and the politics. Discourses allow us to interpret or observe these changing power relations. However, as has been noted, discourse is the hidden dimension of power and politics systems implementation. This hidden dimension co-exists and is both derived from and determines a more obvious position, that of policy.

In order to legitimise power, it can be argued that policy is required. By implementing policy, those with power are able to further legitimise their position and effectively create disciplinary power, requiring the individual to comply with their policy. Hogwood and Gunn (1984, p. 13-18) confirm this by stating that policy is used "as an expression of general purpose or desired state of affairs; as decisions of governments; as formal authorisation." Policy essentially gives the ability to appropriate legitimacy and therefore power. Silver (1990, p. 7) confirms this by suggesting that policy is about "relationships of communication, power, exploitation, consensus, co-operation, competition, and structures, which are formed by those relationships and which impact upon them."

There is currently no literature exploring the use of policy in system selection and implementation, which has highlighted a significant weakness and gap in the literature. However, research by Corbitt and Thanasankit (2002, p. 42), has investigated the role of policy in eCommerce development, highlighting the issue that concepts such as power, control and legitimacy "affect the perceptions and ideology underpinning the policy, and the perceptions of its meanings of those to whom the policy is directed." As a result, policy development is essentially viewed as political and non-rational. That is, bureaucrats and elected officials play a central and complex role in the policy process and cannot be separated from politics (Portney, 1986; Nakamura and Smallwood, 1980). Rather, policy is "influenced by pluralistic inequality associated with sectional interests, power and factions" (Corbitt, 2000, p. 311). Prunty (1984, p. 5), further stated that policy "serves to highlight the issues of power, control, legitimacy, privilege, equity, justice, and above all, values so embedded in the concept of policy."

Corbitt and Thanasankit (2002) claim that power is not limited to existence. It is also related to leadership and acceptance. Peszynski and Corbitt (2003) argue that power and hegemony change and are changed. They form and reform as the context in which it is created or displayed and is recontextualised by the actors operating within

it. Hegemony is existential, created by previous experiences, and influenced by current experiences. According to Gramsci (1971, cited in Strinati, 1995, p. 165), hegemony is a phenomenon whereby "dominant groups in society, including fundamentally, but not exclusively, the ruling class, maintain their dominance by securing the 'spontaneous consent' of subordinate groups, including the working class, through the negotiated construction of a political and ideological consensus which incorporates both dominant and dominated groups." Essentially, hegemony manifests the role of a dominant government in policy, reflecting the relationship between the stakeholders and frames the way political influences affect policy development (Corbitt and Thanasankit, 2002; Corbitt, 2000).

Power relations and hegemony, due to their existential nature are dynamic, transforming and constantly changing. We create our hegemony, discourses and power relations at the same time that we are created by them – similar to Giddens' view of society under Structuration Theory (1979; 1984). This approach also extends Lukes' (1974) third dimension of power, in which the agency and its effects remain hidden. However, Foucault's disciplinary power entirely removes the controlling relationship between the subject and the object (Thompson and McHugh, 2002). By adopting the concept of the panopticon, disciplinary power encourages self-discipline, where prisoners would change their actions in order to comply with the watchtower. Similarly, individuals would change their behaviour and actions in order to comply with the discourse and hegemony established, overcoming resistance and ultimately challenges to the power relations operating.

2.9 Conceptual Lens

As has been argued previously, systems implementation literature has typically been structuralist in nature. There is a view that if systems analysts ensure adherence to certain factors, then implementation of a system will be successful. However, the reality is more complex due to the power and politics that exist through the implementation process. In order to make sense of these complex issues, we need to adopt an argument that allows the researcher to observe and make sense of these issues. Foucault's (1976; 1977; 1978; 1980; 1982) concept of power relations is appropriate because it has been acknowledged that power is non-static, that power relations constantly ebb and flow, and is exercised through discourse. In addition, processes like systems implementation are dynamic. At one phase of systems

implementation, certain individuals or groups may have power. In the next phase, that power may be challenged and new power relations established. As has been argued throughout this chapter, this understanding of power pushes our understanding beyond the positivist perspective adopted in such studies, categorising the various aspects of power.

In this thesis, the non-structuralist view of power as both an obvious and hidden concept provides a lens through which the researcher can observe an implementation process. Rather than focusing on the obvious stages of systems implementation, which have been well documented, the paradigm used in this research enables the observation and extraction of rich data, which will expose the emancipatory levels of influence, such that the realms of power, specifically the concept of power relations, are exposed.

This will enable a deeper understanding of the processes involved in systems implementation and enable the complexity in that process to be made explicit. Rather than viewing power as a possession and adopting a structuralist perspective, this study will observe the various stakeholders of the organisation over a period of time, promoting the post-structuralist view of power. In the case study that is the focus of this thesis, the meaning of the obvious process of systems implementation and the stages of that implementation are deconstructed to expose the hegemonic nature of policy, the reproduction of organisational culture, the emancipation within discourse, and the nature of resistance and power. What this will do is enable the researcher to unravel the complexity, expose intent and enrich our understanding of the systems implementation process.

Chapter Three – Research Methodology

3.1 Introduction

This chapter outlines the methodological approach taken in this study. Previous studies in systems implementation have traditionally adopted a positivist approach. This approach has also extended into studies exploring power in systems implementation, which treats power as a possession and attempts to categorise power (Chapters 2.7). This research however, has adopted a post-structuralist view of power, whereby power is exercised and constantly transforming action upon action. As a post-structuralist view of power has been adopted, in conjunction with the concept of power relations theorised by the anti-positivist Foucault (Chapter 2.8), a post-positivist methodological approach is required. This approach enables the researcher to provide a rich understanding of systems implementation by exploring the hegemonic nature of policy, the reproduction of organisational culture, the emancipation within discourse, and the nature of resistance and power in systems implementation. This approach therefore allows the researcher to answer the question "how is power and politics an integral part of the systems selection and implementation process?"

This chapter provides justification for the research approach used in this study. Adopting a post-positivist methodological approach precludes the quantitative research approach. Section 3.2 therefore discusses the adoption of the qualitative research approach, highlighting its use in studies where meaning of the phenomenon is created through members and their perception of the world. Section 3.3 discusses the adoption of the critical epistemology and how it is used to answer the research question.

Sections 3.4 through 3.6 discuss and justify the data collection and data analysis methods. Data was collected via a case study with interviews of members of the selection and implementation team of an enterprise-wide learning management system at the University of Australia. Myers (1997), citing the work of others, claims that case study research can be positivist (Yin, 1994), interpretive (Walsham, 1993), or critical. As a result, data was analysed under the critical epistemology with a

combination of discourse analysis and social dramas, which identifies key events in the selection and implementation of the learning management system.

Section 3.7 outlines issues of validity associated with the research. As this research adopts a critical epistemology and data was collected via interviews, issues of truth and knowledge of the data collected and of the analysis are raised. Such issues need to be overcome to ensure that any findings are valid and credible. Section 3.8 will provide a summary to this chapter.

3.2 Research Approach

The nature of the problem partially determines why a researcher should select a particular methodology (Creswell, 1994). For a quantitative study, other researchers have previously studied the problem and, as a result, a body of literature exists, the variables are already known and theories already exist. This differs for a qualitative study whereby the study is of an exploratory nature, the variables are unknown, the context is important and there is a lack of theory. Qualitative research also has different aims from quantitative research. It answers questions about what is happening in a particular situation. It gives an impression and feeling that can describe in detail what is happening in a community or in a conversation and includes the meaning of the message, feelings, and effects (Bouma and Ling, 2004).

In qualitative research, what people say is captured and interpreted to understand the participants' point-of-view of a particular event or phenomenon (Burns, 2000). The qualitative approach is appropriate when it is used to answer questions about the nature of a phenomenon with the purpose of describing and understanding the phenomenon from the member's point of view (Leedy, 1997; Orlikowski and Baroudi, 1991). Ongoing interaction with participants and continuous reflection are needed to be able to collect more data to support the findings and give opportunity for the researcher to learn more from the subject or participants. Therefore, in qualitative research, the researcher is more interactive with the participants than in quantitative research (Bouma and Ling, 2004).

A qualitative approach was adopted for this study as qualitative research includes the notion that the qualitative researcher is interested in meaning, how people make

sense of their lives, experiences, and their structures of the world. Creswell (1994) claimed that the qualitative researcher is the primary instrument for data collection and analysis. Data is collected and analysed through this human instrument, rather than through inventories, questionnaires or machines. Qualitative research is descriptive in that the researcher is interested in process, meaning and understanding gained through words or pictures (Leedy, 1997). Morse (1991, p. 120) highlights particular characteristics of qualitative research, claiming that such research is appropriate if "(a) the concept is "immature" due to a conspicuous lack of theory and previous research; (b) a notion that the available theory may be inaccurate, inappropriate, incorrect or biased; (c) a need exists to explore and describe the phenomenon and to develop theory; or (d) the nature of the phenomenon may not be suited to quantitative measure."

Although systems implementation has received significant attention, there has been little research adopting a post-structuralist view of power and politics in systems implementation. Earlier research in the systems implementation process does not tell us the "why," or provide rich insights into the social phenomena of systems implementation. Instead, researchers have been exploring the steps involved with systems implementation and the critical success factors used to classify a system as being successfully implemented. This approach has been critiqued throughout Chapter Two as being positivist. A qualitative approach is therefore required for this research as it enables the researcher to understand the events involved in systems implementation, through the eyes of the members of the implementation team.

3.3 Critical Perspective

Just because a study is qualitative, it does not mean that an interpretive perspective is automatically adopted (Orlikowski and Baroudi, 1991). Klein and Myers (1999) explicitly state that the word 'qualitative' is not a synonym for 'interpretive' and that the perspective of the researcher depends upon the underlying philosophical assumptions of the researcher. Chua (1986) described three categories in which a researcher's perspective is based: positivist, interpretive and critical. Positivists generally assume that reality is objectively given and can be described by measurable properties, which are independent of the researcher and his or her instruments. Positivist studies generally attempt to test theory in an attempt to increase the predictive understanding of phenomena (Chua, 1986). Previous studies in both

systems implementation and power in an information systems context have adopted a positivist approach. The positivist approach lacks the depth and detail of what actually occurs in the system implementation process.

Information Systems research can be classified as interpretive if it is assumed that our knowledge of reality is gained only through social constructions such as language, shared meanings, documents, and other artefacts. Interpretive research focuses on the complexity of human sense making as the situation emerges. It attempts to understand phenomena through the meanings that people assign to them (Walsham, 1995). As described in Chapter 2.7, the majority of early work exploring power in information systems has adopted a functionalist or managerialist view. The attempt to move towards an interpretive epistemology came in the late 1980's with work by Markus and Bjørn-Anderson (1987) and Hirschheim and Klein (1994). The interpretive epistemology became more accessible in the late 1990's with work by Myers and Young (1997) and Romm and Pliskin (1998, 1999).

A third research perspective is the critical approach. Critical researchers assume that social reality is historically constituted and that it is produced and reproduced by people. Although people can consciously act to change their social and economic circumstances, critical researchers recognise that their ability to do so is constrained by various forms of social, cultural and political domination (Chua, 1986). Critical research focuses on the opposition, conflict and contradiction in contemporary society, seeking to eliminate the causes of these inconsistencies (Orlikowski and Baroudi, 1991).

Unlike the positivist approach to Information Systems research, the critical approach observes people "not as passive receptacles of whatever data or information that is transported to them, but as intelligent actors who assess the truthfulness, completeness, sincerity, and contextuality of the messages they receive" (Ngwenyama and Lee, 1997, p. 153). The critical approach also differs from the interpretive approach as the critical approach "requires the researcher to attend to not only the matter of mutual understanding, but also the matter of the emancipation of organisational actors from false or unwarranted beliefs, assumptions and constraints" (Ngwenyama and Lee, 1997, p. 153-154).

According to Kinchelow and McLaren (2000, p. 281), critical researchers are concerned with "issues of power and justice and the ways that the economy, matters of race, class and gender, ideologies, discourses, education and other social institutions, and cultural dynamics interact to construct a social system." The researcher is interested in analysing competing power interests between groups and individuals within society, identifying who gains and who loses in specific situations, which Kinchelow and McLaren (2000) claimed is a central focus of critical research. Furthermore, the critical researcher is "concerned with critiquing existing social systems and revealing any contradictions and conflicts that may adhere within their structures" (Bernstein 1978, p. 181). The researcher tried to create awareness and understanding of the various forms of social domination, ultimately, so that people can act to eliminate them. The critical epistemology is best suited for this research as, in tradition with the anti-positivist work of Foucault, a positivist or interpretive epistemology would lack the ability to focus on the oppositions, conflicts and contradictions in contemporary society, which the critical epistemology provides (Myers, 1997).

Orlikowski and Baroudi (1991, p. 19) added that in critical research "social reality is understood to be produced and reproduced by humans, but also as possessing properties which tend to dominate human experience…the critical research philosophy emphasises the processual development of phenomena. Social relations are not posited as stable and orderly, but as constantly undergoing change." This fits with the perspective of the current study and is post-positivist, thus sharing Foucault's anti-positivist epistemology.

A critical theory approach has been adopted for this study as it is believed that critical theory will create awareness and understanding, for the researcher, of the various forms of social domination. By using critical theory, the researcher is able to critically assess the social reality being studied – power and politics in systems implementation. The problem remains about how to analyse power and undertake this type of research.

3.4 Data Collection Method

In qualitative research, there are different research methods available to collect and analyse information. The choice of research method informs the way in which the researcher collects data. Specific research methods also imply different skills, assumptions and research practices (Creswell, 1994). The objective of this research is to provide a rich understanding of the power and politics involved in systems implementation. As a qualitative approach has been adopted for this research, the researcher wishes to tell the story of the selection and implementation of an enterprise-wide learning management system at the University of Australia. The ability of telling this story can be either by being a participant and reporting the story as it unfolds, or as an observer, interviewing members of the selection and implementation team re-telling the story from the members' perspective. Both approaches will be discussed.

Creswell (1994, p. 11) stated that the ethnographic researcher "studies an intact cultural group in a natural setting during a prolonged period of time by collecting, primarily, observational data." This is supported by Leedy (1997) who noted that the ethnographic method focuses itself on "discovering cultural patterns in human behaviour; describing the perspective of members of the culture; and studying the natural settings in which culture is manifested" (Gall et al., cited in Leedy, 1997, p. 159). As the researcher was not a member of the organisation or the systems implementation team an ethnographic approach cannot be adopted for this study; as the researcher was unable to study the implementation process over a period of time.

The alternate data collection method is the case study. According to Benbasat et al (1987, p. 370), a case study is an examination of "a phenomenon in its natural setting, employing multiple methods of data collection to gather information from one or a few entities." Yin (1994) further added that the case study method is an appropriate strategy when the research tries to answer "how?" or "why?" questions, when the researcher has little control over the events being observed, and when the object is a contemporary phenomenon within some real life context.

The work by Yin (1994) can be seen as positivist, which the researcher acknowledges. However, as Myers (1997) states, "case study research can be

positivist, interpretive, or critical, depending upon the underlying philosophical assumptions of the researcher" The work by Yin (1994) has been used under a positivist epistemology (Yin, 1994; Benbasat et al., 1987). Work by Walsham (1993) has highlighted an interpretive in-depth use of case study research. The researcher wishes to further advance this in-depth use via the critical epistemology, as acknowledged by Myers (1997).

Yin (1994, p. 13) claimed that the case study method is "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident." In other words, the case study needs boundaries to limit the scope of the research, otherwise the case can go into other phenomena and can not create distinct identity in what the researcher is trying to find. The case study needs boundaries that are sufficiently clear and obvious to help the researcher to see what is included within the case and what is excluded from the case (Denscombe, 1998).

Yin (1994, p. 13) further argued that case study inquiry "copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result benefit from the prior development of theoretical propositions to guide data collection and analysis." Although this approach is positivist, through the nature of variables, the idea that multiple sources of data should be collected increases the validity and reliability of any particular study. There is a need to have multiple sources of data in this research in order to enhance and validate the re-telling of the selection and implementation of the enterprise-wide learning management system by the researcher (Section 3.7). However, the advantage of a case study is that there is no specific data collection and analysis method, rather a variety of collection and analysis methods that can be used in conjunction with one another to provide triangulation and rigour to the research. This makes the case study a comprehensive research strategy (Stake, 1994; Yin, 1994). Data from different sources can also be cross examined to see the consistence of the findings to support the analysis (Denscombe, 1998). Data was collected via interviews with members of the implementation team and supporting documents (Section 3.5).

Lee (1989) stated that there is a strong case-study tradition in the academic field of information systems citing the work of Benbasat, et al. (1987), Fulk and Dutton (1984), Kling (1978), Kling and Iacono (1984), Kraemer, et al. (1987), Laudon (1974), Leonard-Barton (1987) and Markus (1983). Benbasat, et al. (1987) argued that case study research is well-suited to information systems research not only because "the researcher can study information systems in a natural setting, learn about the state of art, and generate theories from practice" (Benbasat, et al., p. 381), but also "to understand the nature and complexity of the processes taking place" (Benbasat, et al., p. 381). Although this work is dated, it does show the usefulness, significance and acceptance of the case study method for performing research in the information systems discipline.

There are disadvantages of using case study as the research method (Denscombe, 1998). As the case study method uses only a few examples to represent a wider range of examples that are being investigated, the credibility of generalisation made from the findings is easily criticised (Yin, 1994; Borg and Gall, 1989; Denscombe, 1998). However, Orlikowski and Baroudi (1989, pp. 13-14, cited in Walsham, 1993, p. 15) argued in favour for the use of case studies in post-positivist information systems research, claiming that "the argument of non-generalisability is often raised…[however] every particular social relation is the product of generative forces or mechanisms operating at a more global level, and hence the [post-positivist] analysis is an induction from the concrete situation to the social totality beyond the individual case." The findings in a case study should not be limited to just the one case, instead being generalised to similar cases because there are the same "generative forces" influencing the social relationships. Drawing upon the argument of Stake (2000) and Lincoln and Guba (1985, p. 111), they believed that the term "generalisation" is extreme, claiming that "when a generalisation has been devised, no member of that class, kind, or order can escape its pervasive influence." There is a notion in the Information Systems discipline that craves for a theory that attempts to explain large categories of phenomena, a grand theory. Rather than focusing on these grand theories, it is believed that theories should be developed that are based on either substantive theories or middle-range theories. Substantive theories are restricted to a particular setting such as group, time, population, or problem whereas

middle-range theories fall between minor working hypotheses of everyday life and the all-inclusive grand theories (Creswell, 1994; Merriam, 1988). Stake (2000, p. 439) states that "generalisation should not be emphasised in all research."

It is difficult to define boundaries to limit the scope of the case (Denscombe, 1998). If the definitions of the boundaries are not clear enough, the case becomes easy to be influenced by other factors outside the scope. On the other hand, if the boundaries are too inflexible, the case becomes impervious to reflect the nature of boundaries (Denscombe, 1998). Benbasat et al. (1987) stated that the boundaries in case study research are not clearly obvious, therefore it is easy for the case to be influenced by other factors outside the scope. Stake (2000) therefore advises the researcher to decide which factors should be included in the research and which factors should be ignored; otherwise, it is difficult to state what the case is.

A conceptual lens has been provided in Chapter 2.9, which, in conjunction with the post-positivist and post-structuralist critical approach outlined above, highlights the need for a rich understanding of systems implementation, taking into consideration the hegemonic nature of policy, the reproduction of organisational culture, the emancipation within discourse, and the nature of resistance and power. The case study of University of Australia is an in-depth case study, investigating the implementation of an enterprise-wide learning management system, spanning five years (Chapter 4.2).

3.5 Data collection procedures

Case studies accept and encourage multiple methods of data collection procedures, in order to increase the rigour and credibility, offering triangulation amongst the collected data. Data was collected for this research with:

- Interviews – "Open-response questions to obtain data of member meanings – how individuals conceive their world and how they explain or 'make sense' of the important events in their lives" (McMillan and Schumacher, 1993 cited in Leedy, 1997, p. 159).
- Document Collection – The collection of documents including letters, personnel files, memos, annual reports and objects such as posters to supplement the other information collection methods.

- Twenty face-to-face, one-on-one, interviews were conducted with the members outlined in Table 3.1 below. This method was selected as, according to Daft and Lengel (1986, p. 560) it is the "richest medium because it provides immediate feedback so that interpretation can be checked. It also provides multiple cues via body language and tone of voice."

The information was collected via written notes made by the researcher, and, with the permission of each member, an audiotape-recorder was used in each interview. After each interview, a transcription of the interview was made. Notes were also made during the interview, including reflective notes and demographic information such as the time, date and location of the interview. These aided in providing an audit trail if such a study were to be replicated.

As with most types of qualitative research, the style of interviewing changed with each interview. The researcher used what has been referred to as 'reflection-on-experience' (Boud, 1993; Schön, 1987; Yoong, 1999), which involves "the trainee [interviewer] revisiting the experience [first and subsequent interviews]… The interviewer re-evaluates the experience, makes connections with prior experience, and plans the appropriate strategy to deal with similar events in the future [in this case, modifying the questions in order to achieve the appropriate answer to the research question, or further identify issues that arose in the first interview]" (Yoong, 1999, p. 94).

As a result the questionnaire was modified slightly for each interview. This method was used as it allowed the researcher to probe further on issues identified in interviews conducted with members of the systems implementation team. However, most interviews were in the form of, and used derivatives of, the following questions, "could you please tell me the story of the systems implementation?", "what type of role did you play in the systems implementation?", and "where there any obstacles in your way, in your position (project manager/project champion/end user) during the systems implementation process?" The questions changed to reflect the observations made of the systems implementation group. The final interview schedule is attached in Appendix A. Each interview lasted between sixty and ninety minutes.

Once the interview was conducted, a transcript of the interview was written and sent to the member interviewed in order for them to check the interview and provide changes if information was taken out of context (Section 3.7). Minor changes were made to some questions, particularly to obtain more information or focus on a particular event. Questions were also modified for each representative from different faculties or divisions. For example, there would be no point asking a representative from the Division of Teaching and Learning what specifically happened in the Faculty of Commerce and Administration. Therefore questions pertinent to the Division of Teaching and Learning were asked.

The other source of data collection was in the form of documents, which included collecting publicly available information such as books reporting the history of the University of Australia, conference and journal papers relating to distance education and learning management systems at the University of Australia, action and project plans relating to the selection and implementation of the latter enterprise-wide learning management system, and available minutes of meetings from the meetings relating to the selection and implementation of the latter enterprise-wide learning management system. The time period these documents spanned ranged from a recollection of the previous 25 years of the University of Australia, published in 2002, through to minutes of over 50 meetings held between 2002 and 2004. Although the minutes of meetings may be seen as sanitised, the contents of those meetings were used in order to support the chronological order of events of the selection and implementation process of the enterprise-wide learning management system in the University of Australia.

The benefits of collecting documents as a method of data collection according to Yin (1994, p. 80) are that the information contained in documents are:

- stable, and can be reviewed repeatedly;
- unobtrusive, as they are not created by members of the organisation for the purpose of the research;
- exact, as the information contains exact names, references and details of events;
- broad in coverage, spanning a long period of time; and
- able to corroborate and augment details given in interviews.

It was anticipated that this would help the researcher in obtaining information on how power relations are created or transformed during the periods or social dramas of the systems implementation group. Obtaining access to these documents helped the researcher to validate and verify what members of the selection and implementation have said. This in turn creates a richer picture of the systems implementation group and how they operated during the implementation process.

In order to collect the data, the researcher has adopted the metaphor of the traveller, as discussed in Kvale (1996). The researcher can then report what has been described by the members and what has been supplemented by the documents collected. The researcher is then able to reconstruct a story of the implementation of the enterprise-wide learning management system by the stories given by the members interviewed. Essentially, the researcher is providing their interpretation on the narratives provided by the members interviewed. This is similar to the 'traveller metaphor' as discussed by Kvlae (1996). This metaphor holds that "the interviewer is a traveller on a journey that leads to a tale to be told upon returning home. The interviewer-traveller wanders through the landscape and enters into conversations with the people encountered…what the travelling reporter hears and sees is described quantitatively and is reconstructed as stories to be told to the people of the interviewer's own country" (Kvale, 1996, p. 4). Meanings of the narratives provided by the members may be differentiated, raising issues of validity and reliability, which are discussed in Section 3.7. It is acknowledged that if other researchers were replicating this study, different interpretations may be obtained.

Sixteen members of the systems implementation team were involved in this research out of 23 potential members. The Deputy Vice-Chancellor delegated the selection of members of the Executive Group and Evaluation Group to the Head of the Division of Teaching and Learning. The Executive Group consisted of six members and oversaw the Evaluation Group, which consisted of 17 members. As the Head of the Division of Teaching and Learning, Helen[2], recalled, "*I put forward what the Executive Group and Evaluation Group should look like by writing to the Deans of each faculty asking for their nomination. However I would suggest X and Y, so I was going to end up with the people that I insisted on one way or another.*" The

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[2] Pseudonyms have been provided for all people, places and other identifiable names in order to keep anonymity of members.

researcher selected the sixteen members based on a careful evaluation of the meeting minutes and asking other interviewed members to identify key members of the selection and implementation team.

It was important to get a broad cross-section of each faculty and division affected by the implementation of the enterprise-wide learning management system. There was at least one member from each faculty (Commerce and Administration; Medical and Health Sciences; Creative Arts; Education; and Technology) involved in this study, members from the National Tertiary Education Union (NTEU), members of the Senior Executive of the university and representatives of the two major services divisions involved (the Division of Teaching and Learning and the Division of IT). By having such a broad cross-section, it increases the plausibility of the story, getting each view from each affected faculty or division. This also allows the researcher to verify the selection and implementation process from the points-of-view of various entities involved, thus increasing the reliability of the narrative as told by the researcher. All members interviewed are listed in Table 3.1 and represent a broad spectrum of the selection and implementation team.

Table 3.1. Members of the University of Australia Enterprise-wide Learning Management System Selection and Implementation Team

Name	Position	Area
Prof. John Clement	Pro-Vice Chancellor (Distance Education)	Vice Chancellor and President
Prof. Elizabeth Reeder	Professor of Online Learning	Vice Chancellor and President
Dr. Samantha Davies	Senior Lecturer	Faculty of Technology
Ms Helen Paige	Head of Division	Division of Teaching and Learning
Mr Martin Nichols	Project Manager	Division of IT
Mr Simon Price	IT Manager	Division of Teaching and Learning

Ms Rose O'Leary	Desktop Publishing Manager	Faculty of Commerce and Administration
Mr Sebastian Abbott	Head of Division	Division of IT
Dr. Peter Quirk	Online Communication Manager	Division of Teaching and Learning
Ms Norma Little	IT Manager	Faculty of Commerce and Administration
Mr Paul Foxcroft	Lecturer	Faculty of Commerce and Administration
Mr Nick Jansen	Library Website Designer	Division of Teaching and Learning
Ms Diane Johnston	Head of Teaching and Learning Support	Division of Teaching and Learning
Ms Lara Lawson	Online Learning Manager	Faculty of Creative Arts
Dr. Christopher Bing	Online Teaching and Learning Manager	Faculty of Education
Dr. Sean Parkinson	Online Learning Manager	Faculty of Medical and Health Sciences

This distribution of key informants was considered sufficient for triangulation in providing an accurate story of the implementation process, which will be discussed in greater detail in Chapters 4, 5 and 6. Multiple members were interviewed from the Faculty of Commerce and Administration and the Division of Teaching and Learning as these were the major entities involved. The Division of Teaching and Learning was responsible for the teaching component of the University and therefore have vested interests in the selection and implementation of the enterprise-wide learning management system. The Faculty of Commerce and Administration, as described in Chapter 4.2 was involved with an early learning management system, EasyTeach, and had vested interests in the selection and implementation of a new learning management system. Both of these entities also had greater representatives on the Executive and Evaluation Groups compared with the other faculties and divisions.

3.6 Data Analysis

As stated in Chapter 1.5, this study has utilised the narrative form of telling the story of the selection and implementation process of an enterprise-wide learning management system at the University of Australia. Citing the work of Polkinghorne (1988) and Mishler (1991), Kvale (1996, p. 2000) states that a narrative "contains a *temporal* sequence, a patterning of happenings. It has a *social* dimension, someone is telling something to someone. And it has a *meaning*, a plot giving the story a point and a unity…the narratives of a group contribute to constituting the group's identity." Furthermore, "the stories are reconstructed with regard to the main points the researcher wants to communicate…Narratives provide a powerful access to the temporal dimension of human existence" (Kvale, 1996, p. 274).

This study also used a reiterative analytical technique of taking the literature review, the conceptual framework and the ideological preconceptions of the researcher and applying it to the data collected. Judgements were made on the data and referrals were made to the literature review to substantiate the author's personal judgements. Such a technique is termed 'hermeneutics'. Hermeneutics is primarily concerned with the meaning of text. According to Myers (1997) and Klein and Myers (1999), the basic question is: what is the meaning of text?

Myers (1997), Klein and Myers (1999), drawing on the work of Gadamer (1976) claimed that the hermeneutic cycle helps us in the understanding of the text as a whole and the interpretation of its part, in which descriptions are guided by anticipated explanations. Text is interpreted based on iterations of the researchers own experience and existing literature and research. These interpretations are used to make judgements about text, creating further reiterations and interpretations of that text until conclusions or theorising suggests further reinterpretation. This cycle is shown below in Figure 3.1. The use of the hermeneutic cycle indicates the impact of the researcher on the analysis of the data. As discussed in Section 3.5, the story told in Chapters 4, 5 and 6 is the researcher's narrative of the story told by the members interviewed. This influences how the story is told and acknowledges that other researchers may have different findings. However, the literature also influences the

researcher and the way they interpret and analyse the story, based on the existing literature.
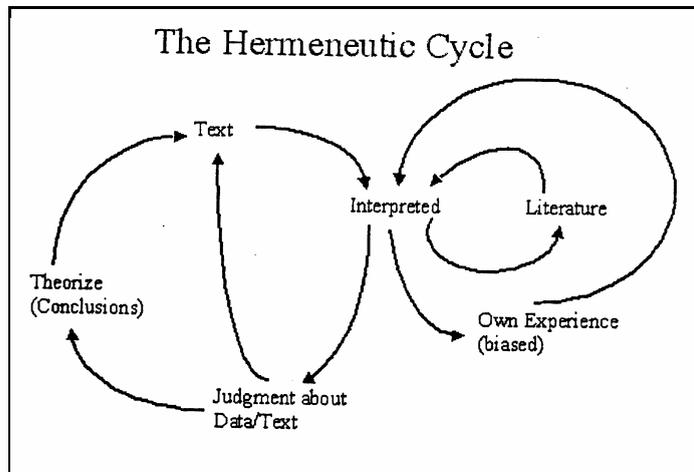
Figure 3.1: The Hermeneutic Circle (Thanasankit, 1999)

Linked into the concept of the hermeneutic circle, discourse analysis was also employed to make sense of, and analyse the collected interviews and documents. According to Howarth and Stavrakakis (2000, p. 4), discourse analysis refers to "the practice of analysing empirical raw materials and information as discursive forms. This means that discourse analysts treat a wide range of linguistic and non-linguistic data – speeches, reports, manifestos, historical events, interviews, policies, ideas, even organisations and institutions – as 'texts' or 'writings'." In other words, discourse analysis puts words into work, giving them meaning, constructing perceptions and formulating understanding and ongoing courses of interaction (Gubrium and Holstein, 2000).

According to Fairclough (2001, p. 25) discourse analysis "has a common concern with how language interconnects with other elements of social life, and especially a concern with how language figures in unequal relations of power, in processes of exploitation and domination of some people by others." Discourse analysis allows the researcher to understand the language and authority of members involved with the study. By utilising discourse analysis as a method to analyse, it is noted that the researcher does not start discourse analysis from texts and interactions, but from social issues and problems, problems which face people in their social lives, issues,

according to Fairclough (2001), which are taken up within sociology, political science and/or cultural studies. To perform discourse analysis, "empirical data are viewed as sets of signifying practices that constitute a 'discourse' and its 'reality', thus providing the conditions which enable subjects to experience the world of objects, words and practices" (Howarth and Stavrakakis, 2000, p. 4).

As discussed in Chapter 2.8, power is a fluid and non-static technique or action that individuals can engage in and is exercised rather than possessed, or, as Foucault (1978, p. 92) states, power "is the name that one attributes to a complex strategical situation in a particular society". By understanding power from this perspective, power can be seen as integral to the outcomes and processes of system selection and implementation. Previous studies have adopted a positivist approach, where power is measured and analysed via a psychological measuring scale or other easily identifiable characteristic, which is structuralist and simplistic and does not provide rich detail of the power and politics in the system selection and implementation process. An interpretive understanding of power has also been utilised in information systems research, but again, this research fails to appreciate the complexities of power, adopting the definition by Dahl (1957, p. 202), where "*A* has power over *B* to the extent that he can get *B* to do something that *B* would not otherwise do," which again is simplistic and structuralist.

Instead, power needs to be observed in the environment in which all actors operate. In other words, to view power and politics in systems implementation, the researcher needs to discuss the implementation process with key players, highlighting any political moves. One way of examining social relations and the role of power in a social context can be examined through social dramas, based on the conceptual approach used by Corbitt (1995; 1997).

The concept of social dramas maintains that a social system and the inherent social relations of people or groups establishes and re-establishes a social equilibrium (Turner, 1957). However, balances are typically disrupted through political, cultural and social challenges. As a result, social disequilibrium or imbalance occurs. Readjustments need to happen in order to restore the balance. As Turner (1957) argued, when readjustments are made "profound modifications" may occur. In other

words, the new social equilibrium is rarely a replica of the old equilibrium. By viewing systems implementation as social drama, we are able to vividly observe how social movements operate in practice (Turner, 1980). According to Turner (1957, p. 161), "the interests of certain persons or groups may have gained at the expense of others…certain relations between persons and groups may have increased in intensity, while others may have diminished." We are essentially seeing challenging and political movements inside the social system. People, or groups object to one another, initiating a social drama.

The concept of a social drama refers to a series of events in which there are shifts in power, views or opinions, and changes in social groups in which the social drama is operating (Turner, 1957, 1974, 1980, 1982; Corbitt, 1995, 1997). Social dramas occur within groups of persons who "share values and interests and who have a real or alleged common history" (Turner, 1980, p. 149). As an idea is contested it leads to a challenging of what currently exists. The actors act out social dramas by developing their interpretation of what has happened and what should happen. Social dramas occur in a context that is defined geographically by location (arenas) and by the underlying values, social constructs and meanings attached to statements and action by each of the actors involved. In the implementation of a system there appears to be a series of events, contestations, struggles, discourse setting, crises or 'social dramas,' which the actors in the implementation process go through (Corbitt, 1997). It is argued that implementation is rarely an ordered or sequential process. Actors within implementation contest and reconstruct the system to achieve their goals, to maintain their ideologies, to change programs, to change existing ideologies or to shift real power.

A post-structuralist application of the concept of social dramas can provide a useful tool for the systems analyst to describe these events and crises that occur throughout the systems implementation process. Corbitt (1995) argued that the concept of social drama needs to be remoulded, removing the structuralist approach given by Turner (1957). Rather than identifying order and structure in the social drama, the researcher needs to provide a framework to identify patterns and the unstructured and unordered nature of human social relations (Corbitt, 1995). The researcher intends to use the concept of the social drama as a means of dealing with, and making sense of, the complexity involved with systems implementation. This will allow the systems

analyst to look at the process itself rather than just at the inputs and outputs, or the interactions and contestations of the process (Corbitt, et al., 2005). Similar to the traveller metaphor offered by Kvale (1996) for data collection, the use of social dramas is only an analogy used in this research to identify key events that occurred in the system selection and implementation process.

In similar vein, the researcher wishes to draw upon the work of Turner (1979), who adopted the work by Goffman (1959; Goffman, et al., 1997) suggesting that actors in organisations act in a manner of calculated performance. Providing the analogy of a stage, actors prepare backstage (behind the scene or social setting) acting in an unconcealed way expressing reservations. Actors in this setting are often critical of others or of what they are to do. In a systems implementation context, the actors could be critical of those handing down, developing or implementing the changing policy or could be critical of the policy texts. Actors then move to the front stage (within the social setting), where they are more conforming. Those actors involved in implementing a system, when confronted with the authors of policy texts or those charged to ensure implementation can become less critical and ameliorative towards the policy. Life, Turner (1957) argued, is a series of dramas acted out in social settings. When conflict or crisis arises in the process, there are shifts in the policy, and a state of flux is created. Again, the researcher wishes to use the analogy of the frontstage and backstage of system selection and implementation in order to identify the obvious exercise of power and the hidden exercise of power, which, as discussed in Chapters 2.8 and 2.9, is developed through discourse.

Turner (1974; 1982; 1985) accepted that a social drama is essentially a power play however his exploration of what power is limited. To strengthen the analytical value of social dramas, more refinement of the role of power is needed (Corbitt, 1995; 1997). According to Forester (1989), drawing on the work of Foucault (1976; 1977; 1978; 1980; 1982), claims that power may be exercised in a number of ways including decision-making, agenda setting, and in the shaping of felt needs. In the implementation process, power can be exercised through misinformation and resistance. The communication of information and arguments can be distorted in the implementation process by the use of ambiguity, deceit, insincerity, misinterpretation, confusion, unresponsiveness, withholding information, manipulation, lack of accountability, mystification and complexity, and

misrepresentation (Forester, 1989). Forester (1989, p. 45) ultimately saw power as political communication and concludes that:

> Power works through the management of competence, or obfuscation; or trust, or false assurance; of consent, or manipulated agreement; and of knowledge or misrepresentation. Each of the three modes of power works in this way, either to thwart articulate democratic participation and encourage positivity, or to encourage articulate political action and the rationalization of a democratic planning (policy) process.

The social drama concept has been adopted in this study as it allows the researcher to create a framework to view the political nature of the systems implementation process. By ultimately breaking down the public episodes of tensional irruption into smaller periods, the researcher can examine the power relations and political nature of that period through the eyes of the members involved in the study. By employing the technique of social dramas, the researcher can also note the transforming power relations, according to Foucault (1976; 1977; 1978; 1980; 1982) from period to period.

The role of the researcher in this study is to effectively collect information needed from the members to be studied. The researcher will analyse the interviews and secondary data (in the form of artefacts such as memos and meeting minutes) in an attempt to interpret the data into a meaningful result.

3.7 Issues of Reliability and Validity

Neuman (2000) raises an important consideration for any type of qualitative research, the need for high quality data. Qualitative data, by its nature is subjective, whereby members subjectively interpret their experiences within a social context. However, the researcher cannot remove subjective views to collect quality data, rather, the members descriptions are required to enable the researchers to immerse themselves in the study and obtain authentic experiences in the social world of members.

Validity in all qualitative studies relates to the rigor of the description and the credibility of the explanation (Boje, 2000). There are two main types of validity in

case study research, internal validity and external validity. The former, internal validity, questions whether the findings or conclusions correctly map the experience. Does the research get at the substance of the story to be told? According to Trochim (2000), internal validity is only relevant in studies that try to establish a causal relationship. It is not relevant in most observational or descriptive studies, for instance, but for studies that assess the effects of social programs or interventions, internal validity is perhaps the primary consideration. The latter, external validity, questions the degree to which findings are credible and can be generalized to other settings similar to the one in which the study occurred.

According to Lincoln and Guba (1985), Kvale (1996) and Neuman (2000), there are activities that can increase the validity of a study. One such activity is prolonged engagement, the investment of sufficient time to learn the 'culture', test for misinformation introduced by distortions, either by the researcher of the members and to build trust. The researchers attempt to familiarise themselves with the members of the implementation team, and speak in the terminology that members would be familiar with, such as discussing previous systems and particular acronyms. Interviews were also conducted at a time that was suitable for them, and in an environment that was familiar to the member being interviewed, typically their office. This made the member feel comfortable and encouraged them to discuss their role and the story of the selection and implementation of the enterprise-wide learning management system at Deakin University.

The other activity performed to increase the validity of a study is through member checks (Neuman, 2000). This activity ensures that members are given the opportunity to provide the ability to dispute or add their own truth to the findings derived from the study by the researcher, and challenge what are perceived to be wrong interpretations. Two member checks were performed in this study. When members of the implementation team were approached, a consent form and plain language statement was given. This informed members of the objectives of the study and addressed any ethical issues. Members were also asked if the researcher could tape record the interviews, which would then be transcribed. The first member check involved the researcher sending each member a copy of the transcript of each interview as soon as it had been transcribed. This allowed members to change their

transcript if desired, including typographical errors and errors by the researcher misinterpreting the recording of the interview. The second member check was performed at the completion of the results chapter. This involved the researcher sending each member a copy of chapters 4, 5 and 6 allowing members the opportunity to provide more information, and specifically, their side of the story or truth to anything that they may have said that the researcher took in the wrong context, or provide further information that is relevant to the case study. Changes resulting from the member checks were minimal and typically involved the researcher fixing small typographical errors, however, some members wished to add further detail to their story, providing another perspective or truth on a particular phenomenon. These changes did not affect the analysis of the story.

Issues of reliability refer to whether the findings by the researcher about the members and events are either internally or externally consistent (Neuman, 2000; Kvale, 1996). Internal consistency questions if the data given is plausible, eliminates human deception and ensures that the story given fits into a coherent picture. By interviewing seventeen members of the selection and implementation team, the researcher believed that an accurate story was given by all members, as they all gave similar accounts of the selection and implementation process of the enterprise-wide learning management system. By the time the researcher interviewed the final member, the researcher was able to recount the story of the implementation process verbatim, due to the consistency provided by the members interviewed.

External consistency refers to the ability to cross-check observations and stories given by members interviewed with other, divergent sources of data (Neuman, 2000; Kvale, 1996). The researcher used document collection as a method to supplement information given by members interviewed to verify what they had said against established and recognised documents. This increased the triangulation of the study, ensuring that the information given by members was accurate, minimising the misinformation, evasions, lies and fronts potentially given by members interviewed (Neuman, 2000; Kvale, 1996).

3.8 Summary

This chapter has outlined the research methodology utilised in this study. A qualitative approach was adopted using critical social theory as the research epistemology. By taking such a perspective, the researcher acknowledges that the social history is created and represented by people, social actors in the systems implementation process.

A case study methodology was employed, enabling the researcher to get inside the organisation and conduct multiple interviews and document collection in order to increase the rigour and credibility of the research. This approach also enabled the researcher to describe the organisation from the members point-of-view, reducing the distance between the researcher and the members of the study. By being immersed in the organisational activities, the researcher can gain richer information as to how power relations are created and how they may transform over time for the systems implementation group.

Data was analysed using a combination of hermeneutics and discourse analysis. The researcher read the complete transcript of each interview and document before analysing the transcript for the creation and transformation of power relations within the systems implementation group. Data was initially coded into as many categories as possible focusing on the "events" as the appropriate unit of analysis (Marshall and Rossman, 1989; Creswell, 1994; Leedy, 1997). The researcher then analysed the collected data via a discourse analysis, in order to identify the hidden aspects of discourse and the power and politics involved in systems implementation.

The next chapter will further establish the context of the research as well as tell the story of the systems implementation process.

Chapter Four – A Story of Systems Implementation – Part 1 – Precursor to the enterprise-wide learning management system

4.1 Introduction

The following chapters (Chapters 4, 5 and 6) tell a story of the implementation of an enterprise-wide learning management system (LMS) at the University of Australia. What follows in the three chapters is in the words of the implementation team, an "emotional," "complex," and "heart-breaking" story. The objective of this study is to explore the question, "how is power and politics an integral part of the systems selection and implementation process?" In order to do this, a post-structuralist view of power is adopted (Chapter 2.8 and 2.9). The observation and extraction of rich data will expose, as Foucault (1978) argues, the "complex strategical situations" that influence the system selection and implementation process, such that the realms of power, specifically the concept of power relations, are exposed. The meaning of the obvious process of systems implementation and the stages of the selection and implementation of the enterprise-wide LMS are deconstructed to expose the hegemonic nature of policy, the emancipation within discourse and the nature of resistance and power. This enables the researcher to attempt to unravel the complexity of system selection and implementation and enhance our understanding of the systems implementation process.

To avoid overwhelming the reader, the story is presented in three chapters, each relating to a major step in the implementation process. This chapter describes the lead-up to the decision to have one LMS and focuses on a number of key events, or social dramas (Chapter 3.6). These social dramas provide the focus for the chapter and relate to important aspects of the University of Australia and the use of online technologies in teaching and learning. The use of social dramas in reporting the key events of the selection and implementation of an enterprise-wide learning management system is to allow the researcher to tell a transparent and unbiased narrative as opposed to the fine details of how and why the University of Australia was established.

Chapter 5 describes the initial conceptualisation of an enterprise LMS through to the decision. The third chapter, Chapter 6, describes the implementation of the new system. At the conclusion of each chapter, there is an analysis of the social dramas that occurred in that step of the implementation process based on the theoretical framework described in Chapter 2.9. Names of all people, places and other identifiable tags have been removed or modified in order to provide confidentiality and anonymity to the members interviewed and the organisation.

As was outlined in Chapter 3.5, sixteen face-to-face, one-on-one interviews were held with the members of the implementation team for the LMS at the University of Australia. These members came from various faculties and divisions within the university. These interviews, together with existing documents from university committees will enable the telling of this story, validating incidents highlighted in the story. The story is supplemented by the official history of the University of Australia, The True History of the University of Australia[3] (Stewart and Strider, 2002), and through a multitude of documents including minutes of meetings and university plans and reports. As discussed in Chapter 3.6, the story told here is the narrative of the researcher, based on the narratives given by members interviewed. Different interpretations and analysis may be obtained if this study were to be replicated by different researchers. The study of the decision made, accompanying documents and the rich data collected will enable the researcher to address the research question.

4.2 Background to the Case Exemplar

Like most Australian universities in the 1970's, the University of Australia was created through the combination of multiple higher education institutions. The University of Australia was originally based in Rivendale[4], a remote town based in the state of Hutt Peak. Many of the universities in the 1970's attempted to identify and target a niche or growing market. The University of Australia targeted distance education as being a large component of the potential students that would only grow in the future, which followed the trend of other universities.

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[3] This is not the real title of the book or authors, which have been modified in order to preserve the anonymity of the institution, however, upon request to the authors, details can be disclosed.
[4] As stated in Chapter 3.5, pseudonyms have been provided for all people, places and other identifiable names in order to provide anonymity of members.

The University of Australia prided itself primarily on the large number of courses and programmes offered to students studying off-campus, although there was a minor on-campus presence in the original campus. The inspiration for the delivery of distance education came from the Open University in the United Kingdom, allowing students to study on-campus or off-campus as their circumstances permitted.

In the late 1980's, the Australian Federal Government introduced a series of initiatives in an attempt to rationalise the higher education system in Australia (Australia. Dept. of Employment Education and Training, and Dawkins, 1988). Due to the high number of universities and tertiary institutions in Australia and the high number of unmet demand for higher education, the Minister for Employment, Education and Training, John Dawkins, created a policy to create a unified national system of educational providers. This initiative was referred to as the Dawkins Reforms, which forced the University of Australia to merge with two other higher education institutions in Hutt Peak. The first institution to merge with the University of Australia was the rural-based Johnsonville University. Johnsonville University had a similar focus to the University of Australia, that of off-campus students. By being based in rural Hutt Peak, and having a low number of students, it was believed by the Vice-Chancellor of the University of Australia that merging with Johnsonville University could potentially increase its market share in an already competitive environment.

The second merger under the Dawkins Reforms was with a city-based institute, the University of Erewhon. The focus of this university was much more on-campus as opposed to the off-campus focus of Johnsonville University and the University of Australia. The University of Erewhon had a high number of students compared with the merged University of Australia and therefore increased overall student numbers to over 15000 students, and increased presence by having three campuses across the state of Hutt Peak. The structure of the newly merged University of Australia can be seen in Figure 4.1.

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┌─────────────────────────────────────┐
│  The University of Australia Council │
└─────────────────────────────────────┘
           ┌──────────────────┐
           │  Academic Board  │
           └──────────────────┘
      ┌────────────┐        ┌────────────┐
      │  Faculties │        │  Divisions │
      └────────────┘        └────────────┘
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Faculties	Divisions	
Faculty of Creative Arts	Division of Administrative Services (DAS)	Division of Financial and Business Services
Faculty of Education	Division of Information Technology (DIT)	Division of Human Resource Services
Faculty of Medical and Health Sciences	Division of Buildings and Ground Services	Division of Campus and Student Services
Faculty of Commerce and Administration	Division of Communications	Library
Faculty of Technology	Division of Course Development	

Figure 4.1: The structure of the University of Australia after the mergers with the University of Erewhon and Johnsonville University.

A Senior Executive committee sits at the top of the decision-making structure and consists of the Vice-Chancellor, the Deputy Vice-Chancellor who is responsible for academic aspects of the university, the Vice-President who is responsible for the administrative aspects of the university, and the Pro Vice-Chancellor, who is responsible for the research aspects of the university. Each senior member of the university is responsible for and oversees issues pertaining to their particular focus of the university. In other words, the Deputy Vice-Chancellor oversees academic issues in the faculties, the library, the Division of Communications and the Division of Course Development. The Vice-President is responsible for the Division of Administrative Services, the Division of Information Technology, the Division of Buildings and Ground Services, the Division of Financial and Business Services, the Division of Human Resource Services and Division of Campus and Student Services.

One outcome of the mergers was the development of conflict between the campuses. When Johnsonville University and the University of Australia merged, there were no problems because both campuses had been involved with distance education and knew what was involved. However, once the University of Erewhon merger

occurred, there was resentment by the University of Australia and Johnsonville University, as the University of Erewhon was solely an on-campus provider and had more students than the other campuses. The University of Erewhon was a strong advocate of, and pushed for more on-campus classes as that had been their focus, as opposed to the off-campus based University of Australia and Johnsonville University, who were still focusing on and driving off-campus classes. In discussing the mergers, Paul, a Lecturer in the Faculty of Commerce and Administration based in Rivendale, believed that the merger between the University of Australian and Johnsonville University was beneficial to both institutions as "*we were both distance education providers, so we had common goals and common views.*"

According to a number of members interviewed (Rose, Paul, Elisabeth, Peter), academics were divided into those who contributed to the promotion of distance education and those who continued focusing on the low number of on-campus students. Members of the university were divided into the two different teaching methods – those who believed that on-campus students were more important than the off-campus students, and vice versa – which mirrored the focus of the mergers, with those from the University of Erewhon promoting on-campus education and the other universities promoting distance education.

Many members from the different campuses believe that there are still remnants of the strong campus identity, affecting the way that units are taught, either on-campus or off-campus (Rose, Paul, Peter, Elizabeth). From the interviews, it became apparent that members from the former University of Australia and former Johnsonville University believed that the University of Erewhon staff still did not take distance education as seriously as the other campuses, primarily on the basis that the University of Erewhon had the highest number of on-campus students and had no history of any distance education provision.

The legacy left by the first Vice-Chancellor of focusing on distance education drove the strategic plan, with the university providing large numbers of courses and programmes via distance education. Academic staff, either those supporting distance education or not, had to develop units for off-campus students. Four of the five faculties were largely involved in distance education. The push for more distance

education in courses and programmes continued throughout the 1980's, continuing the focus of distance education in the University of Australia.

The delivery of distance education was primarily by print-based materials, which concerned the distance education supporters, as there were other Australian-based universities experimenting with '*teletutorials*', the ability to conduct a tutorial with multiple students and an academic staff member via telephones. The University of Australia therefore borrowed the ideas of the Australian universities and the Open University of the United Kingdom, offering teletutorials in conjunction with print-based and non-print-based methods such as audio and video-recordings. The University of Australia was now experimenting with other forms of providing distance education in order to supplement the commonly-used print-based materials.

In summary, what occurred in the early years of the University of Australia was a focus on off-campus students. Under Government policy, the University of Australia was forced to merge with another off-campus focused university and a large on-campus provider of tertiary education. This created tensions amongst staff members and divided members of the university into those that supported distance education and those that focused on the larger on-campus cohort. However, through cooperation with experimentation of technologies for distance education by the Open University of the United Kingdom and other Australian universities, the Vice Chancellor incorporated the use of technologies such as teletutorials and audio- and video-recordings into the strategic plan of the university to extend the educational value of the existing print-based materials.

4.3 Early Learning Management Systems

In the early 1990's, members of the university experimenting with online technologies became concerned that the University of Australia was "*being stereotyped as a predominately print-based operation*" (Peter). Their belief was that despite the University of Australia having a large off-campus cohort, these students were primarily being served with print-based material, with few units having access to the teletutorials. Another supporter of online technologies, Rose, highlighted the issue off-campus students faced when only using print-based material to study. She said, "*when you're a distance education university, there is no attempt to improve the retention rate of remote students, who can be isolated in a big country and global*

context. They [the off-campus students] *experience a lack of social support and the provision of traditional student services is problematic.*" The advocates of online learning argued that there was little communication with fellow classmates and with teaching staff, apart from using the telephone. They believed that the off-campus students felt isolated as they were essentially studying by themselves. Numbers reflected this sentiment as there was a tendency for off-campus students to withdraw from their studies.

Paul, another supporter of online teaching, from the Faculty of Commerce and Administration, further added that "*the major need was for collaborative learning, to be able to communicate, because that's what the students don't get in print. The distance education correspondent's work alone, there's no contact with anybody.*" There was a perceived need by those experimenting with online teaching that the University of Australia needed to have a communication channel, where students (particularly, but not necessarily restricted to, off-campus students) could talk synchronously or asynchronously and have a sense of belonging to the University of Australia in a classroom environment, interacting with fellow class members and reducing the distance remote students often felt.

The first online learning management system (LMS) originated as a local development inside the largest faculty in the university, the Faculty of Commerce and Administration. This system was known as the ETS (Electronic Tutorial System) and was a Unix-based, text-oriented system that provided dial-in network access to email, bulletin boards, the University of Australia library catalogue, and to an online book ordering service. The ETS was an online text-based system housed on the University of Australia's central computers and accessed via terminal emulation software. The ETS was developed in an attempt to bridge the gap between on-campus and off-campus students, reducing the isolation that off-campus students felt.

Over time, the ETS was refined and additional services were added, enabling tailored versions to be implemented to support other units, both undergraduate and postgraduate, across the university, such as Engineering, Education, Work Place Education, Psychology and Instructional Design. The ETS, according to the Professor of Online Learning, Elizabeth Reeder, was never a university-wide initiative and as a result never received recurrent funding. Instead, what sustained the

use of the ETS was the experimentation and enthusiasm of users of distance education technologies, primarily in the Faculty of Commerce and Administration and the Department of Teaching and Learning Development. By doing this supporters of online teaching were now able to promote their skill-set in helping the University of Australia enhance the current print-based method of teaching off-campus students.

Users, both students and academic staff, found the text-based interface difficult to use and often dropped out of tutorials due to the speed of modems. Paul revealed that the ETS "*was pretty flaky in those days with modems…if it dropped out after you're halfway through a big message, you lost the lot…it was frustrating.*" Rose recalled that the system was "*pretty primitive…it took pretty dedicated people using pretty slow modems to use it.*" Although there was initiative to develop electronic systems within the university, the technologies were antiquated, often causing more frustration for developers than bringing the off-campus and on-campus students together.

In the mid-1990's, online LMS technologies started to develop. Groups within the university using the ETS were becoming more interested in using the Internet and the World Wide Web as a potential method of teaching rather than just the Unix-based command system. One particular group leading the development of online technologies for teaching and learning was the Department of Teaching and Learning Development, a sub-unit within the Division of Course Development. The Head of the Department of Teaching and Learning Development reported to the Director of the Division of Course Development, who in turn reported to the Deputy Vice-Chancellor, who oversaw the development of online technologies for teaching and learning.

The Head of the Department of Teaching and Learning Development, Peter, claimed that their department was responsible for educational development of courses, professional development and training with the new technologies of the time, and research and evaluation on the impact of these technologies. It was through this development and the demonstrations to academic staff that members of the university "*started to see the rise of the web and web-based applications being the future, not necessarily only stand-alone applications*" (Peter). There was recognition that the

Internet could be a worthwhile tool to help reduce the negative effects of distance often experienced by off-campus students and the issues involved with ETS. Under the guidance of the Deputy Vice-Chancellor, the Department of Teaching and Learning Development, started to undertake a significant amount of web-based development.

It was at this time that differences and tensions emerged between the Department of Teaching and Learning Development and the Division of IT. The Division of IT staff were developing a student record information system to be used in the university and were concerned about the technological aspects of that system. Decisions were made solely by the Division of IT, which affected other divisions and other systems that would be implemented in the future. According to Peter, the Division of IT "*determined, amongst themselves, that databases were to be developed in Oracle.*"

The decision for databases to be developed in Oracle was made by the Division of IT and "*related to an earlier decision* [by the Division of IT] *to support the Unix operating system, which included Sun Solaris and Oracle for database systems*" (Martin). This decision was also influenced by the Vice-President, who controlled the administrative aspects of the University of Australia, and oversaw the Division of IT. The Vice-President believed that Australian universities were moving towards a centralised structure, and that the University of Australia should move in the same direction in an attempt to work more efficiently and effectively, and be more competitive compared the other Australian universities (Sebastian). Through making this decision, it was made clear by the Division of IT that Windows-based systems would not be supported. This impacted on any system using Microsoft Windows environments and systems using Microsoft infrastructure, such as the Microsoft email system, the Microsoft web server and the Microsoft database. The Unix/Oracle decision altered the teaching and learning aspect within the University of Australia as various schools had internally developed requirements to be able to teach via Microsoft technologies.

This decision to move towards a centralised system was made purely on technological grounds by the Vice-President and the Head of the Division of IT. In providing reasoning for this technological focus, the Head of the Division of IT, Sebastion, saw that they had to "*ensure that whatever product we acquired would*

run on a technology that is in line with our key strategic direction. The functional requirements from a teaching and learning perspective is not my core competence and I am more than happy to leave it to staff with responsibilities in those areas. I'd rather be respected for what we are good in, don't tell me how to run IT, and I won't tell you how to run the teaching and learning." The Division of IT claimed that they were only responsible for monitoring the technologies used in the University of Australia. This claim neglected the use of technology in teaching and learning. As a result, decisions about technology that affected the teaching and learning inside the university were made apparently with little or no consultation, leading to what some interviewees saw as potentially poor decisions that could seriously affect teaching and learning inside the University of Australia.

Furthermore, the Head of the Division of IT noted that "*the Division of IT's role is purely about the IT infrastructure, that is, from the outside looking in. It's the IT network infrastructure, the microwave, the optical fibre, right down to what students and staff receive on their desktop.*" By policy, the Division of IT supports hardware or software. Through this policy, it was expected that, all divisions would be responsible for the data inside databases and other applications. Furthermore, as the Division of IT were concerned only with the technological infrastructure of the university, they had not considered, it seems, the implications for teaching and learning of the decision to use Oracle to develop systems (cf Winner, 1986; 1992).

In talking with the Head of the Department of Teaching and Learning Development, Peter claimed that his department started developing applications via the Internet and the World Wide Web to help provide and support the distance education programs. In this development phase, it was claimed by Peter that there was little input from the Division of IT. As there was little communication between the two divisions, the Department of Teaching and Learning Development believed that they "*pragmatically went with the full suite of Microsoft development tools as these tools were currently available within the university*" (Peter). The Department of Teaching and Learning Development therefore thought that they were right in choosing the Microsoft development tools as these tools were available and accessible. The Department of Teaching and Learning Development claimed that they were not aware that the Division of IT had made the decision to build systems and applications only with Oracle.

Once the decision by the Division of IT about the use of Oracle databases was announced, the Department of Teaching and Learning Development then tried to "*negotiate with the Division of IT around open data connections…gaining access to Oracle to link in the database used for teaching and learning applications to the student record information system*" (Peter). However, this proved to be difficult. "*The Division of IT started to argue that although they controlled the infrastructure, they didn't control the data and the student information system was controlled by the Division of Administrative Services* [a separate division]. *We were getting the run-around there*" (Peter). Although the link required by the Department of Teaching and Learning Development was fairly easy to create, the Division of IT , it seems, did not want to do this. They made it explicitly clear that their role was to oversee the technological infrastructure of the university. At the time, there was an apparent gap emerging between the Division of IT and the Division of Administrative Services and other divisions within the university. This gap also seems to have extended to academic users, whereby the Division of IT and the Division of Administrative Services were limiting the potential choices of academic staff.

According to the interviewees, the attitude of the Division of IT did not sit well with all other divisions of the university, except the Division of Administrative Services. Peter, from the Department of Teaching and Learning Development was still pushing for Microsoft-based systems taking the view that, although those using the Microsoft tools were traditionally "*academic individualist and hobbyist,*" there were still a large number of people interested in creating useful applications that "*work really well for them.*" However, when these people wanted to upscale their application, enabling it to work across the university, they were "*doomed to failure*" because "*the university would not accept any Microsoft solution as being part of a corporate infrastructure*" (Peter). Peter admitted that there was potential for Unix-based applications inside the university. However, based on the discussions of members interviewed, it was apparent that they believed that the Division of IT were being stubborn and controlling in terms of the decisions relating to the technologies that the University of Australia would be using for systems and applications. There was a belief at the time, expressed by many of the interviewees, that there would be many difficulties if the university decided to reject any Microsoft-based systems for teaching and learning applications.

As a result of the decision to develop the university's IT infrastructure in Unix/Oracle only, policy was implemented by the Vice-President and the Division of IT requiring all systems to run on Unix and Oracle (cf Winner, 1986; 1992). The impact this had on other areas of the university was fairly significant. Systems had already been built, or were in the process of being built on different platforms, such as Microsoft Windows and Mac OS. Through this policy, the developers of previously built Windows and Mac OS systems were required to modify their applications and ensure that their system could be transferable to the Oracle system. The Head of the Department of Teaching and Learning Development believed that this was a poor decision as the teaching and learning components had not been considered when the decision to use Oracle was made.

Although there was a belief by the Vice-President and the Head of the Division of IT that, by moving towards a central system, efficiency within the university would increase. However, academic staff seldom used the Oracle database. Instead, the Oracle database was utilised by the administrative divisions such as Finance, Human Resources and the Division of Administrative Services. It was apparent from the interviews that the academic staff in the university believe that there was little benefit for academic staff in this decision to select and implement systems that ran only on the Unix and Oracle platform.

Whilst the technological infrastructure debate between the Department of Teaching and Learning Development and the Division of IT was going on, the use of the ETS by academic staff spread from the Faculty of Commerce and Administration and was being used in the Faculty of Creative Arts and in some units inside the Faculty of Medical and Health Sciences. Use of the early online learning management system was starting to grow organically throughout the university. As use increased throughout the university, members within the Faculty of Commerce and Administration decided to "*see what was available commercially, because we couldn't keep up with trying to adapt and modify the ETS ourselves, and we knew it was the wrong path to go down*" (Paul). Rather than spend time and resources trying to build a system, whose use had increased exponentially, it was thought that an external company could offer a better solution that could handle the high number of users within the university.

In 1994, the University of Australia obtained a grant of over two million dollars from the Australia Research Council (ARC) to fund an information and communication technology enhancement program. There were four specific objectives derived from the information and communication technology enhancement program[5]. The first objective was to enhance and expand the telecommunications options for effective interactive teaching and learning though the development of the computer-mediated communications system, incorporating sophisticated multimedia capabilities to improve affordable access for large numbers of students. The second objective of the program was to investigate new forms of multimedia interactions with students through the use of desktop conferencing. The third objective was to extend electronic interactions with offshore students, particularly the Asia and Pacific region. The fourth objective of the information and communication technology enhancement program was to further develop computer-based LMS's for multi-platform environments, incorporating teaching and associated administrative functions.

One specific project of interest to this research was the development of a computer-based LMS. Money was allocated to the Faculty of Technology, who would acquire, adapt and implement a LMS within their faculty. According to Peter, '*the faculty trialled this in 1996-1997 and it didn't quite work. In the end, they just gave up on it.*" The interviewees reported that as the Faculty of Technology could not deliver the LMS, the Department of Teaching and Learning Development took it upon themselves to develop the LMS. However, as reported earlier, the Department of Teaching and Learning Development utilised Microsoft development tools. It was apparent from the interviews that this action had the effect of enhancing the conflict between the Department of Teaching and Learning Development and the Division of IT.

Although money was allocated to the Faculty of Technology, the remaining four faculties saw the opportunity to receive extra funding and were starting to develop or purchase and implement their own LMS, incorporating computer-based technologies to provide distance education via the Internet. The Faculty of Commerce and Administration and schools within the Faculty of Creative Arts and the Faculty of

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[5] The final report of the information and communication technology enhancement program (October 1997)

Medical and Health Sciences continued using ETS. Other schools within the Faculty of Medical and Health Sciences and the Faculty of Education were using an internally developed computer-mediated communication system and internally developed websites respectively.

Because of the diverse computer-based learning management systems operating within the university, the development of technologies and the increasing complexity of the work of the Department of Teaching and Learning Development, the Senior Executive decided to restructure the department in an attempt to improve efficiency (Peter). It was decided to split the Department of Teaching and Learning Development into the Department of Teaching and Learning Resources and the Division of Academic Development (DAD). The Department of Teaching and Learning Resources was now responsible for delivering print, audio, video and printing services. The Division of Academic Development were responsible for education design, evaluation and research, technology/software development and the university's academic professional development focusing on experimenting with and developing the new educational technology agenda, specifically computer-mediated communication, computer-assisted learning, multimedia and computer managed learning systems. Both newly formed groups reported to the Deputy Vice-Chancellor.

In late 1994, the University of Australia was recognised by the Australia Federal Government for its innovative use of technology in providing distance education. This recognition was due to the advances in technology used to provide computer-based learning management systems within the university, albeit in a diverse manner with each faculty operating their own learning management system, and in some cases, different schools within each faculty running their own system. Upon receiving this recognition, the Faculty of Commerce and Administration decided to explore the commercial technologies available to enable better provision of distance education online.

As a result, the Faculty of Commerce and Administration acquired a commercial LMS, EasyTeach, in 1995. EasyTeach is an Internet communications system that provided group conferencing, email, real-time chat, a community directory and file-sharing, as well as the ability to facilitate inter-group and inter-personal

communication through both messaging and real-time chat. The Professor of Online Learning added that in her view, "*this allowed the University of Australia students and staff from all around the globe to meet online and engage with peers, classrooms, services and support around the clock.*" According to many interviewees who had used this system, EasyTeach further closed the gap between on- and off-campus students, encouraging students to interact with one another, regardless of their location.

Like other online technologies used for distance education, the use of EasyTeach increased rapidly within the Faculty of Commerce and Administration as members of the faculty became aware of the capabilities of EasyTeach. Paul, a lecturer in the Faculty of Commerce and Administration, recalls, "*pretty soon we had just about all units, or major units, off-campus units, then we spread it to the BCA* [Bachelor of Commerce and Administration] *and this was a quantum leap, because nobody had tried to do it large scale.*"

Furthermore, as EasyTeach usage increased within the Faculty of Commerce and Administration, demand across the university increased. According to the interviewees, EasyTeach was receiving wide recognition across the university for its capabilities and potential in online education, and other academic staff were willing to adopt it for their units. Usage increased exponentially each year from approximately 19,700 students in 2000 to a projected 32,000 users in 2003[6]. Rose, the Desktop Publishing Manager for the Faculty of Commerce and Administration, believed that usage grew "*because it was used for a whole range of other things apart from direct teaching and learning, it was also for support for off-campus students.*" Apart from individual units having their own area in EasyTeach, there was an area dedicated to general discussions, where students could post messages and discuss anything from music through to politics, which "*all students had access to, for support and peer networking*" (Rose).

One of the advantages of using EasyTeach was that EasyTeach "*was a client server*" (Paul). Academic staff and students could essentially work offline. Users could log on, download all the necessary information, files and messages, logoff and work on

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[6] The University of Australia's EasyTeach environment, Upgrade and expansion proposal 2000-2003, (Rose)

their local computer. Once they had completed their work, they could log on again and upload their responses. There would be no apparent disadvantages if students had a slow connection. They could work just like an on-campus student, downloading and uploading all necessary information. According to Norma, the IT Manager for the Faculty of Commerce and Administration, the academic staff members believed that EasyTeach was "*particularly good for content. You can take a whole set of different sorts of formatted files on different protocols and just drag and drop them in.*" According to users interviewed in this study, setting up the teaching area in EasyTeach was easy to do and a matter of 'drag and drop', regardless of the operating system. Staff members found this particularly easy to do, even if they were not technologically skilled. They knew what information they had to upload and how to do it.

According to key informants, the use of EasyTeach within the university created tensions with the Division of IT. The Division of IT were not happy providing support for EasyTeach users, primarily, "*because, the technology wasn't consistent with the overall IT architecture that was the university's corporate standard*" (Helen). EasyTeach did not comply with the Unix and Oracle infrastructure as established by the Vice-President and the Division of IT, and as a result, the Head of the Division of IT claimed that EasyTeach was quite unstable. The Head of the Division of IT said that as a result they reduced the support for the use of EasyTeach across the University, primarily because "*the Division of IT were being forced to support EasyTeach in an environment that did not suit them*" (Helen).

The use of online technologies for teaching and learning began in an attempt to supplement the large amount of print-based materials used to support off-campus students in their studies. The academic and support staff believed that the use of online technologies for teaching and learning would minimise the isolation of off-campus students. The interviewees noted that various groups of academics within the university were developing their own systems in an attempt to solve this issue. This in turn, it was revealed, created tensions amongst divisions, departments and faculties. The Division of IT, working with the Vice-President, promoted the policy requiring all systems in the university to operate on a Unix and Oracle infrastructure. Apparently, departments and faculties were not consulted in this decision and continued to develop systems on different platforms.

Between 1995 and 1998 academic staff continually developed online teaching and learning systems across all five faculties in an attempt to receive funding from the ARC grant awarded for an information and communication technology enhancement program. Online learning had accelerated in use across the entire university. However according to the interviewees, there was little co-ordination between the various faculties and their systems, leading to a diverse and complex LMS environment. Due to this complexity and diversity, division restructuring occurred, in an attempt to aid faculties in their use of online technologies for teaching and learning. Essentially, the environment had become complex and messy In 1998, the Senior Executive, and specifically the Deputy Vice-Chancellor, who was responsible for the academic aspects of the university, decided that the benefits of technological use in teaching and learning needed a university-wide perspective as opposed to the diverse number of systems operating within the university. There was a need to create uniformity across the university and bring the faculties and schools together, which would ultimately be delivered via an enterprise-wide learning management system.

4.4 Selecting the first enterprise-wide learning management system

In 1998, the Senior Executive, senior members of the university including the Vice-Chancellor, the Deputy Vice-Chancellor and the Vice-President, were concerned that the University of Australia was falling behind other Australian higher education institutions offering distance education in terms of the use of technology. The Senior Executive identified that there was a lack of resources available for supporting the multiple systems operating within the University of Australia. The Head of the Teaching and Learning Division, Helen, claimed that "*a very high level decision was made that we would go and get a LMS to replace EasyTeach basically or at least get a LMS.*" It was decided by the Senior Executive that to provide efficient and effective support, the university needed "*one system to replace EasyTeach, EducateMe Standard Edition and internal websites, and get everybody into that one system*" (Peter). The university could not sustain multiple learning management systems due to the large amount of resources required to support the various systems.

The Senior Executive believed that in order to maintain its niche market of off-campus students, "*there was the notion that we needed a LMS and what was conceived of was something that didn't yet exist*" (Elizabeth). Although no specific requirements were made available, the Senior Executive decided that the University of Australia "*wanted not a campus thing but an institution-wide system*" (Elizabeth). There was the understanding that this LMS would be only one system and it would run across the multiple campuses, faculties and schools.

In order to achieve the goal of one learning management system, the then Deputy Vice-Chancellor and the Vice-President appointed a Director of Distance Education. In selecting the enterprise-wide LMS, two sub-committees were established in 1999, an educational sub-committee and a technical sub-committee. The two committees apparently worked independently, reporting back a short-listing of the best systems shown from their respective technical and education perspectives. Rose recollects, "*we got a number of organisations to do presentations: QuickLearn; something developed for Telstra; and IBM...we did an evaluation process that largely checked off boxes.*" In 1999, there were only a few organisations dealing with LMS's. According to interviewees, the selection process almost became a quantitative selection, where if the potential LMS met a certain number of criteria, then that would be deemed to be the best LMS for the University of Australia. The three products available for consideration were QuickLearn, another system developed by IBM and a third system developed for an Australian telecommunication company, which could be modified to suit a higher education institution.

According to the interviewees, when the two sub-committees met in July 1999, a recommendation was made to the Director of Distance Education that QuickLearn was the system that met most of the criteria. However, this decision came with many "*caveats, qualifications, reservations*" (Simon). QuickLearn had to deliver certain additional technical patches to improve the system, making it more stable and ensuring that it operated with a large number of users. As QuickLearn met certain requirements "on paper" it was deemed to be the best system. According to the interviewees this decision caused a degree of consternation amongst members of both sub-committees. As a result, representatives from other IT academic constituencies at the University of Australia withdrew from the selection and implementation team because, as the informants noted, they apparently had no

confidence in the selection process. Additionally, it was said members of the wider university community were not happy with the decision because there was little input from the schools and faculties. It was also believed by the informants that there was a great deal of behind-the-scenes 'politicking' going on, in order to have QuickLearn chosen as the enterprise-wide LMS.

According to the Head of Teaching and Learning Support, Diane, QuickLearn was "*selected for all the wrong reasons because it was the only system that sat on the Oracle database.*" Peter further added that, "*the issue was that QuickLearn was selected because of the non-negotiable technical criteria that any system acquired by the University of Australia had to run on Oracle at that point…in terms of front-end functionality QuickLearn was OK but not brilliant, but it ran on Oracle.*" QuickLearn apparently was not the most user-friendly system available, but as it appeared to be the only potential system that ran on Oracle, it was selected. It was the perception of the interviewees that decision-making at the University of Australia was highly centralised with key centralised functions such as the Division of IT having a greater say than the decentralised schools and faculties.

Paul, a member of the Faculty of Commerce and Administration, and a strong supporter of EasyTeach believed that the Director of Distance Education was going to support the selection of EasyTeach, claiming that "*the Director of Distance Education was good because he thought EasyTeach was a fantastic product.*" As Paul was familiar with EasyTeach and had been a strong advocate of the system, he, like many academic staff wanted someone who would ultimately select EasyTeach as the enterprise-wide LMS. However, many of the interviewees noted that there appeared to be interference coming from a number of areas of the university. They suggested that it was coming from the office of the Vice President, the Division of IT and the University of Australia's Industry Division[7]. Paul continues, "*all of a sudden, the Director of Distance Education came out batting for QuickLearn, which was bizarre, because the QuickLearn people came in to demonstrate and staff were just there watching and standing up and asking questions and being so critical and all he* [the Director of Distance Education] *was doing was defending the company. He was doing somebody's business.*" Norma confirmed this by adding "*there were even*

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[7] The University of Australia Industry Division is a sub-division of the University of Australia that works closely with the business community designing tailored training and education solutions for clients.

rumours at the time that the people who were charged with conducting this evaluation process actually had an agreement with the software company before they even started the process, but they were all rumours.”

People in the distance education area, and specifically the supporters of EasyTeach and members of the Division of Academic Development were confused by the selection of QuickLearn asking *“why the selection committee did not see* [other known products of the time]*, ChalkOnline and EducateMe Standard Edition, which was being used in the Faculty of Technology. Those were the products which were being grown out of the higher ed system”* (Paul). However, because of the policy requiring systems to operate on a Unix/Oracle infrastructure, the University of Australia was apparently not interested in looking at any system unless it ran on Oracle, which, according to Peter, *“really did trip us up, eventually.”*

The supporters of EasyTeach continued to criticise the selection of QuickLearn creating rumours that the University of Australia Industry Division at that time *“had a large North American client and they desperately needed a LMS as part of that contract…so I think there was a little bit of the University of Australia Industry Division behind key university decisions”* (Peter). The decision, it was perceived, was not necessarily made by members of the sub-committees, but potentially by other divisions of the university, without consultation with the sub-committees. It was believed by members of the Faculty of Commerce and Administration and the Division of Academic Development that between July and November 1999 there was pressure on the university from the Vice-President and the Vice-Chancellor to have an enterprise-wide LMS. As QuickLearn complied with the technological infrastructure and met the majority of quantitative criteria, it was purchased and implemented.

However, upon speaking to a member of the current Senior Executive at the University of Australia, there appears to be another side of the story. The decision about which enterprise-wide LMS would be implemented at the University of Australia was ultimately made by the Vice-Chancellor. The Vice-Chancellor relied on two colleagues, the Deputy Vice-Chancellor and the Vice-President for information about making this decision. As the Deputy Vice-Chancellor at the time of this decision was only in an acting position, most of the information relating to the

decision came from the Vice-President. The Vice-President supported the policy to only implement Oracle-based systems only and therefore recommended a new LMS comply with this requirement. The Director of Online Learning was ultimately left with no choice and was, it was reported told by the Vice-President, the Vice-Chancellor and the Head of Division of IT to match the system that best fitted with the University of Australia's corporate systems. The only available system available at the time was QuickLearn.

Although the goal of choosing QuickLearn was to provide coherence within the university, there was no policy or requirement for schools and faculties to remove the systems they were currently using and adopt QuickLearn. As a result interviewees noted, there was significant reluctance to adopt QuickLearn. They also commented that due to the lack of consultation with the members of the sub-committees and the wider university community there was little 'buy-in' to QuickLearn across the university. Almost all of the interviewees noted that those academic staff members that had tried using QuickLearn for their teaching, once it had been implemented, were not overly happy with the system and both staff and students found it difficult to use. Furthermore, academic staff in the Faculty of Commerce and Administration and the Faculty of Technology vocally resisted the adoption and use of QuickLearn for their units.

Key interviewees with members from the Faculty of Commerce and Administration noted that being the largest faculty and the accepted innovators in delivering distance-education, the academic staff members of the faculty were not happy with the need to change to QuickLearn, thus resisting the change and continuing their use of EasyTeach. Even though QuickLearn was implemented and everybody in the university had access to it, "*EasyTeach continued to go, despite the new push for QuickLearn*" (Rose). Helen claimed that QuickLearn "*didn't have the same sort of functionality as EasyTeach.*" Academic staff that had used EasyTeach for their teaching claimed that QuickLearn was a step backwards, primarily because QuickLearn did not have the functionality, "*or even a resemblance to the communication functionality that EasyTeach had*" (Helen). No one in the Faculty of Commerce and Administration adopted QuickLearn due to this lack of functionality and apparently also because the academic staff of the faculty did not *want* to adopt

the new system, and because they perceived that there were high switching costs involved with adopting the new system.

Interviewees also noted that schools within the Faculty of Technology had similar resistance to adopting QuickLearn. The majority of schools in that Faculty had been using a different system to facilitate their online teaching and learning, EducateMe Standard Edition. Diane, the Head of Teaching and Learning Support, recalled that one of the projects she worked on, implementing QuickLearn into some of the units, did not work, because *"in the process of working out what they* [the Faculty of Technology] *wanted and what QuickLearn did, we worked out that QuickLearn didn't do it* [what they wanted]." The Faculty of Technology required more than what QuickLearn could offer. They had one LMS already implemented, EducateMe Standard Edition, so they decided to use that instead of transferring across to QuickLearn.

However, there were some schools that actively adopted QuickLearn. The Online Learning Manager for the Faculty of Creative Arts stated that *"there were some units in the Faculty of Creative Arts that had applied for support* [to facilitate online teaching] *and several units, or programs within the faculty had won that support and were then used as leaders in the trialling of QuickLearn."* However, QuickLearn was not adopted across the whole faculty. The Online Learning Manager for the Faculty of Creative Arts continued, *"we had QuickLearn units supported by the Division of Teaching and Learning doing grand and glorious things and the rest of the faculty using EasyTeach because of its communicative focus and people within the faculty picked it up very quickly and found it easy to use. EasyTeach supported their way of teaching, which involved a lot of communication between themselves and their students."* A number of staff members did not transfer across to QuickLearn due to the lack of functionality, compared to EasyTeach, such as the ability to work offline and the easy-to-navigate structure of EasyTeach.

By late 2000 it was apparent that there were significant problems associated with the adoption of QuickLearn. In setting up the contract and agreement for adopting QuickLearn, a number of requirements were made for QuickLearn to meet, in order for them to keep the university business. As the Project Manager of the latter enterprise-wide LMS stated, QuickLearn *"had a number of requirements which the*

product hadn't met…it became clear that some of the requirements we thought were going to be fulfilled in this upgrade weren't going to happen." Interviewees noted that it was clear that QuickLearn was not going to provide the support and technical patches established in the signing of QuickLearn as the system provider.

The company providing QuickLearn announced that they were changing business direction. Instead of QuickLearn supporting and working with the University of Australia in order to provide an efficient and effective LMS that would assist both lecturer and student, "*QuickLearn was heading down the track of targeting the corporate training online marketplace*" (Peter). No longer was QuickLearn promoting and supporting the higher education market, the organisation decided to head towards the corporate online training marketplace. QuickLearn was now being used to increase "*the usage and effectiveness of training programs in businesses. QuickLearn enables businesses to provide employees with a single access point to all their training needs, and streamlines the management of Instructor Led Training (ILT).*"[8]

There was general consensus across the university that QuickLearn was not the right enterprise-wide LMS to use inside the University of Australia. QuickLearn had reneged on many of its promises of fixing and providing maintenance and general support for their LMS. According to Simon, "*one of the biggest issues was that "promised" next version of QuickLearn had taken much longer to be delivered and they had not delivered the required enhancement.*" The final push to remove QuickLearn occurred in a meeting of the Academic Board in 2000. According to Peter, "*Samantha was very critical of QuickLearn and she was thoroughly alienated. They got up at Academic Board and asked very critical questions about it, and she was really on the outer politically in that period.*" Samantha claimed that "*the forum was the perfect opportunity as it was in front of the Vice-Chancellor, the Deputy Vice-Chancellor, and other academic and administrative staff.*"

As a result, it was perceived by members of the Senior Executive that the University of Australia *"still had multiple systems operating within the university. One allegedly the Division of IT supported* [QuickLearn] *and actively not used, and you still had EasyTeach and EducateMe Standard Edition going*" (Norma). The original

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[8] From the Website http://www.wbtsystems.com/products/lms accessed 06-09-04.

goal for an enterprise-wide LMS was not achieved. The University of Australia still had more than the one LMS operating. The Division of IT would only support QuickLearn, as that was the system that adhered to the established policy on platforms. According to the head of the Division, they argued that supporting multiple systems was financially inefficient and tried to refuse to also support both EasyTeach and EducateMe Standard Edition. However, they did continue to provide IT support for EasyTeach until a new process was established because, according to the interviewees, so many staff were using that system. By mid-2000, it was obvious to the Senior Executive that this forced-implementation of an enterprise-wide LMS was not succeeding.

In addition, a number of other changes had occurred in the late 1990's as the decision to select and implement QuickLearn was made. Interviewees reported that there was a sense of confusion at the lower levels of the university about what the University of Australia was doing in terms of using technologies to deliver an enterprise-wide learning management system. At the same time as QuickLearn was being implemented, a new Deputy Vice-Chancellor was appointed and assumed the same roles and responsibilities of their predecessor. Shortly after this appointment, another re-structuring of the service divisions in the university occurred. There were concerns at several levels within the university that the Division of Academic Development was not servicing the faculties sufficiently. A restructuring in late 1999 resulted in the software development group from the Division of Academic Development being disbanded, with a large number of these members forming a new Division, the Division of Teaching and Learning. The goal of the Division of Teaching and Learning was to collaborate with the faculties and divisions of the university in order to support the university's strategic goals and operational targets. The two support areas of the Division of Teaching and Learning were the Library and teaching and learning aspects of the university. Academic development in the university was then managed by the newly appointed Deputy Vice-Chancellor.

Restructuring of the Division of Academic Development had a significant impact on the push to have one central LMS. The choice of a particular LMS, was now "*driven by a much more top down strategic view which has seen the concentration of power and decision over resources, much more strongly located at the top, and much less at the grass roots level*" (Peter). The reasoning behind this restructuring was to adhere

to the corporate policy established in the University of Australia, to achieve a centralised structure.

The Division of Academic Development was no longer meeting the needs of the faculty or function as it needed to. The structure of the University of Australia that resulted is shown in Figure 4.2.

The University of Australia Council	
Academic Board	

Faculties	Divisions

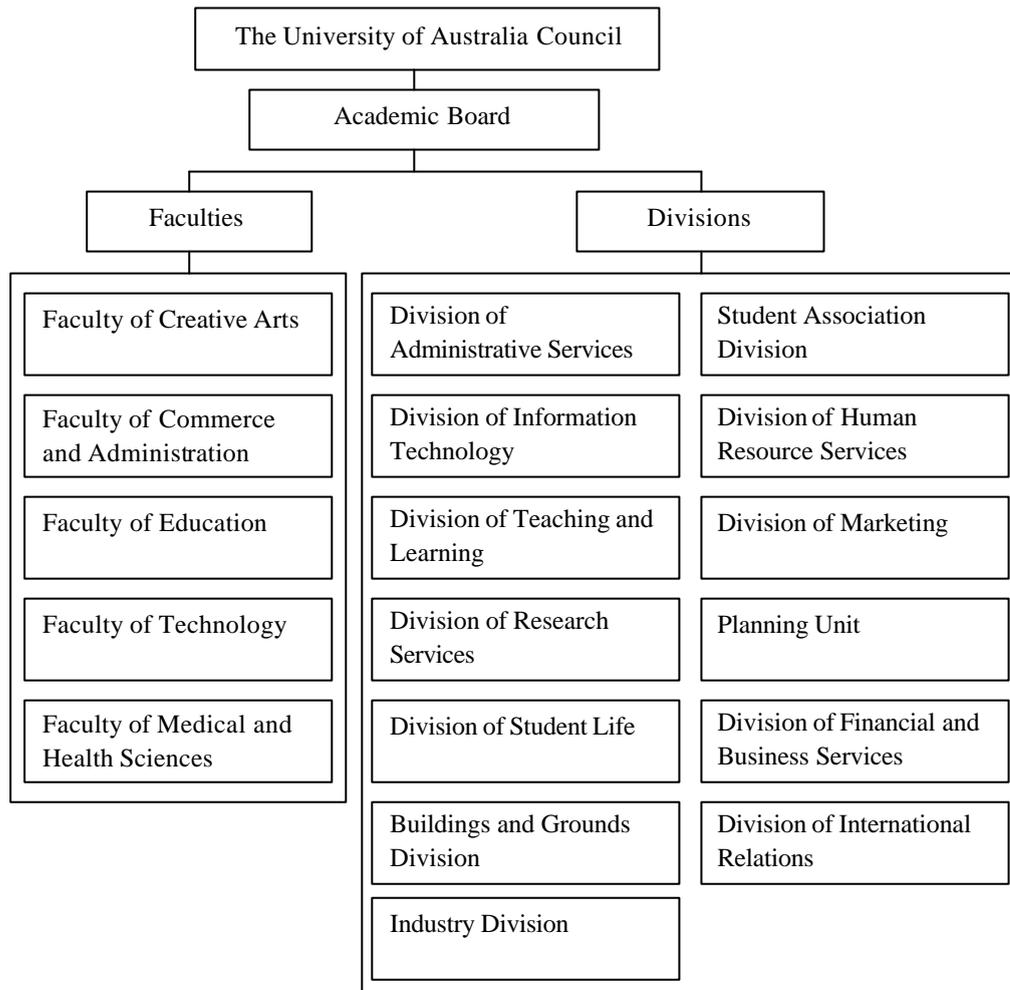| Faculties	Divisions	
Faculty of Creative Arts	Division of Administrative Services	Student Association Division
Faculty of Commerce and Administration	Division of Information Technology	Division of Human Resource Services
Faculty of Education	Division of Teaching and Learning	Division of Marketing
Faculty of Technology	Division of Research Services	Planning Unit
Faculty of Medical and Health Sciences	Division of Student Life	Division of Financial and Business Services
	Buildings and Grounds Division	Division of International Relations
	Industry Division	

Figure 4.2: The structure of the University of Australia in 2004.

To achieve the goal of migrating to an enterprise-wide LMS, schools, faculties and divisions would need to centralise their processes. As a result, all schools across the university would be treated equally and have access to the same information, in the same format.

4.5 Analysis

This chapter has established the context of this study, by reporting the history of University of Australia up to the decision to select a new enterprise-wide LMS, and the use of technologies for teaching and learning to service off-campus students. It is by establishing this context, that the reader is able to understand the impact of how the University of Australia was created, what its goals were and why it viewed distance education as important. Furthermore, it has been established that there were apparent disagreements amongst academic staff, particularly once the merger occurred between an off-campus-focused University of Australia and Johnsonville University campus and the on-campus-focused University of Erewhon campus, with each campus pushing for their style of teaching. There were also apparent disagreements amongst members of various divisions as decisions, which affected the structure of systems within the university, were being made without consultation with other divisions and faculties. The interviewees all have a perception that there is a centralised structure in the University of Australia, which affected the LMS selection process.

By utilising social dramas as a tool to analyse the data (Chapter 3.6), we are able to approach the themes and issues from two perspectives. The first perspective is the obvious, or what Goffman (1959) claims is, the front stage. This is what is apparent to all and is plainly visible; it is what is written in policy as text, what happens in meetings, and what happens in front of an audience. This is the context of contestation. The second perspective is the hidden, or backstage. This is where the politics and discourse lie. This is where discourse emerges, is constructed and reconstructed. In the backstage of social relations in an organisation, discourse creates the intersubjective context for the front-stage, and fosters ideologies and values that inform the politic nature of the dramas acted out in public. It is this moving from the hidden to the obvious that enables the actors, academic staff and administrators, to recontextualise and institutionalise practice and exposes the discourse underpinning action.

In a social drama, obvious issues are apparent to everyone (Turner, 1957). The obvious front stage issues that emerged in this first phase of the implementation of the enterprise-wide LMS at the University of Australia included: the introduction of an in-house developed LMS, the ETS; the winning of a substantial grant to foster and

promote the use of technology in teaching and learning; the adoption and use of the LMS, EasyTeach, by one faculty and of other systems in different schools and faculties; the appointment of the Director of Distance Education; the process of selecting and implementing QuickLearn; the appointment of a new Deputy Vice-Chancellor; the directive from the senior executive to implement an enterprise-wide LMS as a corporate solution to the variety of LMS's operating inside the University of Australia; two restructurings of the divisions servicing teaching and learning, from the Department of Teaching and Learning Development to the Division of Academic Development, and then from the Division of Academic Development to the Division of Teaching and Learning; and the decision to prescribe Oracle as the technological infrastructure platform of the university. Each of these issues underpinned a sequence of social dramas. Each drama was a key event that affected the social relations operating within the university. Each social drama was connected to the key directions and purpose of the university - that of being a provider of high quality distance education.

In this first stage, there were four particular social dramas that appeared to be of more significance than the others. These were firstly, the continuous debates about implementation of a policy requiring all IT systems in the university to run on an Oracle platform. Secondly, there was a drama concerning the discussions about whether the various LMS's were being supported appropriately or in any planned way. Thirdly and fourthly, there were a series of dramas associated with the appointment of senior staff to senior positions.

In the first social drama, tension emerged between the Department of Teaching and Learning Development and the Division of IT over the decision to only use Oracle as the platform for all IT systems within the University of Australia. The Division of IT did not have the resources to support the variety of systems across multiple platforms, as had been the case. Rather, the Division of IT and, through the influence of the Vice-President, the Senior Executive wanted one central system in place, bringing coherency, efficiency and cost effectiveness operationally to the university. The Division of IT claimed that they were specifically employed to administer the technological infrastructure of the university, not to administer the teaching and learning, so any decisions made were purely technologically-oriented. The implications for teaching and learning were considered only in the context that the

chosen operating system would be the support tool for any emerging or new technologies. The Head of the Division of IT had made the decision not to support those technologies for teaching and learning which did not operate on an Oracle platform. Essentially, this issue reflected tension created by an apparent change from a distributed and decentralised system with campus autonomy, based historically in the origins of the various institutions that make up the University of Australia, to a centralised system. The previous systems were believed by academic staff to be serving their needs well. Control of the IT systems was important because the university had made a serious attempt to become as IT service driven as was possible and had invested substantially to achieve that. IT was crucial for not only the administrative processes of the university, but from the story, it is also apparent that it is very important for the distance education identity of the university resulting from the adoption of new technologies by academic staff. Who then controlled the IT was in a strong position. The interviewees noted that academics had control of teaching and learning but felt that their inability to use the systems they wanted or were used to threatened this control. Thus any attempts to remove that control were contested.

The extent of the tensions created and the public debate that ensued created a situation where a whole series of pre-existing tensions between academics and the service and support divisions of the university emerged. This created a second social drama. The drama was created by the tension between the academic staff and general staff as service provision was increasingly centralised. The interviewees had also noted tension between the academic and general staff over the way the university was being managed. Academic influence had become more limited, in their view, to philosophical debate in the Academic Board. General staff had to ensure that work was completed and processes managed that would support academic staff. However, this immediately created conflict as many of the duties general staff were undertaking had previously been under the control of academic staff. The interviewees noted that the academics were critical of the move towards centralised IT and support systems because they argued that this action limited their academic freedom in teaching and learning, an area considered 'sacred' by the academic community (Almond, 1981; Worgul, 1992; Miller, 1996). Furthermore, the debate between the academic and general staff extended to what academic staff wanted and what general staff provided. Essentially, according to the interviewees, divisions such as the Department of Teaching and Learning Development were not seen as

doing their job effectively by the academic staff. This led to the restructuring of this department occurred (Section 4.3).

A parallel social drama emerged at the senior staff level of the university. Debates about support and centralised services, including IT infrastructure platforms, created tension between the Vice-President and the Deputy Vice-Chancellor about control of the technologies being used to support teaching and learning. The Deputy Vice-Chancellor, who led the academic interests of the university, and the Vice-President, who controlled the management and administration of the university, represented the separation of purpose and responsibility that was being acted out in Academic Board and in faculty boards. According to interviewees, academics believed that the Vice-President was trying to gain control of all aspects of the use of information technology where it affected any part of the university. The Vice-President was fixated to the notion of a single operating system, and a single data platform, Oracle, because of perceived efficiency gains and cost effectiveness.

As part of a process of quality improvement and the need to achieve efficiencies within the university, interviewees believed that the Senior Executive was determined to strengthen centralised control of IT. According to the interviewees, those areas of the university responsible for teaching and learning, the faculties and schools, contested this process. Their adherence to the policy was, it seems, at best problematic. There was agreement amongst the interviewees that academic staff perceived that it was the intention of the university administration to bring all areas under some form of centralised control, including teaching and learning, a process they claimed derived from the structures and processes put in place by the first Vice Chancellor of the amalgamated university. One way of gaining that control was to maintain a centralised, single platform, IT policy.

An acting Deputy Vice-Chancellor was selected to fill that position from 1998 to 1999 until a new Deputy Vice-Chancellor was appointed. However, this acting Deputy Vice-Chancellor apparently had little power or influence as the position was only temporary. The control the Vice-President had over the IT infrastructure determined that he had a significant impact on what could or could not be done in teaching and learning, where it depended on technologies. According to the interviewees, it was perceived that the then Vice Chancellor and the Vice-President

used the impact of differentiated uses of technologies for teaching and learning across the university to try and force the university community to adopt one enterprise-wide LMS. To facilitate and strengthen this centralisation, the Senior Executive appointed a Director of Distance Education, reporting to the Vice-President. As was apparent in the reported story, it was perceived by academic staff that the appointee appeared to be influenced strongly to choose a system that worked with Oracle-based databases, irrespective of the desires of academic staff. The new Deputy Vice-Chancellor, when appointed was then given direct responsibility to implement a Senior Executive proposal that the university run an enterprise-wide LMS. The nature of control and the exercise of power in this context were driven by a long-standing need to bring a number of disparate institutions into one and to ensure that the delivery of services, including teaching and learning, was at least standardised across the institution. There was no sense in the interviews that this acquisition of power and the influence derived were for any purpose other than efficiency or cost effectiveness. However such moves were perceived by academic staff to challenge their responsibilities and the power that they felt was rightly theirs for teaching and learning. This perception was the root cause, it appears, of the contestation that emerged and the key formation of the social dramas that resulted.

The fourth social drama emerged once it was decided that the Deputy Vice-Chancellor would implement the newly selected enterprise-wide LMS, QuickLearn. QuickLearn was made available to all schools and faculties as the enterprise-wide LMS. It was also fully supported by the Division of IT. The Senior Executive, through the Deputy Vice-Chancellor, recommended to the Deans of the faculties that they adopt QuickLearn as their system for delivery of distance education programs. However, only the Faculty of Creative Arts and the Faculty of Education accepted this directive. The remaining faculties, it was reported by the interviewees, resisted implementing the enterprise-wide LMS solution, recontextualising the use of LMS's by arguing that their programs were already effective with the systems they were using and that changes would significantly affect students too much. Ultimately the other three faculties did not comply. Instead, the Faculty of Commerce and Administration, the Faculty of Technology and the Faculty of Medical and Health Sciences all continued using their own LMS's, EasyTeach, EducateMe Standard Edition and an internally developed system.

Documents in the university show that the notion of having one enterprise-wide solution was challenged openly in Academic Board, in faculty boards and at the school level. The three resisting faculties were able to continue using their own system with apparently no repercussions, excepting that they had to sustain the cost of running and supporting the technologies themselves. Effectively, although one enterprise-wide LMS had been put in place, few schools and individual academics had actually adopted the use of this system, continuing a scenario of apparently chaotic use of multiple technology systems in the university for teaching and learning. It can be suggested that the intended hegemony of the university was resisted, as were the perceived attempts to implement uniformity and control.

However, such descriptions of the obvious are in themselves limited. Whilst some explanation for crises, conflicts and dramas can be ascertained from what people say and from artefacts such as policy texts and minutes of meetings, none of these inform the researcher about the real reasons behind what is apparent. It is by identifying the reasons behind the apparent that is of interest to this research in order to uncover the social issues involved in systems selection and implementation. As was noted in Chapter Two, so much of social relations are informed by political action driven by discourse. There exists a regime of discipline which attempts to coerce and subjugate. Real emancipation from this regime can only occur through the recognition and understanding of discourse. By moving to the hidden, backstage aspect of the social dramas, the discourse that is operating can be identified and disclosed.

From an analysis of the transcripts of the interviewees and the documentary artefacts within the university, it can be argued that the key discourse operating in the university was autonomy. This created confusion through complexity, which resulted both from and in differentiation of processes inside the university. This discourse of autonomy related to an acceptance that whilst everyone was part of a single university, differences in practices and educational philosophies between campuses and between faculties were accepted as the norm. It wasn't an issue that was debated. It was acceptance in practice.

The new Deputy Vice-Chancellor, when appointed, noticed that there were discrepancies between the different campuses, even though the merger had been

created ten years earlier. This was of significant concern. There had been a constant differentiation between on-campus and off-campus students, leading to differences between face-to-face teaching and online teaching. In conjunction with this differentiated view of what a university is and who the target market of the university was, faculties, and in some cases, individual schools, were given free reign to implement any type of system they wanted. As a result, multiple systems were running, across various platforms, making the university a chaotic and differentiated environment. The then Vice-Chancellor and Senior Executive, it appears, were not concerned by this complex environment as they perceived that the university was in a strong position (Elizabeth). Morale amongst staff in the university was high, and the university had won two national awards, one in 1995 for its innovative use of technology in teaching. There was no perceived need to challenge the status quo inside the university.

However, other Australian Universities were starting to promote distance education via the Internet, providing competition to the University of Australia. Although it was early days for LMS's, the University of Australia believed they had to have one in order to remain competitive and attract a greater number of off-campus students. The perceived problem though, was that the University of Australia was still operating with its discourse of autonomy for each administrative and functional group, running multiple systems. However, this discourse of autonomy, it can be argued, was politically effective. It meant that only centrally was there any semblance of organisational coherence. It can also be argued, based on the evidence, that it was by classifying this situation as one of a lack of coherence that the Vice-President was able to centralise control of the Division of IT, and the Division of Administrative Services, thus being able to focus power in that structure and maintain control. There was an apparent acceptance that the political weakness created by differentiation should be addressed and that this offered an opportunity to centralise control and standardisation of process within the university. Documentary evidence from Academic Board shows clearly that the deputy Vice Chancellor was concerned about the differentiated academic practices within the university and expected that a more coherent, standardised approach be adopted.

In order to combat the perceived problem of multiple LMS's and the impact that this was having on the delivery of distance education programs, the Director of Distance

Education was appointed and given the task of selecting and implementing an enterprise-wide LMS. Despite this appointment and the restructuring of divisions, there was still the perception by academic staff that the divisions were not meeting their requirements in providing assistance for teaching and learning. The obvious dramas of discontent and debate in open forums of the university were informed by a discourse of academic authority. Academic staff believed that their qualifications, expertise and experience gave them authority over and responsibility for decisions about academic matters. Their judgement was reconciled in this discourse. The accepted hegemony of teaching and learning in the university derived from that. This discourse, it can be argued then, was another root cause for academic staff trying to maintain their hegemony in contest with university decisions which were perceived to have the purpose of re-establishing the power of the university where it matters, in teaching and learning based on academic credibility. It can be argued that this was the academic staff's attempt to remove the coercion of discipline associated with centralisation and to free the academic staff to engage in 'pure' academic work. As one would expect, the ramifications of this discourse spilled into the public arena and both informed and, at times, drove public debate within the university. The level of academic freedom achieved by academic staff was significant. Three of the faculties did not change their use of specific technologies for teaching and learning and in the other two faculties the take up of the systems directed by the university for adoption was limited.

Documentary evidence from Academic board and policy documents suggests that the administration of the university believed that this autonomy by academics was out of their control and that the university was losing its focus in terms of its vision. Another discourse emerged. This was a discourse of centralisation. It was the driver to bring all academics into one system and enable control of academic matters of the university to be maintained and managed centrally. The Deputy Vice-Chancellor noted that the corporate *modus operandi* was to centralise control and ensure some degree of standardisation to assure quality. The Deputy Vice-Chancellor wanted uniformity in academic matters within the university, rather than having the different campuses, schools and faculties arguing about the best method of teaching, and how teaching and learning should be facilitated at the University of Australia.

The Deputy Vice-Chancellor wanted to bring the different groups together and have them work under the one label – the University of Australia – through an enterprise-wide LMS, thus creating a centralised structure. However, the concept of one enterprise-wide LMS was contested. Each Faculty, apart from the Faculty of Creative Arts and the Faculty of Education, kept their existing system running, challenging the decision for one LMS, challenging the notion of centralised control, and essentially maintaining the discourse of autonomy. However, there was no resolution to the situation where two strong discourses were underpinning action and reaction within the university. In the next chapter the continuation of the story explores the selection process of the new enterprise-wide LMS in detail.

Chapter Five – A Story of Systems Implementation – Part 2 – The selection of a new enterprise-wide learning management system

5.1 Introduction

In the previous chapter the history of the University of Australia and the use of technologies in teaching and learning was provided. Social dramas and events that occurred in that phase of the story described changes often associated with issues other than the technology-specific issues of a learning management system. This chapter continues the story of the selection and implementation of an enterprise-wide LMS at the University of Australia.

The goal of having one enterprise-wide LMS, QuickLearn, had failed. In fact, quite the opposite effect was achieved. The number of EasyTeach users had increased, particularly in the Faculty of Commerce and Administration and the majority of units in the Faculty of Creative Arts. Other systems, such as personal websites or locally developed systems were operating in the Faculty of Medical and Health Sciences. It was only the Faculty of Education, and a small number of units inside the Faculty of Creative Arts and the Faculty of Technology that were using QuickLearn.

The company responsible for QuickLearn reneged on their contract with the University of Australia in two ways – firstly, they did not deliver on any promises of updates and modifications as requested by the University of Australia, therefore breaking the contract established between the two organisations; and second, QuickLearn as an organisation, was moving into the corporate training market and away from the higher education market. The University of Australia did not renew their contract with QuickLearn and renewed the search for one LMS to be used across the university.

Despite the experience of unsuccessfully implementing an enterprise-wide learning management system, various departments, divisions and individuals were still pursuing a university-wide LMS solution. This chapter recounts the story of the process of establishing a new committee to investigate potential LMSs, as well as creating the terms of reference and responsibilities of the new committee. The

process of generating a list of requirements and the cutting down of potential alternatives to the enterprise-wide LMS will be discussed, with the overall recommendation of a LMS being the final step.

5.2 Setting up of a new committee

Although the first attempt at implementing an enterprise-wide learning management system at the University of Australia failed, the directive for continuing the push for one system remained. Essentially, the desire to implement an enterprise-wide learning management system was now a directive of the university, becoming a strategic goal that *had* to be implemented. This was a position led by the Deputy Vice-Chancellor, the senior person responsible. The Deputy Vice-Chancellor delegated this selection process to Helen and the groups. However, the Deputy Vice-Chancellor was keenly interested throughout the process and offered advice where appropriate. Although the Deputy Vice-Chancellor played no part in the recommendation developed, they were essentially the real driver behind this process.

In order to start the search for a new enterprise-wide LMS, a new selection and implementation committee needed to be established. The Project Manager, Martin, provides his view of the process of removing QuickLearn and beginning the search for a new LMS. He claimed that "*we started up a new project with completely new objectives and started looking at what our requirements were for a complete enterprise teaching and learning system.*" Elizabeth further claimed that when the new selection process started, "*there was a change of players and the new players didn't want to acknowledge the old system* [QuickLearn]. *They wanted to focus on the new LMS.*" The University of Australia, and most notably, the new committee, did not want to focus too much on QuickLearn. This supposedly allowed the new committee to concentrate on potentially getting the best system for the University of Australia without having to deal with the transition from the old failed system.

A working group was formed and came to be known as the Executive Group. This group consisted of six members, the Head of the Division of Teaching and Learning (Helen); the Head of the Teaching and Learning Support Group (Diane); a Senior Lecturer from the Faculty of Technology (Samantha); the IT Manager for the Faculty of Commerce and Administration (Norma); the Head of School from the School of Information Management (John); and the Project Manager (Martin). The chair of the

Executive Group was the head of the Division of Teaching and Learning, Helen. According to the Head of the Division of IT, *"the other notable approach* [in this Executive Group as opposed to the QuickLearn selection and implementation group] *was the use of an IT project manager."* By having a member of the Executive Group with knowledge about project management methodologies, the Executive Group believed that they were now able to work through the selection and implementation process with a methodological approach eliciting requirements from the wider university community as opposed to the quantitative "box-ticking" process used in the selection of QuickLearn.

There was a belief by members of the Faculty of Commerce and Administration that setting up the working group was done in order for the chair of the Executive Group, Helen, 'to make herself look good'. EasyTeach supporters believed that there already was a LMS solution operating within the University of Australia, EasyTeach. They did not see a need to go through the selection and implementation process again. This belief was prompted by Paul, the Lecturer from the Faculty of Commerce and Administration who claimed that *"Helen stepped in and said, "okay, you did it wrongly last time, I can do it better than that, I'll run the process of choosing a product"."*

In an interview Helen claimed that she had the best of intentions for the university - to enable the University of Australia to be the best provider of distance education, and fulfil the requirements which QuickLearn had failed to do – to have one LMS and remove all other LMSs currently being used throughout the university. Having had a close involvement with the QuickLearn selection and implementation, Helen believed that she was able to identify the weaknesses in the original selection process and attempt to eliminate those weaknesses in the new selection and implementation process. In order to do this, Helen noted that *"I used my experience of the QuickLearn fiasco to drive the process* [of setting up a new LMS]*, identifying what was going to be the successful criteria and involving people seriously in the evaluation of the products and developing ownership to that decision."*

Once the Executive Group had been established, the members then decided to *"get an Evaluation Group from different faculties together, so that we* [the Executive Group] *could have a broad spectrum of people to be involved in the whole evaluation*

process. We built up a Evaluation group, which had about twenty-odd members with representatives from different faculties and the Student Association Division as well" (Martin). By involving many representatives in the selection process, it was believed that the best system would be selected, as it complied with the requirements of each faculty or division. This decision locked these members into the decision-making process, and ultimately into the final recommendation.

The Chair of both the Executive Group and Evaluation Group, Helen, provided her reasoning as to why certain people were selected onto the two groups, targeting one group specifically. She said, "s*ome of the people who were on the Evaluation Group had a very big vested interest in EasyTeach. If I didn't bring them along, they could white ant* [undermine] *anything... So I needed to get the most vocal opponents potentially to be involved and to buy-in, feeling that they really had a contribution, so that they would turn into my champions to work with the other people who were going to need a little bit of cajoling* [persuading and supporting] *along.*" Helen believed that by having many people involved, especially the "vocal" ones, participation, feedback and ultimately user buy-in would increase, because those people on either group were allowed to speak their mind and the views of their respected constituency. The other reason as to why Helen pushed for EasyTeach supporters to be involved in the selection process was that the majority of EasyTeach users are in the Faculty of Commerce and Administration, the largest Faculty in the University of Australia. By having the largest faculty on her side, Helen believed that buy-in would increase, because if EasyTeach users could see the benefit of the new system, then the rest of the university would hopefully follow suite, assuring a new system was chosen. This could be perceived as a strategic move by Helen in an attempt to remove targeted criticism of the selection process from supporters of other LMS's, a view supported by the Pro-Vice Chancellor (Distance Education).

Another group Helen targeted were the students, "*and we actually got a really, really big buy-in from the students.*" By having the President and Chief Executive Officer (CEO) of the Student Association Division involved in the process, it gave the Evaluation Group the student perspective. Helen continued, "*when we* [the Evaluation Group] *wanted students to check the system, the* [student representatives] *just got piles of students, so we really did have genuine interest and participation, and I think that it made it an even more robust sort of system because the students*

were there." As it was not only the teaching staff that would be using the new enterprise-wide LMS, but also students, Helen needed to ensure that students were fairly represented on the Evaluation Group, as it was important to get both their views on potential systems and also their overall buy-in.

The Evaluation Group contained the Chair of the Executive Group, the Head of the Division of Teaching and Learning, Helen, as the Chair of the Evaluation Group. All other members of the Executive Group were also members of the Evaluation Group. In addition, there were two representatives from each faculty, one academic staff member and one technical staff member. As Helen mentioned, there were two student representatives on the Evaluation Group as well as representatives from the Division of IT and the administrative divisions (the Division of Teaching and Learning and the Division of Administrative Services). There was an expectation of the representatives to consult with their respective constituencies to bring a wider experience and opinion back to the process. Some representatives communicated regularly with their respective schools, others did not provide this communication.

There was a hierarchical aspect enforced on the newly formed groups. Although the Executive Group would make the decision of what the best system for delivery of distance education and also online education at the University of Australia, the final say and overall decision would be made by the Senior Executive of the University of Australia. It was the members of the Evaluation Group, who were supposedly communicating back and forth between their respected constituencies and the Executive Group that would do the majority of the work in identifying the "best" system to recommend. This hierarchy was highlighted by Simon, the IT Manager in the Division of Teaching and Learning, who claimed that "*the decision* [of which system to recommend] *was to be made by the Executive Group, but it* [the recommended decision] *was based purely and simply on the work and the information that was coming through the Evaluation Group. It was always made clear that the decision would ultimately be made by the Executive Group, and they were going to make a recommendation to the Senior Executive, who would ultimately make the decision.*" Rather than giving the Executive Group and Evaluation Group the power to make the decision about the recommended LMS, it is suggested that the Senior Executive believed that this was a method to increase acceptance, by involving many members of the university in the recommendation process.

Helen also had two other groups operating to the side of these two larger groups, a technical group and a corporate governance group. "*So while most of the effort had been put into getting the functionality of the product right and getting commitment from all the people who are going to be users of it, if it wasn't going to fit in with the technical environment, it wasn't going to be purchased. If the company was not something to be touched with a barge-pole according to the Head of Finance, well, we weren't going to go there*" (Helen). Although the majority of work was conducted by the Evaluation Group, there were other requirements that had to be met in order to purchase the new LMS. With strict technical requirements and problems with QuickLearn losing money, the University of Australia did not want to risk a system that could potentially cost the university millions of dollars and bad publicity. The focus of selecting and implementing the enterprise-wide LMS had shifted from that in the initial stage. The original focus was on the importance of student and staff teaching experience and uniformity of use. The new focus was on bringing the university into alignment internally. This alignment was with both the need to meet the technological management of IT systems within the university and to ensure that there was comparability across all parts of the university in terms of teaching and learning.

Once the Executive Group and the Evaluation Group were formed, the roles and responsibilities of each group had to be established. In terms of the responsibilities of the two groups, the Head of School of Information Management, John, recalled that the Executive Group "*were given management responsibilities to do a review of LMSs, with a view, as I understood it, designated by the Deputy Vice-Chancellor, to move the University of Australia from having five LMSs, to one.*" There was still a push to bring coherence to teaching and learning at the University of Australia by having one system which all teaching staff and student would participate in.

This, however, did not stop challenges from the majority of members of the Evaluation Group. The Executive Group was required to recommend one LMS system for the university and each faculty representative believed that the system they used in their faculty should be that system. There was never an option to recommend more than one LMS. In the first meeting of the Evaluation Group, Helen, the Chair of the Group, recalled that "*there was enormous opposition...it was*

extraordinarily hostile, because I had outlined that the purpose was to end up with one corporate application, not two or any other number, and that that was the task that I had been given."

In order to deal with the faculty members pushing for their existing systems, the Evaluation Group were given a list of generic reasons as to why a new system was needed to give to their respective constituencies. The list of reasons included: the high cost of supporting multiple systems that were currently operating at the University of Australia – EasyTeach, QuickLearn, EducateMe Standard Edition, the cost and effort in supporting locally developed websites, and other individual staff members who were using ChalkOnline's hosted service. Technology had also improved significantly since the currently-used products were acquired and LMSs had properly arrived on the market and had become more sophisticated (Martin). There was also an emphasis strategically on an enterprise-level solution, something that could be utilised by the entire university. The new system would push to provide greater pedagogical flexibility to deliver learning environments, and there was a university move towards an integrated online learning environment. The faculties, schools and divisions appeared to have accepted this, because they could see the potential benefits of having such a system. As the decision to explore potential LMSs was accepted by the wider university community, the Executive and Evaluation Groups were able to begin their search for a new enterprise-wide LMS.

5.3 Eliciting the requirements and selecting the new learning management system

Rather than using the same specifications and requirements from the QuickLearn selection process, which was a quantitative selection, the Executive Group decided that "*we should actually go to the university community and ask them what they want*" (Simon). By involving the greater university community, it was believed that the Executive Group would potentially increase the user-buy-in as academics and students would have possibly felt that they were being heard and contributing to the selection process.

As a result, the Executive Group performed a wide scale survey of staff and students, generating a list of requirements that the new enterprise-wide LMS should meet. The wider university community were invited to provide their list of functions that

individual staff members believed were necessary for them to adopt a new LMS. The Head of School of Information Management, John, further added that the Executive Group believed that the list of requirements should be "*developed by everybody* [including the wider university community], *which was really an excellent process. It was the only probably non-political part of the whole deal, everybody had input into the list of all the functions that the new LMS should perform.*"

The IT Manager in the Division of Teaching and Learning, Simon, claimed that the Executive Group "*took a much more detailed evaluation of the university's requirements and then a look at the various products that were out in the market and tried to match these two things.*" Helen further believed that the Executive Group, "*used the methodology that the Project Manager from the Division of IT [Martin] brought, which was to have streams and various steps under the evaluation process. That is, to have focus groups to get input to creating success criteria and functionality requirements.*" A set of "must have" criteria were established in order for any potential product to be considered. Part of this set of criteria, the technical, had been imposed on the Executive and Evaluation Groups by the Division of IT. The technical criteria included the ability to scale the product across enterprise level and handle large classes as opposed to the typical small classes of 25 students that the majority of LMS were designed for. For the technological infrastructure, the new LMS had to operate on a Unix and Oracle platform, as well as have open standards. The list of criteria also included many items related to teaching, learning, use of multi-media, integration with subjects lists, integration with the students administrative systems, the ability to transfer grades, the importance of integrated chat rooms and interactive teaching and also included that the LMS owner organisation's primary market is higher education and that the organisation is sound financially. This was an identified problem with QuickLearn as the company has stated that it was moving towards the corporate training market. The organisation was also expected to have a significant market share, so that it had a good reputation across the industry[9]. The Executive and Evaluation Groups also ensured that there was common local use and support across Australasia.

The wider university community assisted in creating the educational requirements for the new LMS. This was done via a six-step process, which Helen, as Head of the two

[9] Presentation to the University of Australia staff members by Simon Price, 2001

groups claimed, *"was a very robust process."* The first step was gathering requirements from focus groups of staff and students. Seven focus groups were conducted across the three campuses. One hundred and twenty members participated, which consisted of academic, technical and administrative staff, and undergraduate, postgraduate, on- and off-campus students. A total of some 75 requirements were generated in the focus groups. This was then narrowed down to eighteen key features, based on the number of times the feature appeared in the lists generated by the wider university community. The list of key requirements generated with the input from the wider university community, is shown in Table 5.1.

Table 5.1 The list of requirements generated from surveying the University of Australia's wider community[10]

Ease of Use	Personal presence
Platform and browser capability	Assignment submission
Synchronous communication	Surveys and evaluations
Asynchronous communication	Easy course content creation
Collaborative work	Course material to suit individual styles
Assessment	Import 3rd party content
Results management	Groups
Online help	Database driven web-pages
Customisation	Records management and reporting

An external consulting company was then employed to give the Evaluation Group a prioritisation method to identify the key requirements from the list created earlier, to which the new enterprise-wide LMS *had* to comply with. The external consulting company brought the Evaluation Group into one room and *"gave every person in the Evaluation Group a personal pad with a wireless transmitter on it, and you went through all the questions relating to the different requirements of the system, and the members of the Evaluation Group were able to allocate priorities based on what they felt and respond back through this wireless receiver system"* (Martin). This method allowed members of the Evaluation Group to allocate anonymous priorities to each requirement, allowing the Executive Group to identify what the key requirements for the new enterprise-wide LMS were. Results of the rankings were immediately available depicting the group rankings, allowing the members to see exactly how the

[10] Presentation to the University of Australia staff members by Simon Price, 2001

rest of the group overall thought about the current requirement. Having been through that process, the Executive Group "*came out with basically a prioritised set of requirements for the system, things we felt were not negotiable, things that were really high in terms of what people required from the system*" (Martin). This process was repeated for a group of students, selected by the two Student Association Division representatives on the Evaluation Group.

Through the web survey and prioritisation process described above, the list of requirements were reduced and split into two groups, staff and students, as their perspectives would be different. There were similarities amongst the two views, as can be seen below, shown in Table 5.2.

Table 5.2 Priority requirements for staff and students[11]

Rank	Students	Staff
1	Ease of use	Ease of use
2	Platform compatibility	Platform compatibility
3	Results management	Collaborative work
4	Assignment submission	Asynchronous communication
5	Collaborative work	Assignment submission
6	Asynchronous communication	Results management
7	Assessment	Assessment
8	Synchronous communication	Customisation
9	Customisation	Synchronous communication
10	Personal presence	Personal presences

[11] Easy to use - intuitive, user-friendly interface and navigation
Platform and browser compatibility - users can access the system from different computer platforms and use a range of browsers
Synchronous communication - real-time communication features such as chat, shared whiteboard, audio and video communication
Asynchronous communication - features such as threaded discussion, announcements and messaging
Collaborative work - upload, download and sharing of files
Assessment including online assessment and self-assessment
Results management - tracking of student progress and performance, providing students access to their own marks
Customisation - allowing users to customise their view of the system
Personal presence - user résumés, personal websites and portfolios
Electronic assignment submission – the ability to submit assignments online
Source: Price, S., and Hodgson, T. (2002). Requirements for Online Teaching and Learning at the University of Australia: A Case Study. (Upon request to the authors, full details can be disclosed).

As can be seen in the list, the requirements are similar, but have different priorities attached. For example, although the ability to perform collaborative work rated highly for staff, because they want students to be able to work in groups online for some assessment tasks, it was fifth on the list of students. Understandably, the students would rather have results management in order to see their results, marks and grades for assessments and units.

With the list of requirements settled, the project manager was required to "*find all the LMSs that existed...and they came up with a list of 64 potential LMSs*" (John). Knowing that the university required an enterprise-wide LMS, the Executive Group decided to identify every potential LMS, and then compare the potential systems against the list of key requirements established in order to produce a short list for intensive evaluation.

The list of 64 potential LMSs were then evaluated against the criteria established earlier in order to "*reduce them* [the list] *down to the smallest working subset*" (Simon). If the potential LMS did not meet the key requirements established earlier, they would be removed from the list. This allowed the Executive Group to condense the potential systems to a set of real contenders and a smaller subset in which the Executive Group and Evaluation Group could analyse and ultimately select one from that list.

The Executive Group reduced the set down to "*about five* [potential systems] *and started to do some fairly in-depth analysis of these five determine whether they had products that would actually suit what we had specified as to the criteria*" (Martin). The five systems were then reduced to three potential LMSs by comparing the elicited requirements from the wide university community against the potential systems. Systems that did not meet these key requirements were then eliminated. The three systems were, EasyTeach, EducateMe International, and ChalkOnline.

5.4 Conflict in the selection process

The elimination process did have problems, particularly from the staff in the Faculty of Commerce and Administration, as they were predominantly EasyTeach users. QuickLearn users, on the other hand, were already "*dissatisfied with the lack of functionality* [of QuickLearn] *...so they were almost too happy to jump in to look for*

new products" (Simon). However, users of EasyTeach claimed confusion about why EasyTeach was not considered as a serious contender as the new enterprise-wide LMS, and ultimately claimed further confusion as to why the University of Australia needed a new product.

There was on-going debate within the Evaluation Group about considering EasyTeach as a viable option for the enterprise-wide LMS. The EasyTeach supporters believed that EasyTeach should be the overall system for the University of Australia. However, EasyTeach needed further features, which became apparent in the requirements elicitation process. These features included implementing a grade-book feature, which would hold student information and could be updated with information such as marks as the semester progresses. By investing in EasyTeach, it was argued by the EasyTeach supporters that the University of Australia could implement an enterprise-wide LMS at a better price than selecting and implementing an entirely new system. An example of the claims of EasyTeach supporters can be seen in the following quote from Paul. He claimed that "*we had a product* [EasyTeach]*, it was good. We needed these additional tools to work with, but the guts of the product was really good, and we could have done it* [strengthen EasyTeach to be the overall LMS for the University of Australia] *very cheaply.*"

This debate caused "*a fair bit of angst in the Evaluation Group as there were a number of people who wanted to include EasyTeach because of the experience and the long breadth and depth of the experience they had of using the product*" (Martin). The project manager and other members of the Executive Group believed that this strength of belief in EasyTeach was due to the fact that they had used the system for at least five years and had developed a wealth of experience and knowledge in utilising EasyTeach for their teaching and learning practices.

The Executive Group considered keeping EasyTeach and running it parallel to the new enterprise-wide LMS at one stage of the selection process. This decision was due to the large number of users and the amount of experience developed in using EasyTeach over the last five years. However, the Executive Group believed that "*it wasn't worth going down that two system approach for a number of reasons, mainly because the university decided they didn't want to continue with the EasyTeach license for commercial reasons, but just from an internal support issue, having to*

maintain two products, two support systems and so on, is just an enormous extra effort" (Simon). Although a decision to keep EasyTeach would have kept many members of the Faculty of Commerce and Administration happy, it would have created difficulties in terms of providing adequate support through the Division of IT. It was decided by the Executive Group to eliminate the possibility of having EasyTeach as the LMS for the Faculty of Commerce and Administration and another system for the rest of the university. In addition it was noted in the Executive Group that EasyTeach did not meet the Unix/Oracle platform requirement as established in university policy for all systems.

However, this decision did not change the level of support for EasyTeach. EasyTeach was supported strongly throughout the remainder of the selection process. For example, Rose, a member of the Faculty of Commerce and Administration with responsibility for supporting academic staff with teaching and learning claimed that "*the Faculty of Commerce and Administration had been very happy with EasyTeach but there were certain things that they additionally wanted. For example, computer mediated learning, on-line assessment, and all those other features that EasyTeach didn't offer...we could put more money into EasyTeach to get those aspects of it built or possibly integrate it with other systems to provide a total solution. The modified system could have been a very powerful system, but that did not happen.*"

Supporting Rose, Paul, a Lecturer in the Faculty of Commerce and Administration believed that "*we're choosing a new product, as opposed to saying, "here is the LMS we have in place with all the investment in professional development and acceptance by the staff and students." If we're going to replace it* [EasyTeach] *with anything on the list, then it had to be pretty good, it has to clearly be superior to this product, otherwise you wouldn't bother to do it* [replace EasyTeach]. *They didn't do it that way.*" This continued to increase the tension amongst members of the Evaluation Group, particularly between the EasyTeach users and those that did not want EasyTeach as the new enterprise-wide LMS in the University of Australia. As Rose claimed, for the EasyTeach supporters, "*there was enormous frustration about the inability to put EasyTeach on the table as a legitimate contender.*"

Another perspective, offered by Simon, the IT Manager in the Division of Teaching and Learning, "*it was people who were genuinely concerned about the fact that they*

had learnt to use one product and could see that from their own selfish perspective, that moving to another LMS was going to be a step backwards, because for what they wanted to do, wasn't gaining anything to then and it was extra work required to learn how to use it." Martin, the Project Manager, further claimed that "*this was a pretty interesting political scenario, and I suppose if you analyse where it came from, it came from the fact that a lot of people had a lot of vested interest in it. People had a lot of experience with this product, there were a number of these people on the Evaluation Group who were administrators with EasyTeach, maybe I am selling them short, but I think a lot of them basically didn't want to change, they knew the product, they didn't want to move from it.*" Experience of using EasyTeach seemed to have been the key argument from members of the Executive Group as to why the EasyTeach users wanted to keep that system. EasyTeach was a system that had been adopted across the university and was readily used in many locations. The adoption process had been organic and gradual. Academic had adopted that systems by their own choice, They strengthened the support for the maintenance of EasyTeach..

Martin claimed that the experienced EasyTeach users knew how well EasyTeach performed communication functions, and they felt that a new system would not be able to improve on this aspect of teaching and learning. As a result, "*it wasn't just a stubbornness to change, but a belief that EasyTeach did provide something that a new product would not. This, coupled with the fact that EasyTeach was quite fast, was a compelling argument for them*" (Martin).

In terms of the technological background, EasyTeach as a LMS was based on client-server technologies. Rather than operating just through a website, which EasyTeach was able to do, a user installed software onto their local computer and interacted with the main server through the Internet. Many arguments about speed ensued, with EasyTeach advocates claiming that EasyTeach offered students a fast communication method. Opponents of EasyTeach, however, argued that the Web was the way of the future for distance education. Martin believed that "*if you used the client* [in EasyTeach]*, it was quite fast, and there were a number of people in the Evaluation Group who felt that we wanted to try and replicate the aspects of that product. Basically, they weren't so much interested in the teaching and learning facilities it offered, they just thought it was fast and we would never be able to get anything that basically matched the speed, so they wanted to have EasyTeach as the final*

application." The EasyTeach advocates believed that EasyTeach offered more to users in terms of speed because of the client server setup, requiring users to install software onto a local computer in order to access the EasyTeach site. A solution that did not use client server software was going to be a slow solution, as it would require all users to interact with the World Wide Web, therefore slowing down interaction speeds, and causing frustration, depending on the connection speeds. Furthermore, the project implementation team also had a long term view. It was apparent to the project team that over time, the speed advantages offered by the EasyTeach client server software would be comparatively reduced by new technologies (Martin).

The EasyTeach supporters believed that there was 'more to this debate than what they could see'. Paul, from the Faculty of Commerce and Administration stated that, "*we heard the excuses that EasyTeach was flaky and kept falling over and everything because it can't handle numbers. We had 20,000 users on it and had very few problems. We knew there were other reasons.*" EasyTeach had been gaining momentum and use, not only in the Faculty of Commerce and Administration, where every unit was running on EasyTeach, but also in the Faculty of Creative Arts and in some parts of Education and Technology. EasyTeach advocates believed that EasyTeach could handle the user load without failing, or decreasing in speed.

The debate about including EasyTeach as a serious contender continued, with a focus on technical issues. Paul believed that the Division of IT were behind the push to remove EasyTeach from the list of potential LMSs. He believed that the reason "*I'm pretty sure, you may of heard this elsewhere, was that the Division of IT and in particular the Head of the Division of IT didn't accept anything that wasn't Unix based, and this wasn't Unix based, that's one reason, so he wanted to get rid of it.*" As EasyTeach was not running on a Unix platform, it did not fit the corporate policy of the university, requiring all systems to run on Unix and Oracle.

What emerged from this was the belief by EasyTeach supporters that control of information technology platforms was an issue affecting which enterprise-wide LMS was to be selected. Paul believed that "*the Division of IT wanted control over the sorts of technology, they didn't understand the educational aspect and didn't care I don't think. Their concern was to have the Unix-based stuff that they want with all their products. Anything we go outside of that, anything Windows or anything else,*

they didn't want to know, no go, can't have that product you've got to come back here, so to some extent that technology is driving the way people teach or in conflict with the way they are teaching which neither is very healthy." By adhering to university policy, the Division of IT were able to eliminate any products that did not comply or run on Unix and Oracle. EasyTeach advocates believed that this was a poor decision and reminiscent of the debate between the Department of Teaching and Learning Development and the Division of IT in the early 1990's. By accepting only one platform, the Division of IT was limiting potential solutions.

However, there were also rumours that EasyTeach was not considered a serious contender for the enterprise-wide LMS because of some technical difficulties experienced. As Norma, the IT Manager for the Faculty of Commerce and Administration believed, "*the Division of IT had actually set EasyTeach up incorrectly the first time by creating an administrator set up, and then later on the system crashed and needed to be upgraded to a new server. A second administrator was set up, which created conflict because the rights were assigned from the original setup to the new setup and when they went to clean things out at one point, we had a big crash.*" By creating two administrator roles, the system could not handle the various permissions set up, creating conflict in the system and ultimately crashing. Students and academic staff were affected by this crash and were dissatisfied with the poor service provided as the teaching resources they relied on were lost.

The Head of the Division of IT believed that "*there was substantial tension between the Division of IT and the faculties running EasyTeach. The people from EasyTeach were not really investing money in the development of the software and as such it had quite a few very serious bugs and this directly impacted on the quality of the EasyTeach services that was being experienced by the students.*" The technical difficulties, according to the Division of IT, were because not enough money was invested into developing and maintaining EasyTeach. The Division of IT would not offer support because EasyTeach did not fit the corporate policy of running on Oracle, and they were already providing support for the initial enterprise-wide LMS, QuickLearn. As a result, 'bugs' in the system ultimately affected the way the system ran, and this affected the teaching and learning of staff and students, leading to a number of disgruntled students, the ones paying for the teaching and learning.

It was no secret that the Head of the Division of IT stated, "*were very, very happy to move off EasyTeach.*" Although EasyTeach did not fit the corporate line of the university, the Division of IT were required, or expected to support the system, as many staff believed that was the Division of IT's role. However, the Project Manager, Martin, believed that the "*EasyTeach users certainly didn't understand the Division of IT's perspective in terms of what they were willing to support and why they wanted to support it because it's a cost to maintain.*" As there were high costs involved with supporting multiple systems, the Division of IT claimed that they were placed under considerable strain as they could not provide adequate enough resources to provide support for multiple systems. It was therefore believed by the Division of IT that if there was a possibility of removing EasyTeach indefinitely and thus eliminating the need for support, then the Division of IT were happy to support that. As Martin further claimed, "*I don't think people, including the EasyTeach users, necessary knew all the ins and outs of some of those issues.*"

The EasyTeach group was not succeeding in getting support via the technical issues arguments, by the long-time use argument, and by the growing number of users' argument, so they attempted to debate the educational aspects of EasyTeach. This debate focused on an argument about pedagogy. As Rose, from the Faculty of Commerce and Administration believed, "*a lot of people saw the essence for teaching and learning as communication and alongside that we also see that you've got to have computer mediated learning, and you've got to have interactive activity and all those sorts of things which are all the bells and whistles, but fundamentally, it's about communication.*" There was little disagreement that EasyTeach provided excellent communication. Essentially, the new LMS would be about pedagogy, which was the last hope for EasyTeach supporters to continue to push for their adopted LMS.

Users of EducateMe Advanced Edition, in the Faculty of Technology, believed that the new LMS should "*revolve around a technology delivery of databases*" (John). Members of the Faculty of Technology believed that the new system should be set up around the delivery of database information. However, members from other faculties were not as interested in a technological solution as the Faculty of Technology and were not willing to operate a database-driven system.

A third group of uncommitted users of technology in teaching and learning believed that the system should incorporate aspects of communication and databases but should not rely solely on those technologies. Essentially, the new enterprise-wide LMS should "*revolve around teaching and the delivery of teaching*" (John). The Chair of the Executive Group, Helen, believed that "*there was an educational debate going on about communication versus technology versus teaching itself or pedagogy, a word that everybody uses and there was no-one winning the debate at all.*"

This debate created extra tension in the Evaluation Group and Paul claimed that "*those meetings were really tense because the EasyTeach advocates were never listened to. In fact, one staff member said that they just felt so sick going to those meetings she couldn't come, because no one's listening, it was too tense.*" The EasyTeach supporters would not accept any argument against EasyTeach as being the chosen system for the University of Australia, even though they were not winning any of the debates or arguments, believing that they were not being listened to.

It was not until a significant piece of information regarding EasyTeach was revealed that the decision was made to totally eliminate EasyTeach from contention. Martin, the Project Manager, claimed that, "*we got our finance division to do an evaluation of the financial viability of the company which owned EasyTeach. It quickly became clear that the company had major financial problems. It turned out that the company had a major cash flow problem and the Head of Finance in the University of Australia said "we are not going with this company, full stop, I'm not going to support buying this product, or proceeding with it any further." So the Evaluation Group were given an ultimatum by the finance department basically which said take this off your short list... that solved a big issue for us.*" Upon further clarification from other members interviewed, the finance group were seen by the members interviewed, to evaluate the three companies, EasyTeach, ChalkOnline and EducateMe International, independently of the Executive and Evaluation Group. The finance group were not aware of the politicking occurring in the selection process, and were asked to perform a financial evaluation and report back to the Executive and Evaluation Groups. Essentially, there was legitimacy behind the financial evaluation and no system was going to be accepted had it failed the evaluation. This

could potentially mean that EducateMe International and ChalkOnline could have been eliminated, had it failed the financial evaluation.

Lara, the Online Learning Manager in the Faculty of Creative Arts, agreed with this reasoning, believing that *'EasyTeach was out of the running because somebody from the financial area had examined the business plan of EasyTeach (company) and decided that they weren't good at responding to the University of Australia's needs and didn't provide adequate support and that was probably true and that they were aiming for a market for a more commercial market rather than an education market and as such that would constitute a risk for the University of Australia to be going for a product that may not continue to be responsive to our educational needs.*"

EasyTeach was ultimately eliminated from selection contention due to perceived financial difficulties identified by the financial group within the university. In conjunction with concerns about poor cash flow, EasyTeach was recognised as not being able to provide adequate support for the higher education market. It was believed that EasyTeach was going to follow the direction of QuickLearn and move into the corporate training market, which would have left the University of Australia with a system that would not be supported by the vendor. The University of Australia had already been down that path with QuickLearn and did not want to be in that position again. Therefore the decision was made by the Executive Group to eliminate EasyTeach as a contender for the new enterprise-wide LMS.

The Head of School of Information Management, John, claimed that the announcement that EasyTeach was not financially viable and potentially moving out of the higher education market, and ultimately eliminated from contention was made to the Evaluation Group. This in turn *"caused a lot of consternation. In fact* [one member] *burst into tears in the meeting… it meant that was the end of EasyTeach, it wasn't even going to get down to the last two and it was a difficult decision but it came about essentially because of that meeting"* (John). There was very little that the EasyTeach advocates could do now, as ultimately, they *"couldn't come back on the financial thing"* (Paul). The announcement to drop EasyTeach was emotional and heart-breaking as many advocates had spent a lot of time training and gaining the knowledge and experience to effectively run EasyTeach. There was also very little the EasyTeach advocates could do in terms of the financial announcement because

they did not have access to the same information that the finance group did. Only the report was available to members of the Executive and Evaluation Group.

However, even staunch supporters of EasyTeach, such as Rose from the Faculty of Commerce and Administration, believed that by removing EasyTeach from contention, there was a possibility that a better system could be found. She claimed that "*there was a recognition that you had to go a few steps backwards to go a few steps forward. People were very optimistic that there would be benefits, longer term however.*" The decision to eliminate EasyTeach from contention ultimately left the Executive Group and the Evaluation Group with "*two potential LMSs, ChalkOnline and EducateMe International*" (Martin).

5.5 Selecting the enterprise-wide learning management system

Having started with a list of requirements and 64 potential LMSs, the Evaluation Group had reduced the list of potential systems to two. The Chair of the Executive Group and Evaluation Group, Helen, organised for both companies to come to the university and give presentations on their products to members of the Evaluation Group.

The Project Manager retells his perspective of the two presentations. "*ChalkOnline came in and did some very good demonstrations, I think that the picture you got from the demonstrations was that this product was very well developed in terms of it's user interface, very simple to use but was probably a little inflexible in the way that it could be used by teaching staff and probably didn't have all the bells and whistles that we'd like to see in terms of our requirements.*" Those that saw the ChalkOnline demonstration were impressed because it seemed to be an easy system to use. It appeared to members of the Executive and Evaluation Group that ChalkOnline would require very little training as it had a good user interface, where staff could update their area, and students could interact and access the necessary resources for the unit.

EducateMe International, on the other hand, performed, what the Project Manager believed as "*the most dismal demonstration that I have ever seen in my life.*" The reasoning behind this description was due to the fact that EducateMe International

was still a new product, essentially being "*in alpha state and not a beta version*" (Simon). The product was green and this came across in the presentation, as the Australian representative for EducateMe International "*ended up using his mobile to talk to one of the people in the States while he was actually trying to set up the demonstration. He started the demonstration up, and things started falling over*" (Martin). As the product was still in its early days, there were still many bugs in the system and this affected the way members of the Executive Group and the Evaluation Group perceived the reliability and usefulness of EducateMe International. This led a negative perception, and many of the members were surprised that EducateMe International made it to the final short list of two potential systems.

As EducateMe International fitted the criteria earlier, they were still in contention. As a result, EducateMe International were determined to fix its mistakes and get the contract. To do this, they sacked the representative that gave the demonstration. This indicated to the Executive Group and the Evaluation Group "*how serious EducateMe were about actually trying to get our business because they were so upset by the way things had happened that they were willing to actually sack their Australian rep*" (Martin). By sacking their Australian representative EducateMe International demonstrated that they were willing to do anything and everything to work with the University of Australia, ensuring that the University of Australia would receive the best support and service.

EducateMe International was given a second chance to improve their presentation. There was considerable discussion about the presentations at both the Executive and Evaluation Group meetings. It was decided that there had to be a choice in the evaluation process and since there two LMS systems on paper, were the only two that came anywhere near meeting the university's list of requirements, it was considered important to bring them back again. As the Project Manager recalls, "*so we went back to EducateMe and said look this thing was an absolute cock-up, if we are going to keep you on the shortlist you've got to basically do something to prove it. They got somebody else on board, and then they, you know, pulled out all the stops to try and negotiate with us to help us see that yes EducateMe International did have a product, it was, well in the running. The second demonstration indicated that the product looked a whole lot more flexible than ChalkOnline's product from a*

teaching and learning perspective." Through this second opportunity, EducateMe International was able to indicate that they had a competitive product that not only rivalled ChalkOnline, but had greater flexibility in the ability to provide a variety of resources such as audio-streaming, e-whiteboards and the ability to upgrade features to enhance teaching and learning. Although ChalkOnline may have been easier to use, it was perceived to be limited in what users could and could not do. EducateMe International, on the other hand, was perceived to be able to provide more flexibility to further enhance and improve the richness of teaching and learning.

Despite the issue of flexibility, EasyTeach advocates continually criticised both EducateMe International and ChalkOnline in terms of speed. These members were comparing EasyTeach, which runs on client server software therefore requiring less intensive interaction via the Internet, with EducateMe International and ChalkOnline, both of which run via the Internet. The IT Manager for the Division of Teaching and Learning made it clear that the Executive Group and Evaluation Group knew that any web-based system would be slower than a client-server based system. As Simon said, "*speed was part of our evaluation criteria and ultimately, we recognised that the advantages of going with a purely web-based product far outweigh the disadvantage of speed.*" It was believed by members of the Executive and Evaluation Group that by being a web-based system, staff and students can access the system from anywhere around the world, provided they have a connection to the Internet. This would supposedly make accessing the system easier as staff and students were not required to install software, which they would have to do with EasyTeach.

Many of the EasyTeach supported believed that having a slow system can turn a lot of current and potential students away from the University of Australia. Arguments for a client-based LMS included the ability to keep distance education students in close connection with other students as well as on-campus students, effectively reducing the gap between the two cohorts. EasyTeach supporters on the Evaluation Group believed this would not happen with EducateMe International or ChalkOnline. Typical of the criticism of the new system in the evaluation stage was this comment from Paul, from the Faculty of Commerce and Administration mentioned, "*the web based system is just slow and clunky, not very nice to use. So students don't feel like using it. They think if I go in there I'm going to spend another bloody half an hour in there at home and I haven't got time for that.*" As a result, "*in terms of our strategic*

priority of being a world class distance educator, I think the technology can actually destroy that, but nobody listens." However, there were implications of having a web-based system from the user perspective. A fast connection to the Internet and World Wide Web would be necessary for accessing some of the content in the enterprise-wide LMS. Not all users have access to broadband, limiting their accessibility of online content.

When comparing the two systems, ChalkOnline and EducateMe International, members of the Evaluation Group recognised that EducateMe International had advantages over ChalkOnline, particularly in regards to product flexibility. EducateMe International was seen as being easier to modify in terms of the way the front-end design could be modified to incorporate the latest technologies, such as video- and audio- streaming and flash animation. The back-end hardware of EducateMe International was also easier to adjust if need be. For example, an increase in student numbers would require another server for an increased load. This could be implemented easily, requiring little downtime or numerous software patches. For students the flexibility of EducateMe International would not make a great deal of difference but for people on the development side, such as building courses, EducateMe International was significantly easier and more flexible to modify. As Diane, the Head of the Teaching and Learning Support Group, said, "*It was the flexibility for the academics being able to teach using EducateMe International which was the sort of overriding deciding factor.*" The IT Manager, also from the Division of Teaching and Learning, supported Diane's comments, "*EducateMe International was chosen because of its pedagogical flexibility. The fact that EducateMe International allowed me to do much more flexible things with the product than some of the other systems was a major advantage. The Evaluation Group almost unanimously decided that ChalkOnline was far less flexible. It may have been much easier to use because it was less flexible, but people went for pedagogical flexibility rather than easy use.*"

The members of the Evaluation Group felt that EducateMe International gave teaching staff a greater set of tools and options, which they could use to enhance their teaching abilities. ChalkOnline, although it gave staff tools such as a gradebook to monitor student progress throughout the semester, the ability to incorporate flash animations and video- and audio-streaming, to enhance their teaching, did not offer

as much as EducateMe International in terms of future additions or modifications to the product. As a result, the Evaluation Group believed that EducateMe International would be the better product to implement as the enterprise-wide LMS.

However, with greater flexibility comes greater difficulty in actually learning how to use the product to enhance teaching and learning. Diane recalls the predicament that the Evaluation Group were in. She said, *'the biggest negative of the decision to select EducateMe International is that it is much harder to learn, so we knew we were in for a much bigger training staff development support load by selecting EducateMe International, but it was decided that it was worth it.*" Should the Evaluation Group select a system that is recognised in the selection phase that is difficult to learn, but offers greater flexibility? Or should the group select a system that has less flexibility, but is ultimately easier to use? By selecting a system that is more difficult to learn how to use, the Division of Teaching and Learning recognised that greater support and training staff would have to be supplied,

After the conclusion of approximately 50 meetings the members of the Evaluation Group met to make their recommendation based on the requirements analysis, the testing of both products within the university, the financial analysis and the opinions of other academic staff they had consulted with. There was significant support for EducateMe International but the members of the group were not entirely convinced. It took a very persuasive argument by the Faculty of Technology representative Samantha, a passionate advocate of EducateMe International, to move the group. Samantha was a senior lecturer in the Faculty of Technology, a faculty that had already used EducateMe International. She advocated that of the two systems under consideration only EducateMe International offered the university the flexibility it needed for the LMS to be adopted in the various distinct ways each faculty wanted. She discussed each of the requirements noting how similar the systems were in many ways. However she advocated that what the university community wanted was the ability to deal with differences in style and approach to teaching. She argued that only the flexibility in EducateMe International offered that.

The final meeting was filled with both exasperation about the exclusion of EasyTeach and acceptance by those same people about accepting EducateMe International. It was only the consistency of the argument by Samantha that forced a

final deliberation. Only one member of the group remained an advocate of ChalkOnline. The finality of the decision was accepted. For example, Rose noted that, *"there was pretty overwhelming support for EducateMe International."* EducateMe International met the technological requirements of running on an Oracle system, and the majority of members on the Evaluation Group believed that EducateMe International provided a greater flexibility for enhancing teaching and learning for both staff and students. Although the company initially gave a poor presentation, members of the Executive Group *"did a lot of talking to existing customers and found out that they had a pretty good interaction with the company and they were very happy with their maintenance and support, so we started to get a much better feel for how the company would operate with us"* (Martin). By talking to other users of EducateMe International, the Executive Group got a better idea of how EducateMe International actually interacts with their customers. The outcome of this selection process was to recommend EducateMe International to the Senior Executive of the university as the best solution according to the Executive and Evaluation Groups.

Once the decision was made to recommend EducateMe International, some members from the Faculty of Creative Arts, Commerce and Administration, Medical and Health Sciences, and Education believed that the Faculty of Technology were being favoured, as they were already using a version of EducateMe, whereas the other faculties would have to learn from the beginning on how to use EducateMe International. However the proposed new enterprise-wide LMS, EducateMe International, was different to the EducateMe version being used by the Faculty of Technology (EducateMe Standard Edition). Martin, the Project Manager, explains, *"there was a fairly major group already using a EducateMe product internally, but we weren't looking at campus edition, we were looking at a completely new product that EducateMe had been developing which was an enterprise teaching and learning product, which had been completely redesigned and re-architected from the ground up."* So although some members of the University had been using EducateMe, it was the EducateMe Standard Edition, which was then upgraded to the EducateMe Advanced Edition. There were differences between the two products (Advanced Edition and International), meaning that training was required for someone who has used EducateMe Standard or Advanced Edition, to switch over to EducateMe International. Effectively, those who had been using EducateMe Standard or

Advanced Edition, still had the same amount to learn as someone who used QuickLearn, EasyTeach or individually developed LMSs, thereby placing all staff and students on in equal position in terms of training and previous system knowledge (Simon).

After a lengthy process, with a lot of discussion and arguments, the Evaluation Group had reached its decision that would then be passed onto the Executive Group and the University Council. The Chair of the Evaluation Group and the Executive Group, Helen, recalls when the decision was made, "*the Evaluation Group were unanimous in their choice, even students. I remember students saying, well, it might take longer to get to know how to use it, but it will be better in the end...it was unanimous and they* [the Group] *wanted the decision NOW. So that was an absolute turnaround from the first meeting, with, "Helen, you are dead meat, we hate your guts because you are doing this to us," to, "come on, we've got this recommendation, can we get on with it please?" There were tears, people were so relieved at the process, and it was an extraordinarily emotional thing.*"

The main difference between the two systems was that EducateMe International was perceived to have had greater product flexibility in terms of modifying the system to incorporate new hardware and software to assist the delivery of teaching and learning materials than ChalkOnline. This difference ultimately gave EducateMe International the approval as being the system to recommend to the Senior Executive.

The Evaluation Group had made its recommendation to the Executive Group and now it was time for the Executive Group to put the recommendation to the Senior Executive of the university. This recommendation had been through an arduous journey that took approximately one year to come to the conclusion that EducateMe International was the best product based on the list of criteria and list of functionality established by the Evaluation Group and the wider university community. As the Chair of the Executive Group and the Evaluation Group, Helen, recapped, "*it took a long time, but it was worth the process because this is the corporate system of the university. Despite the process, we'll still have people who whinge, but we couldn't really have gotten to where we are without having had significant political justification. It was a "so many of your colleagues have recommended this" sort of thing. So it had legitimacy at the faculty level.*" Although it had been through a year

long and intense process, the decision was viewed as legitimate, because there was so much involvement from the various schools, faculties and various divisions.

All that was left for the Executive Group to do was now provide the recommendation to Senior Executive. The Head of School of Information Management, John, recalls that the meeting with the Senior Executive *"was actually a very calm meeting if I remember rightly and people just accepted that was the decision. It was accepted by the Vice-Chancellor and the go-ahead was given."* Because the support was provided by the wider university community, members of the Senior Executive were happy with the recommendation.

The Project Manager, provided more detail as to what was included in the recommendation made to the Senior Executive, *"We actually put the recommendation up to the Executive April 2002 and the recommendation said, EducateMe International has the functional requirements that we need or will have in certain time frames they'd given us certain guarantees, in fact part of our contract negotiation was that they had to provide certain functionality within certain periods of time, or penalties would be incurred."* Although EducateMe International was practically brand new on the market, the Executive Group wanted the University of Australia to take the risk and implement this new product. The justification given to the Senior Executive was that the software is cutting edge, and with promises set up in the negotiation stage, EducateMe International would deliver the "viable teaching and learning system." There was also the added advantage that EducateMe International was more flexible in terms of delivering content than any of its competitors. As a result, EducateMe met more functional requirements than its competitors and was the "must-have" system.

One other potential difficulty encountered with the recommendation related to budgetary restrictions. As the Project Manager explains, *"when we put the recommendation up to the Senior Executive, we put together a complete budget, a five-year plan to implement EducateMe International. Twelve and a half million dollars over five years for initial implementation including support and maintenance of the product, faculty staff input to development of unit teaching online. The response we got from Executive was that you can't have that much but you've got to implement it anyway, literally."* In order to implement EducateMe International, a

significant budget was required. The bulk of the $12.5 million was recognition of the faculty requirements to train and support staff in the new environment. As Martin claims, "*when the Senior Executive ignored this request, they effectively marginalised the capability of the project implementation team to manage the faculty-related issues well. A lot of work was subsequently put into providing "work-arounds" to resolve these issues.*" The Head of the Division of IT claimed that "*the University of Australia typically recognised that for the implementation of the EducateMe International system to be successful, adequate planning and resources would need to be budgeted for.*" Not only does the system need to be purchased, there were also issues of training and further support to ensure that EducateMe International would be a successful LMS.

The Senior Executive gave the Executive Group "*two-thirds of the budget that we needed to do the initial implementation and they said that we want you to take all of the faculty costs out of the equation completely, so forget about your five year plan, and forget about all of the costs of faculty staff. All we want to know about is what it's going to cost you to actually implement this product quote unquote*" (Diane). As a result, some of the money was provided, the rest had to be borrowed from various areas of the university budget. As the full 12.5 million dollars could not be granted by the Senior Executive, staff in the Division of Teaching and Learning noted that inadequate training and implementation would probably occur, which was frustrating to members of the Executive and Evaluation Groups, because so much time and effort had gone into doing an exhaustive analysis of what the university required, what was commercially available and what was deemed to be the best system. Rather than holding off the decision and exploring the market for potential new systems that were more affordable, the Executive Group attempted to get the extra money by using money from other areas of their sections, particularly the Division of Teaching and Learning. With that the project was moved into the implementation phase.

In this chapter, the focus has been very much on a requirements elicitation and evaluation process, followed by a selection process based on the set requirements. The whole of the university issues and appointment processes, so obvious in the previous chapter were not as obvious. However there is clear evidence that what was going on backstage was certainly extant.

5.6 Analysis

The social dramas (Chapter 3.6) that emerged in this second phase of the systems selection and implementation of the enterprise-wide LMS at the University of Australia included the formation of the Executive Group; the establishment of the Evaluation Group; the elicitation of requirements from users, including academic staff and students; making the decision and putting forward that recommendation to the Senior Executive.

In the first social drama, tension initially emerged about the composition of the Executive Group. The Deputy Vice-Chancellor gave the Head of the Division of Teaching and Learning responsibility to establish the Executive Group and, in consultation with her, its composition. The Head of the Division of Teaching and Learning was aware that the previous process was flawed, that there was a significant difference of opinion about LMSs within the university and that both pedagogical and technical issues had to be addressed. She was also aware that vested interest existed in various stakeholders groups within the university and their influence was deeply set within the teaching and learning practices of the university. Each stakeholder group expected representation but that would have created a huge committee. The Head of the Division of Teaching and Learning decided that the Executive Group would be kept small and that to enable representation a larger Evaluation Group would be established. The more vocal academic staff members involved in the use of technologies for teaching and learning believed that the Head of the Division of Teaching and Learning was trying to refocus teaching and learning development within the Division of Teaching and Learning out of the faculties. Their response was to act out their disapproval in faculty boards and at school meetings. They also argued for their case to be taken up by each of the relevant Deans. This did not have any impact as the Deans reported to and were appraised by the Deputy Vice-Chancellor and they were expected to follow university policy.

Similarly, the second social drama emerged over the composition of the Evaluation Group. It was openly argued that all stakeholder groups be represented. Subsequently, staff that had a vested interest in LMSs were appointed to this group, together with students. Once established it became obvious that this drama merged with other tensions over the criteria for selection of the LMS, and over the continually argued existing strength of EasyTeach. There was contestation amongst

members of the Evaluation Group about which system should be selected. There was also continual debate over the importance of each requirement that was listed as important and especially debate over the technology parameters that had to be met. The obvious extent of concerns about various LMSs emerged during these meetings when participation in testing occurred, following presentations by vendors.

The most serious social drama in this phase of the selection process emerged when the Evaluation Group had to recommend a decision. Initially, tension focused on whether EasyTeach should be considered a serious contender as the enterprise-wide LMS at the University of Australia. The EasyTeach advocates were initially confused as to why the University of Australia was looking for a new LMS, as they believed that EasyTeach was the obvious choice, based on their criteria. However, the requirements process had produced a more comprehensive list that included criteria that EasyTeach was not able to meet. The apparent narrow focus in EasyTeach on communications was the source of the tension that emerged and which was challenged by the list of requirements that emerged from the university-wide elicitation process. As a result, the various groups of stakeholders and technology-user factions contested each others sets of requirements. Ultimately, when EducateMe International was recommended by the Evaluation Group, it was selected on the comprehensive list of requirements, including pedagogy, technology and financial, that had been evaluated by all groups and tested on each alternative LMSs.

Three sets of criteria were contested publicly in this process, pedagogy, for which there was never going to be a consensus as different stakeholder groups had differing opinions; technology, about which there was a deep, long-held dispute already reported in Chapter Four, concerning IT support for a specific university-wide infrastructure based on Oracle. This too was never going to be resolved as the argument was long held and unresolved; and the financial viability of the companies providing the software. It was the last criteria that forced the supporters of EasyTeach to accept that it was not a viable alternative. It was the sustained advocacy of one member of the Evaluation Group that persuaded the decision to recommend EducateMe International. However, these obvious deliberations were being informed by political processes and the wielding of power that was set within more substantial discourse.

The discourse of discipline appeared to be still underpinning the decisions taken in the creation and composition of the Executive Group and the Evaluation Group. By incorporating advocates of other LMSs, the Deputy Vice-Chancellor and the Head of the Division of Teaching and Learning wanted to coerce the advocates of other systems into the new enterprise-wide LMS. Politically, it was important that the university objectives of centralisation and uniformity were achieved. The discourse of centralised rather than differentiated control was now foremost in the actions of the Senior Executive of the university and senior managers. The discourse of differentiation and diversity, so much a part of the early university, was being replaced by a discourse of integration and sameness. This was most probably a response to the policies of the Federal Government who were demanding compliance with new directions in Australian Higher Education, based on a discourse of free market competition and graduate outcomes directed to economic rather than social goals (Lingard, 1991, 1993; Lingard, et al., 1993; Corbitt, 1995; Angus, 1984, 1988). The State was attempting to coerce universities to 'toe a corporate line' and meet the demands of business, challenging the traditional discourse of universities of intellectual freedom and the betterment of society (Davis, 2004).

Although the advocates of other LMSs were members of the Evaluation Group, there was still an element of confusion and disintegration amongst academic staff. There was no clear statement from the Senior Executive about what type of university the University of Australia is. Staff were still confused as to whether the University of Australia was an on-campus university, providing some units to off-campus students, or whether the university was still targeting off-campus students as its prime market. There was still a focus politically on the academic emancipation. Academics sought emancipation from the directed policies of both the university Senior Executive and the heavily criticised policies of the Federal Government, where there was a discourse of sameness and uniformity, enforced by compliance requirements through reporting to the Department of Education, Science and Training.

The Senior Executive was attempting to modify and limit academic emancipation by centralising processes and systems inside the university. The academic staff were still working individually; still working to their individual agendas and not towards the strategic goals of the university. Essentially, it could be argued that the Senior Executive wanted to coerce staff politically to comply with the requirements of

government policy as the government had attached disciplinary penalties to non-compliance. However, the Senior Executive did not directly drive this. They were required to adhere to government requirements, which had flow on effects for the academic and general staff within the University of Australia. It is through these flow-on effects that academic staff end up with less power than general staff and the Senior Executive. The academic staff were required to adhere to requests by members of the divisions operating within the university.

However, most academic staff objected to being forced into one central system. This was brought into the front stage in this process through the resistance offered by the EasyTeach advocates who resisted any attempt to lose the LMS they were already using. Compliance with requirements to have one system only, they believed, eliminated their academic emancipation. The discourse of standardisation driving the actions of the Senior Executive was perceived by the academic staff to be disempowering of their responsibilities as academics. Thus they contested this with a discourse of academic emancipation and differentiated choice, expressed openly as debate about pedagogy, about technological compliance and about what LMS best suited their individual and faculty needs. Politically, there were two distinct discourses in operations within the university during this time. The bases of the contest were fundamental to both sides in the debate and thus the debates in meetings and forums of the university were intense and emotional. There was an essential contest of the driving ideology of the university and about what had served the university well to this stage in its history.

These challenges were ultimately overturned, as the Senior Executive strongly believed that academic staff needed to be using one central system. The Deputy Vice-Chancellor continued the drive to achieve standardisation in teaching and learning across the university. The Senior Executive wanted to create an environment of all staff, academic and general, working together towards the same goal, pushing the requirement for academic staff to comply with the newly selected enterprise-wide LMS and create uniformity and ultimately control over the academic staff. Thus, at the point of implementation of an enterprise-wide LMS, the discourses contested in the open forums of the university were to have a significant impact. It is to this final part of the story that we now turn.

Chapter Six – A Story of Systems Implementation – Part 3 – Implementing the enterprise-wide learning management system

6.1 Introduction

The previous two chapters have described the process leading to the decision to recommend EducateMe International as the enterprise-wide LMS at the University of Australia. This chapter provides the story of the implementation of that new enterprise-wide LMS. Following acceptance of the recommendation from the Executive Group by the Senior Executive, a plan was developed to purchase the software and begin an initial pilot implementation of the LMS.

6.2 Key Events Impacting the Implementation of EducateMe International

During this phase of the implementation of EducateMe International, a number of key events occurred. The process started with the implementation of EducateMe International in November 2002. Four significant changes to staff in the Senior Executive occurred in early 2003. The Vice-Chancellor retired after being involved with the University of Australia for seven years and a new Vice-Chancellor was appointed, to begin in January 2003. In February 2003, the Deputy Vice-Chancellor resigned. John, who was on the Executive Group and the Evaluation Group and the Head of School of Information Management, was promoted to the position of Pro Vice-Chancellor (Distance Education) in February 2003. A review of Academic Board occurred in March 2003. The online teaching and learning policy was developed and implemented in May 2003. A new Deputy Vice-Chancellor was appointed in June 2003.

The resignation of the Vice-Chancellor, appointment of the new Vice-Chancellor, appointment of the Pro Vice-Chancellor (Distance Education), the resignation of the then Deputy-Vice Chancellor and appointment of a new Deputy Vice-Chancellor changed the role of faculties and divisions. These changes, signalled to some members of the University of Australia that there was a change in role and direction of the university. For example, Paul believed that *"the new Vice-Chancellor believes strongly in the role of the Academic Board, as it is the academic who should be*

making the decisions. The Division of Teaching and Learning and the Division of IT would have been told what to do… the Vice-Chancellor noticed straight away that it was the administrative units and divisions ignoring the faculties and calling the shots for the faculties."

Due to the complexities involved in telling this story in a chronological order, there are moments of repetition. These have been provided to keep as close to the implementation timeline as possible

6.3 Incorporating Online Services into the University Structure

Once the decision to implement EducateMe International was made by the Senior Executive in 2002, the Executive Group were ready to bring the Evaluation Group to an end, replacing this group with an Implementation Group. The Executive Group believed that they needed to remove the Evaluation Group and establish a new group to oversee the implementation of EducateMe International. The reasoning was about both the intensity of the work done by the previous Evaluation Group and the need to reinvigorate the process with additional new faces replacing some former members of the Evaluation Group. As the IT Manager in the Division of Teaching and Learning claimed, "*we wound up the Evaluation Group saying, 'thanks very much you've done a fantastic job, now we appreciate that you've spent a year doing this, we'll let you off the hook now and we'll go out and get another bunch of people to work on the implementation'.*"

The Evaluation Group members wanted to continue their involvement in the implementation of EducateMe International, because so much of their time had been devoted to evaluating and recommending the potentially best system (Chapter 5). They wanted to see this project finalised. As Simon continued, "*the Evaluation Group was unanimous in saying 'no, no, no we've got this far, we're demanding to continue in the involvement in the implementation' and so even the people who were sort of anti during some of this thing had decided that it was actually worth continuing with and persisting into that implementation phase. We effectively had buy-in by having a consultative process during the evaluation.*" Members of the Executive Group were pleased with this enthusiasm shared by the Evaluation Group and believed that user buy-in would increase due to these members wanting to be

involved right through to the end. The Evaluation Group now became the Implementation Group and members would effectively be the ones promoting the use of EducateMe International and encourage other members of their respective division and faculty to use EducateMe International for their teaching and learning.

Before the position of Pro Vice-Chancellor (Distance Education) was created, the Head of School of Information Management created an online services structure, as seen in Figure 6.1, incorporating the Evaluation/Implementation Group and the Executive Group.
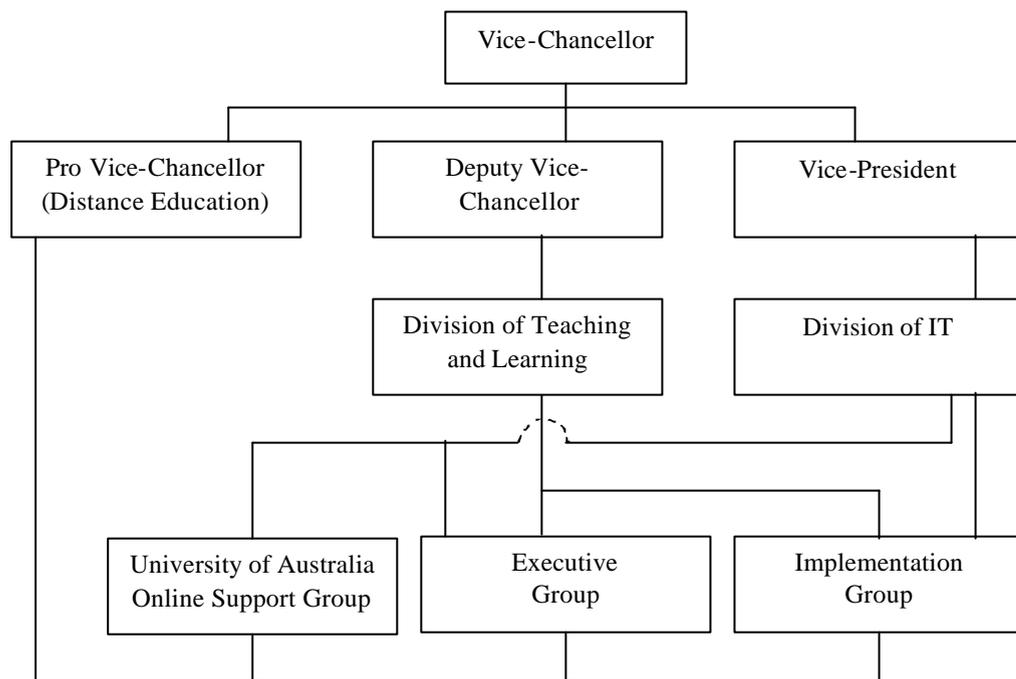

Figure 6.1: The structure of the office of the Pro Vice-Chancellor (Distance Education), the Deputy Vice-Chancellor and the Vice-President.

In this structure, the Pro Vice-Chancellor (Distance Education) would report to the Vice-Chancellor, similar to the Deputy Vice-Chancellor and the Vice-President. The online services structure contained three groups:

- The University of Australia Online Support Group, which managed the LMS, the university portal and the student record information system, and reviews the implementation of any University of Australia online project, suggest changes and innovation to existing University of Australia online projects, provide feedback on University of Australia online projects from a teaching and learning perspective, and report on the impact of University of Australia online projects in faculties and divisions.

- Executive Group, which leads planning, such as goal and strategy setting of EducateMe International, draft proposed policy to support EducateMe International for the Senior Executive, identify issues that need to be raised within the university context to meet the goals of EducateMe International and monitor university-wide planning and implementation of the adoption of online technologies.

- Implementation Group, which replaced the Evaluation Group and planned the implementation of EducateMe International, monitoring and evaluating the implementation of EducateMe International, identify problems with the integration of EducateMe International with other university systems, and propose policy to support EducateMe International to Senior Executive.

The Division of Teaching and Learning linked in and provided support for issues relating to the Executive and Implementation Group, and the Division of IT linked in and supported all three online services groups.

Once the structure of the online services in the University of Australia was decided, the Executive Group created a timeline for the implementation of EducateMe International. Implementation would begin in July 2002 with existing QuickLearn Units only being transferred to EducateMe International and then all other units offered across the university would be phased-in having an online presence on EducateMe International by January 2005. As the Head of the Division of IT claimed, *"our approach was to slowly ramp up the use of EducateMe International and set out to acquire the skills required at the same time through the piloting of EducateMe International for selected units. The idea was to isolate and identify operational and performance issues, if any, so that they could be worked on and addressed. It is easier to have issues with a smaller number of units than to contend with all the units in a given semester."* This approach also enabled some staff to move across without being forced onto the one system straight away. With such a large number of units offered each semester, it was considered by members of the Senior Executive that it would be commercial suicide if the University of Australia decided to switch off all existing LMSs and turn on EducateMe International. As a result, a phase-in and parallel implementation process was adopted, in order to minimise the impact of 'bugs', fixing up those problems before releasing all units online, where there is much more at risk.

It was believed by some members of the university's academic staff that the University of Australia was going to shut off the old system and turn on the new one. There was confusion between members of the Executive and Implementation Groups and the wider university community. Some members of the university community believed that the University of Australia was going to adopt a poor implementation methodology by putting all users onto the new system in one go. This turned out to be not the case. This confusion was explained by John, the Pro Vice-Chancellor (Distance Education) who claimed that *"there were perpetrators around the university who spun the story that we were going to introduce EducateMe International full stop, and that this was wrong project management and that we were doing everything wrong. I sent emails through to these staff members where I said, 'no, we're not doing that, we are running a pilot study of EducateMe International in first and second semester and the summer semester of 2003,' and that's what we did."*

Those members of the university that were spreading rumours about a poor implementation process also highlighted that EducateMe International was originally developed and typically used by American universities for the delivery of online tutorials. EducateMe International was developed for smaller class sizes of thirty to forty students. The University of Australia had class sizes that ranged from thirty students to 1,400 students. The Head of the Teaching and Learning Support Group believed that, *"the way that we're using EducateMe International is not what it was designed to do, they designed it for an American market and the first thing we did was say we want to have 35,000 users in a section."* This was a new product being tested outside of its typical class size. The potential for something going wrong was there.

Ultimately, the push to implement the pilot of EducateMe International now came from the Senior Executive rather than the Executive Committee that recommended EducateMe International, regardless of what members of the university were saying. Members of the Division of IT and the Division of Teaching and Learning expected that people would not be happy being forced to use this new system. As the Head of the Division of IT claimed, *"I adopt a simplistic view of the world where I believe you cannot please everyone all the time and so you've got to do the best with what*

you have got. Set up a process and run it as best you can and consider it a success if you are able to satisfy a majority need of the university."

Forcing users to use EducateMe International was going to be an issue from the Division of IT and the Division of Teaching and Learning point-of-view, primarily because it required a re-evaluation of their current teaching practices, and a re-conceptualisation of how an enterprise-wide LMS would affect and enhance their teaching. It was recognised immediately that pleasing everyone would not be possible and that the implementation team should aim to support and work with the majority of the wider university community. This was exemplified by the quote from Helen, the Head of the Division of Teaching and Learning, who believed that '*most academic staff are appointed because of their research skills...they've not done any teaching, so we throw them in front of a class and we expect them to teach. In conjunction with this, academics need to reconceptualise how to use a tool such as a LMS, to change their pedagogical approach, to think of engaging the learner in totally different ways.*"

Although there would still be people resisting the adoption of the new system, the University of Australia Online Support Group, the Division of Teaching and Learning and the Division of IT believed that there was a need to implement EducateMe International in order to start migrating users across from existing LMS, and create exemplar units to spread and promote the use of EducateMe International across the university.

6.4 Installing EducateMe International
Ten teams were established to start implementing EducateMe International and transferring units across from the existing LMSs to EducateMe International (Figure 6.2). These teams were established to manage one specific area of the implementation process and reported operationally to the Head of the Division of Teaching and Learning. These teams were: application builders, who were responsible for the interfaces of the EducateMe International and how users would interact with the LMS; technical builders, who were responsible for setting up the hardware platforms and making sure they could support and run the EducateMe International software and the expected user load; the academic teaching and learning planning stream, who were responsible for policies relating to EducateMe

International (such as the online presence policy outlined earlier), and change management issues; unit migration and development, who were responsible for getting users out of their old system, into the new; administration access, who were responsible for making sure people were authorised to use the system and what sort of privileges those users were allowed to have; implementation planning, which were primarily the project managers; training development, who were responsible for training users, making sure they would be able to use the system, at least in its basic form; support planning, who were responsible for issues of support to the staff and students at the University of Australia; communication strategy and delivery, who were responsible for conveying messages and important information relating to EducateMe International; and vendor/contract management, who were responsible for communications and negotiations between the University of Australia and the company, EducateMe International. The relationship between the Head of the Division of Teaching and Learning, the Pro Vice-Chancellor (Distance Education) and the created teams is shown in Figure 6.2.
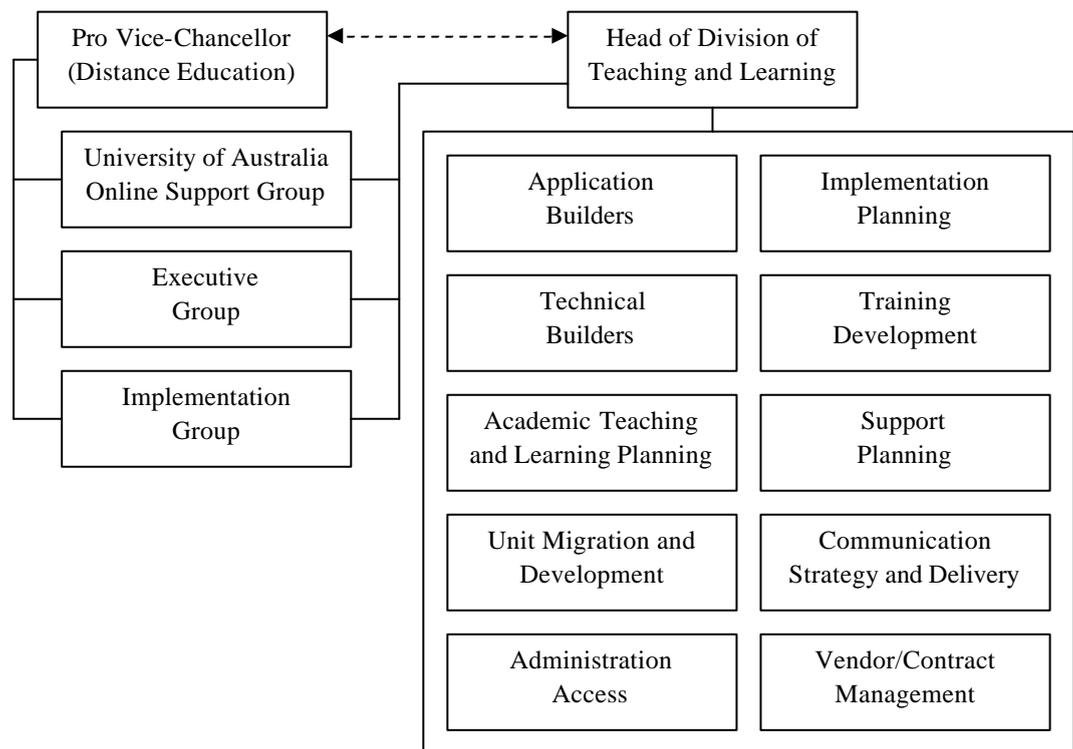

Figure 6.2: The structure of the ten teams and the office of the Pro Vice-Chancellor (Distance Education)

The Pro Vice-Chancellor (Distance Education) worked in conjunction with the Head of the Division of Teaching and Learning and was responsible for the University of Australia Online Support Group, the Executive Group and the Implementation Group. The Head of the Division of Teaching and Learning was responsible for the ten tens implementing and migrating units across from old LMSs to EducateMe International. The ten teams all reported back to the Head of the Division of Teaching and Learning.

It was perceived that representatives of the wider university community needed to be on these teams to provide information from each faculty and division. This would ensure that people had the opportunity to express opinions about the software and about implementation and ultimately have a sense of ownership of the system. This was supported by Diane, who believed that with a number of these teams, '*we had representatives from all the faculties and divisions, relevant divisions, and those streams were mostly seen to be making decisions so that we had the faculty buy-in to how we set up the interfaces, how we ran training.*"

Another important step in creating ownership in this process was by the establishment of the Online Educational Managers in March 2003. The Online Educational Managers were sponsored by the Deputy Vice-Chancellor and the faculties and were involved in training in the use of EducateMe International, collaborating with members of other faculties and the Division of Teaching and Learning, providing mentoring and professional development for other academic staff in their faculties, and conducting a project resulting in an exemplar in the use of EducateMe International[12]. Diane believed these Online Educational Managers had a great influence in promoting EducateMe International to their colleagues. She claimed that, '*we had them on board and I think they, as much as anybody else, started being able to talk in the tearoom about EducateMe International…they had more information than lots of other academics about what we were desperately trying to do, so they started saying, 'yeah, the Division of Teaching and Learning and the Division of IT are working really hard to get EducateMe International working in order for you to use it in 2004'.*" By establishing the Online Educational Managers, it was believed by the Division of Teaching and Learning and the

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[12] The Online Educational Management Program

Executive Group that they were able to have supporters and contact people throughout the faculties.

By slowly phasing in aspects of the enterprise-wide LMS, any bugs would be identified early on and removed. According to the Head of the Learning Support Group another advantage of the phased-in approach was that the Executive Group *"had good feedback and good representation from all the faculties, staff and students. It really gave us a good idea of what was going to be accepted and not accepted. I think the objections have come out in the piloting phase."* Not only would any hardware and software 'bugs' be identified, but the Executive Group were able to identify any user issues and objections of having to teach their unit with a basic online presence and resolve these before all units had to go online. The Head of the Division of IT claimed that *"success is very much dependent on the software working with not too many bugs and the availability of adequately configured hardware to handle the load."*

This phased-in approach brought a significant issue with users to the notice of the Executive Group that EducateMe International ran entirely on the Internet. Many of the old EasyTeach users were still familiar with, and identified a perceived benefit of, client-server software that enabled quick transactions and interactions with the central server. It was clearly acknowledged by the Executive and Implementation Groups that the system would be slower than previous systems, regardless of which enterprise-wide learning management was selected. This belied was supported by Diane who believed that *"people are happy to conceptualise it, but then when they face reality you know you've hit a problem as soon as they say, it's web-based... It's not EasyTeach, and it's not going to be, and it's never going to be that fast, there's just no way. We could have chosen ChalkOnline and we would have had exactly the same problems. They're both web-based systems."*

In order to install EducateMe International, new hardware was required. However, when the Executive Group submitted their recommendation to implement EducateMe International as the enterprise-wide LMS, they received a limited budget. As a result, there were difficulties getting the hardware to run the system well. The Project Manager claimed that *"we had a lot of problems with actually getting the hardware we needed because we didn't have the budget to meet the requirements we*

had set." The Executive Group set EducateMe International up on test hardware, but needed to bring in completely new hardware in order to have a full-scale implementation across the university. As the Head of the Learning Support Group stated, *"we said to the Senior Executive, 'we need to put in new hardware for all this stuff to successfully work and it's going to cost us in the vicinity of $1.4 million to do it'…we eventually managed to get the Vice-President to agree to spending the money."* Having trialled the use of EducateMe International on test hardware, the Executive Group knew what type of infrastructure was needed in order to have a university-wide implementation. By approaching the Senior Executive and in particular the Vice-President, the Executive Group was able to obtain the money required for the implementation.

Once the hardware infrastructure was established, issues arose in regards to the software supplied by EducateMe International. The Project Manager claimed that "*EducateMe International started off with a beta version of a product back in the end of 2002. Once we started off with the beta version they gave us version one of the product to implement for semester one 2003, then quickly decided that there were problems and gave us version 1.01 and then started applying patches every couple of weeks to apply to this product because they were finding problems with it, obviously it hadn't been tested.*" Once the software was implemented, bugs appeared. The EducateMe International company provided appropriate patches and upgrades to the product in order to make it successfully work on the infrastructure. The Head of the Division of IT further believed that these software problems were experienced during the teaching semester. He said, *"during the first semester in 2003 we came up with major problems, students lost assignments and emails disappeared from the system which caused us a fair bit of heartache. Ultimately, it was nothing that we couldn't resolve but they were some fairly intense issues at the time."* Although these problems could be resolved, there was a sense by a vocal minority of the university from various faculties, typically EasyTeach supporters, that perhaps the product was released too early and that the University of Australia should have waited a little longer for the 'bugs' to be fixed, rather than relying on EducateMe International to continually provide updates and patches.

In summary, the technical implementation of EducateMe International was driven fundamentally by an interaction between the vendor and the university. The

implementation of the enterprise-wide LMS was run by the Division of IT and followed a typical project management (Martin). According to the Project Manager, "*the structure of the software user interface was actually determined by the policy, it determined what was actually going to be in the system. So the interfaces that the IT guys had to put in place were all related to what the policy said they should or shouldn't do.*" After the first trial implementation, an interesting outcome occurred. Technically the software seemed to work, however, with the operation of one particular trial of one function the whole system failed. Furthermore, there were a number of small technical bugs that needed to be put in place (Simon).

The outcome of this was to change the structure of the implementation. According to the Pro Vice-Chancellor (Distance Education), "*the technical structure was driven by one extremely large server, which had the capacity to run four or five applications but because of the way EducateMe International sent queries to its databases, it was overloading the server and slowing the whole process down to the point where it actually stopped when there were very large numbers of concurrent users.*" The University of Australia in conjunction with the vendor decided to trial, in the second phase, a clustered arrangement of servers to see if that would improve the query processing from the system to the databases. That decision was fundamentally made between the vendor and the Division of IT, driven by the Pro Vice-Chancellor (Distance Education), who was concerned that the system was getting a bad reputation from a technical perspective (John). The decision proved to be successful.

During the second phase, more units were migrated across to EducateMe International. However, the other LMSs running in the university were still running for most units. Furthermore, some units were running both systems. Technical issues decreased dramatically in the second phase, and as a result, a higher load testing was undertaken with 30,000 simultaneous users tested (Martin).

In February 2004, all four of the old LMSs were turned off and on March 1st 2004, the EducateMe International became fully operational with all of the required units being put in place. Throughout the technical implementation, there was a typical process of trial and error on different infrastructure, initially using one large server, which was purchased specifically for this purpose. That had not worked as well as it was hoped, so to deal with the technical problems associated with queries to

databases, which was slowing it down, the move to a cluster of servers solved the problem (John).

At the same time as this technical implementation was occurring, with dedicated resources given to it by the Division of IT, all under the guidance of the Project Manager reporting to the Pro Vice-Chancellor (Distance Education), there was constant evaluation with the vendor about technical issues. Meetings were arranged for every Wednesday morning to facilitate the evaluation process. Every Wednesday afternoon there was a meeting of the Implementation Group, which monitored all aspects of the implementation, from November 2002 through to November 2004. This group dealt with problems, strategies to overcome problems and comprised of academic staff, technical staff from the Division of IT, administrative staff from the Division of Teaching and Learning and was headed by the Pro Vice-Chancellor (Distance Education). The success of the technical implementation can be determined by statistics gathered between March 2004 and November 2004, where the system uptime for EducateMe International was 99.98%. There were issues occasionally with slowness, which were associated with Internet and Web problems, but the system itself didn't seem to have any technical problems at all (John). This implementation process can be seen in Figure 6.3 below.

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During the negotiation of the contract between the University of Australia and EducateMe International, the University of Australia negotiated a chair on the EducateMe International Product Advisory Board. As the IT Manager in the Division of Teaching and Learning claimed, "*when we negotiated the contract with EducateMe International, we negotiated that the Head of the Division of Teaching and Learning should sit on the product advisory board for the first 18 months of the contract.*" This helped resolve software issues with EducateMe International a lot quicker than normal. According to the Head of the Division of Teaching and Learning, "*we could directly say this is what is happening with our system in a meeting with a number of other representatives from the US institutions, so that was quite good because it meant that we could basically say it like it really was in the ears of other people who were either buying or had bought the product with their executive.*" By having this relationship with EducateMe International, the University of Australia through the Head of the Division of Teaching and Learning, was able to have a say in which direction EducateMe International would go, as well as highlight any problems with the actual product, leading to a quicker response from EducateMe International.

This close working relationship helped identify and resolve issues with the software. The Head of the Division of IT believed that having someone on the EducateMe International board, "*was extremely beneficial to the University of Australia because it gave the people from EducateMe International an understanding that our staff are very competent and knowledgeable. This then led to the establishment of trust and credibility.*" Not only did the University of Australia have the Head of the Division of Teaching and Learning on the advisory board at EducateMe International, but also EducateMe International visited the University of Australia to provide some assistance. Additionally, the University of Australia was also able to send two staff members over to work closely with EducateMe International and build a technical relationship. As the Head of the Division of Teaching and Learning claimed, "*David and Andrew have been really, really instrumental in helping us develop an extraordinary professional close technical relationship with EducateMe International…We sent them over for a couple of weeks and they worked in the development office and talked to them about the problems we were having and got inside the code. I don't believe any other customer has done that, or been allowed to*

do that, but we now have a mutual respect." The University of Australia was in a close working relationship with EducateMe International, which helped resolve any problems and 'bugs' identified in the system. As the original design of EducateMe International had been based in smaller classes, EducateMe International valued this interaction as it helped them experiment closely and improve their product with a large institution.

Although the speeding up of the implementation timeline impacted the delivery of the product, the Head of the Learning Support Group believed that the system would not have worked if this close working relationship with EducateMe International had not been possible. Diane believed that she "*didn't think it was actually possible for software vendors to be that supportive, but really every time the University of Australia said 'jump' they said 'how high and how far?' We were getting the best support we could possibly buy in terms of actually making it work for this year.*" The close relationship with EducateMe International helped implement the system in the required timeframe, minimising problems with hardware and software.

6.5 Migrating and transferring from five learning management systems to one

As the 'bugs' in EducateMe International were being minimised, teaching staff were starting to transfer their units across from their respective old LMSs to EducateMe International. The Faculty of Commerce and Administration previously used EasyTeach. As a result, there was a bit of resistance in migrating across to EducateMe International. As Rose believed, "*the Faculty of Commerce and Administration had been through more angst than anybody else in terms of when EasyTeach went down.*" As was outlined in Chapters Four and Five, the Faculty of Commerce and Administration had a lot of experience invested in EasyTeach and therefore had a lot to lose as a completely new enterprise-wide LMS was selected. The EasyTeach advocates in particular felt that they were being treated unfairly because EasyTeach was never considered as a solution by the Executive Group in the previous phase to the enterprise-wide LMS. As a result, EasyTeach users were one of the last groups to be migrated across to EducateMe International. The Faculty of Commerce and Administration also had established methods of teaching online through the extensive use of EasyTeach. Staff in this faculty knew what it meant to teach online as well as work around problems encountered and maximise the

advantages of EasyTeach to the extent that they were utilising EasyTeach to its greatest ability. The faculty were now migrating to a new system where they perceived that they did not have the same abilities in EducateMe International and their expectations were high.

Another driving factor for the decision to slowly migrate users from EasyTeach across to EducateMe International was that the licence for EasyTeach expired in September 2003. Rather than rushing people from EasyTeach onto EducateMe International, it was perceived by the Executive Group that it would be better to slowly migrate people across from EasyTeach to EducateMe International. As the IT Manager for the Division of Teaching and Learning claimed, "*although the license to EasyTeach ran out in September 2003, we continued that license till the end of 2003 because it made no sense to finish in the middle of semester. So it was already decided that at the end of second semester 2003 is when EasyTeach will wind down so that gave us a full year to migrate people off that.*" This would also stop the problem of large number of units simultaneously transferring to EducateMe International. The Head of the Learning Support Group stated that the "*long phase-in process actually helped as it gave people the opportunity to have a look at EducateMe International, and see how other people were using it.*"

Being such a large faculty, it was fairly important to get their units across to the new system, so exemplars could be created to show the rest of the faculty that it was not difficult to transfer across to EducateMe International. As a result, the Pro Vice-Chancellor (Distance Education) believed that the faculty migration to EducateMe International was too slow. He believed that the Faculty of Commerce and Administration "*were too slow to adopt it, sitting back and waiting for other people to make mistakes. That was a bad error on their part, we would of certainly have changed that.*"

As a result, the Pro Vice-Chancellor (Distance Education) put pressure on the Dean of the Faculty of Commerce and Administration to get units offered by the faculty to migrate across to EducateMe International. Norma, the IT Manager for the Faculty of Commerce and Administration, believed that the pressure from the Dean flowed down to the members of the faculty, "*there was pressure that we weren't doing enough and I felt that some people were being unjustifiably targeted for making bad*

decisions when in fact are making very good decisions based on experience." This was further supported by Rose, who claimed that "*yes, we did get questioned why we didn't take a more mainstream rolling out of units onto EducateMe International.*" However, Paul, a Lecturer in the Faculty of Commerce and Administration claimed that, "*you have to work out where all the problems are.*" By slowly migrating units from EasyTeach across to EducateMe International, the Faculty of Commerce and Administration was able to assess what 'bugs' were in the system without affecting any units.

Fortunately for the Faculty of Commerce and Administration, every unit had been operating online via EasyTeach. As Rose from the Faculty of Commerce and Administration stated, "*many of our units had been fully online already because our Faculty had a large distance education student base.*" This sped up the process slightly, however, it was still perceived by the members of the Executive Group that the Faculty of Commerce and Administration was not migrating their units quickly enough compared to other faculties.

The Dean of the Faculty of Commerce and Administration helped support the schools, by pushing for all academic staff to attend training sessions for EducateMe International. There were some difficulties in getting some people to attend, as the Pro Vice-Chancellor (Distance Education) claimed, "*everybody complained that they didn't have the time to attend training and doing it late 2003 had an impact on staff workloads.*" By the start of 2004 only 70% of the academic staff in this faculty had attended training on EducateMe International, compared with over 95% in each of the other four faculties. This lack of response frustrated members of the Division of Teaching and Learning. The Head of the Division of Teaching and Learning suggested, "*there are people who are using EducateMe International who haven't been trained, so we've got idiots writing emails because they just don't now what to do, so they're blaming the system. We've got academic staff members who were using it probably inappropriately or not in any way that will enhance learning, they're just saying that the basic requirements are being met, but there's no deliberate educational advantage for now, having done it and they may take a little more time to be into thinking about new ways of teaching. They've been told to use it without adequate support training, so they've got their backs up.*" As some people were not properly trained in the use of EducateMe International to enhance their

teaching of distance education-based students, they took a lot of their anger out on the system.

By having a supportive Dean and extensive use of teaching online via EasyTeach, the Faculty of Commerce and Administration was able to eventually make the transition across to EducateMe International. Many members of the Executive Group believed that there would be difficulty with some members of this faculty due to their long association and experience with EasyTeach. However, through the online presence policy, they had little choice but to learn how to use EducateMe International.

The Faculty of Creative Arts were the earliest adopters of EducateMe International. This was because these staff members had little choice about what system they adopted, particularly those who had been using QuickLearn. As the IT Manager for the Division of Teaching and Learning believed, *'with QuickLearn the decision was made for us because we weren't going to continue the license and that finished at the end of 2002.'* By the end of 2002, the Faculty of Creative Arts had migrated all users off QuickLearn and into EducateMe International. Essentially, the second semester of 2002 was a pilot test of how EducateMe International would work as an enterprise-wide LMS. This enabled the Executive Group, the Division of Teaching and Learning and the Division of IT to ensure that EducateMe International was working. In 2003, the Executive Group had to turn off the QuickLearn software as the University of Australia's license with QuickLearn had expired. As Simon claimed, *'the way the license was structured, the software simply would not work after the license date, so the server didn't respond to anybody, so you didn't have a choice.'* There was little choice for those using QuickLearn in when they could migrate across to the new system.

The migrating of units from QuickLearn to EducateMe International caused problems for faculty members. According to the Online Learning Manager, *'we did not have the skills or the resources in the faculty to take those units from QuickLearn into any other format.'* When the decision was made to originally select and implement QuickLearn, the Division of Teaching and Learning had a large involvement with setting up units inside the Faculty of Creative Arts to run on QuickLearn. Due to the Online Learning Manager for the Faculty of Creative Arts

not being involved in the setting up process, there was little support in terms of the skills or resources required to migrate across to EducateMe International. As the Project Manager suggested, "*the Division of Teaching and Learning had a lot of knowledge in their heads about how they had originally developed those units on QuickLearn and how they worked.*" This ultimately made the migration from QuickLearn to EducateMe International more difficult than what it should have been. The Online Learning Manager for the Faculty of Creative Arts supported this by claiming that "*the migration was quite awkward and some of the disgruntled responses that came through about EducateMe International in the early stages were largely due to the fact that that learning services were managing the piloting of EducateMe International.*"

Despite the lack of skills and resources available in the migration of Faculty of Creative Arts unit to EducateMe International, units were eventually moved across from QuickLearn to EducateMe International. In terms of the training provided, the Dean of the Faculty of Creative Arts played an instrumental role in getting 100% of faculty academic staff members to attend training for EducateMe International. As the Head of the Learning Support Group claimed that "*the Dean said that everybody had to do EducateMe International training. However, in recognition of the time put into attending training, staff would be paid in the form of marking release.*" By offering members time release for completing their training, faculty members felt this was a good incentive and participated in the training.

As the Faculty of Creative Arts were one of the early adopters of EducateMe International transferring across from QuickLearn, there was a push to migrate the remaining faculty members from EasyTeach onto EducateMe International. In the migration process, one of the early adopters developed the metaphor of pioneers and settlers. The pioneers, or early adopters, according to the IT Manager for the Division of Teaching and Learning, were able to try "*out things and finding problems. They were screaming out for help which was wonderful. Ultimately, some of our pioneers were pushing boundaries and their stories were valuable to the settlers who eventually came after the pioneers.*" The early adopters were the exemplar units, who could go to the remaining members of the faculty, the "settlers", that had not moved across to EducateMe International and say that it is not all doom and gloom and that there are ways of overcoming problems encountered. The Head

of the Division of Teaching and Learning believed that *"the people who went to EducateMe International were innovators, they didn't seem to be too fussed about moving to Advanced and I think they've done some pretty amazing stuff."* In order to increase the opportunity for success, particularly in the Faculty of Creative Arts, innovators were necessary to push the boundaries and experiment with teaching online, convincing the remaining members in the faculty that EducateMe International was a good enterprise-wide LMS and enhanced the online learning experience.

The Faculty of Technology were perhaps the easiest of the faculties to transfer across to EducateMe International. This was primarily because they had been using one version of EducateMe, the Standard Edition and had upgraded to EducateMe Advanced Edition in the early implementation stages. As Samantha, a Senior Lecturer in the Faculty of Technology suggested, *"we moved to EducateMe International because EducateMe International came with a Advanced Edition licence for free, so the Executive Group handed the free upgrade to EducateMe Advanced Edition so we didn't have to pay for EducateMe Standard Edition any more."*

The migration process taking units from EducateMe Advanced Edition to EducateMe International was fairly easy in the Faculty of Technology compared to the other faculties. By the second semester in 2003, nearly all units were in EducateMe International. In conjunction with migrating units across to EducateMe International, the faculty had a good opportunity to review their online teaching standards. Simon, the IT Manager from the Division of Teaching and Learning believed that the Faculty of Technology *"made an initial decision that, not to use the technical solution for migrating from EducateMe Advanced Edition to EducateMe International."* There was a simple solution to migrate units across from EducateMe Advanced Edition to EducateMe International, whereby the structure of EducateMe Advanced Edition could be taken straight out and locked into EducateMe International. Rather, the Faculty of Technology decided to get their teaching staff to review their pedagogy and understand what it means to teach online.

The Faculty of Technology made the decision to enforce all teaching staff to re-evaluate their teaching pedagogy onto the online environment. The Division of

Teaching and Learning was able to assist the faculty in the re-evaluation process. The Head of the Division of Teaching and Learning suggested that the Faculty of Technology *"took a long term plan rather than a short term, easy option to re-evaluating and migrating units from EducateMe Advanced Edition to EducateMe International."* Migrating across to the EducateMe International allowed the faculty to re-examine their pedagogy and update it if necessary. This action was enforced by the Dean. The faculty were keen to have people review their current online teaching system and practices and look at why they will be using it and how it could be used better.

The Faculty of Education migrated their units in a similar fashion to the Faculty of Commerce and Administration. As the Online Teaching and Learning Manager in the Faculty of Education claimed, *"there were teaching staff using EasyTeach to provide their online teaching, and they loved to go into EducateMe International, so that it wasn't a problem, they coped with the difference. However, some members of the faculty decided to keep the internally developed EducateOnline system running."* The Faculty of Education used two LMSs to provide online teaching, EasyTeach, and the internally developed EducateOnline. Those who used EducateOnline for their teaching believed that students were given access to more information in an easy to use manner. As Diane believed, *"members of the Faculty of Education developed EducateOnline so that a student would be able to log in and have access to their whole major sequence of units whereas EducateMe International only allows a student to access units that they are currently enrolled in."* Users in EducateOnline had access to all twenty-four units that they would have to complete in order to graduate, whereas EducateMe International only gives access to the four units the student is currently enrolled in, in a given semester. As a result, some teaching staff, and users, typically third-year students, were dissatisfied with this lack of access to major sequence information.

There were some disgruntled users in the Faculty of Education, which, according to the Head of the Division of Teaching and Learning, were the ones *"that weren't really wanting to use EducateMe International, but now have to be online as their units have to have a basic online presence."* However, the Online Teaching and Learning Manager in the Faculty of Education suggested that *"there is a lot of support within our faculty to help with issues relating to EducateMe International.*

So rather than say to a colleague that they haven't done the Division of Teaching and Learning training, we let them go into the system and work it out themselves. If they get stuck, we have folk in the faculty who are able to help, we've got our Online Educational Managers who are there as well, so that was a good initiative, to have a couple of people on the ground, who are actually doing a project themselves and made themselves to help others." The Faculty of Education tried to adopt an organic adoption process, allowing teaching staff to migrate and experiment with EducateMe International in their own time. The Faculty of Education did not force members to attend training offered by the Division of Teaching and Learning, which other faculties utilised. As the faculty had Online Educational Managers, they had people who had good experiences with EducateMe International and were happy to push the boundaries, finding new and better ways of teaching online with the new system. The Online Educational Managers were then able to help struggling members improve their online teaching practices.

However, unlike the Faculty of Technology, the Faculty of Education did not utilise the opportunity to review their pedagogy with the shift to the new enterprise-wide LMS. As the IT Manager from the Division of Teaching and Learning suggested, "*I think the Faculty of Education could probably be a little bit more out there as far as pedagogy, what teaching and learning is all about and how online can help that, utilising different models of teaching. Unfortunately, they haven't been doing that.*" In response to this lack of review, the Online Teaching and Learning Manager in the Faculty of Education claimed that "*there are probably a few reasons for the lack of review. I think the major one is that it takes time and resources and we just haven't got that...I think it becomes a resource issue because you have to learn to use the system, so there is training involved, and people have to find time to do that.*" As other academic staff members have stated, staff workloads were a major inhibiting issue as academic staff did not have enough time to review their online teaching methods, due to other teaching commitments.

Ultimately, as the Head of the Division of Teaching and Learning stated, academic staff members in the Faculty of Education "*that made the most noise about EducateMe International were those who did not have a good experience with the new system. However, they have not done enough to have a good experience. That's my suspicion because we've had people at the same time saying that EducateMe*

International has been fantastic." It was believed by the Head of the Division of Teaching and Learning, that once those Faculty members who had started experimenting with EducateMe International realised that the new LMS was not as bad as members of the university were making out, adoption and use of EducateMe International would increase.

The Faculty of Medical and Health Sciences presented challenges to the implementation team. As the Head of the Division of Teaching and Learning suggested, "*the Faculty of Medical and Health Sciences were a problem in that they were very independent of everybody in the university and tried to remain independent.*" The Faculty of Medical and Health Sciences is predominantly an on-campus faculty. The schools and units inside the school's typically offer practical-based work, where students have to work hands on with experiments. Putting practical-based work into an online environment is extremely difficult. As a result, the Online Learning Manager for the Faculty of Medical and Health Sciences claimed that "*we had very little to do with the Division of Teaching and Learning by way of support for off-campus material and therefore for online migration.*" The Head of the Learning Support Group therefore believed that this faculty was "*probably very insular. They didn't embrace EducateMe International and the support that could have been provided by the Division of Teaching and Learning.*"

The Faculty of Medical and Health Sciences therefore chose to run training themselves. As the IT Manager for the Division of Teaching and Learning believed that "*in some ways they helped us because we didn't have to concern ourselves with their training. But at the same time it meant that we still needed to be aware of what they were doing because of the support issues.*" As the Faculty of Medical and Health Sciences was typically independent, they ran the training themselves, which, although the Division of Teaching and Learning were happy with the faculty providing their own training as it reduced their training workload, the Division of Teaching and Learning still needed to be aware of what the Faculty of Medical and Health Sciences members were learning, to ensure that no members of the university were disadvantaged when it came to training.

The reasons given as to why the Faculty of Medical and Health Sciences provided their own training, according to the Online Learning Manager in the Faculty, was

that *"most of the trainers from the Division of Teaching and Learning were ex-editors with no teaching experience and therefore had no experience of what academics do and ultimately were barely on top of the system they were having to teach. The decision to teach staff one-on-one was made in desperation having seen how bad the Division of Teaching and Learning trainers were and seeing how academics reacted – badly - in a group computer lab settings."* Members of the faculty did not believe this was a conducive way to learn how to use a new system, particularly as they are a "hands-on" faculty that learns practically, by using the system. As a result, the Online Learning Manager decided to approach unit chairs and provide individual training, *"by sitting down with them in their office for two hours, stripping down the training needs to the absolute rock bottom."* By teaching them one-on-one, staff could learn and experiment with the system with the experienced Online Learning Manager close by, offering help when the user got stuck. Although this was a slow and tiring method, it has worked and the majority of users are using EducateMe International with a basic presence to teach their unit.

6.6 Risk Management Issues

One issue the Pro Vice-Chancellor (Distance Education) had to deal with in his new role was an increasing focus on the risk management associated with the implementation of the new LMS. The reasoning behind the focus on risk management was that another Australian University had publicly suffered from the massively expensive (over $50 millions) implementation failure of their student record information system, a year previously and had as a result received a great deal of bad media coverage. The University of Australia did not want to suffer the same bad press as that university. As the Head of the Division of Teaching and Learning claimed, *"the implementation at another Australian university caused such a degree of nervousness with the Vice-Chancellor that I am sure she wanted us to all swear on a pack of bibles that there would be no bugs, there would be no problems, there would be no surprises...so there's been a lot of managing on the Senior Executive trying to manage expectations to minimise uneasiness, to chill out a bit."*

This was supported by the Online Learning Manager for the Faculty of Creative Arts, who believed that, *"Another Australian university helped us greatly in raising the issue of risk management because when you have a Vice-Chancellor splattered across the front page of the local and national newspapers, because there was a*

mess up with their system, that's not the kind of publicity that a new Vice-Chancellor might not want to have."

The Pro Vice-Chancellor (Distance Education) responded to this by claiming that the issue of risk management was blown out of proportion. According to him, EducateMe International was piloted in 2003, and "*people in the university took every opportunity to say 'well the system's no good.' We even started to hear people ask questions at Academic Board. The Union went to the Vice-Chancellor and said the systems a failure, it's going to be terrible, and she believed them, because they kept saying that question over and over again.*" The issue of risk management became significant as a vocal minority took the opportunity to criticise EducateMe International.

However, a risk management policy had been in place since the end of 2002 (John). As the Head of the Division of IT claimed, "*we actually developed two risk management plans. There's the formal risk management plan and there's the informal risk management plan. From an informal perspective the system has been recovered many, many times because we tested the experimental nature of the pilot last year. For a formal perspective two disaster recovery tests were conducted, one last month and another just last week to show we are able to successfully recover from fairly stringent disaster scenario posed.*"

The Project Manager confirmed the existence of the risk management plan, claiming that, "*the Risk Management Plan I created at the beginning of the project, actually had more than one hundred risk items and associated actions on it. We've done disaster recovery tests ensuring that the system could actually recover everything online and offline if we had to we could install yesterdays stuff within 24 hours. There's been a lot of work put in to make sure that this thing is actually very rigorous. The disaster recovery actions mentioned were only small one component of the plan. I think that the real issue with the Vice-Chancellor was that if anything, the Risk Management Plan we had in place was too detailed.*"

The Pro Vice-Chancellor (Distance Education) further confirmed that a risk management plan was in place. However, he claimed that the Vice-Chancellor failed to understand this. He believed that, "*because the Union had raised the risk*

management point with the Vice-Chancellor so often, she started believing that the risk management plans were not good enough. This started a big argument between her and me and between her and the Division of IT because we said here is the risk management plan, but we had a constant debate about the accuracy because she couldn't understand the risk management plan."

The bad publicity received by the failure of an implementation of a student record system in another Australian University put pressure on the Pro Vice-Chancellor (Distance Education) to ensure that appropriate risk management plans were in place. Essentially, the Vice-Chancellor did not want to be put in that same situation of having a failing system and bad publicity. The Vice-Chancellor ultimately pressed the issue of risk management with the Pro Vice-Chancellor because she was being pushed by the Union to disclose the risk management plan. A risk management plan had been in place and at least two simulations had been run in order to identify any issues arose if the system failed. Both of the simulations proved to be successful. However, the Vice-Chancellor was not happy with this and still put pressure on the Pro Vice-Chancellor (Distance Education), and went so far as to request external consultants to come in and evaluate the risk management plan. These evaluations proved to be successful, confirming the depth and quality of the already developed risk management plan. Once the Vice-Chancellor understood that an appropriate risk management plan was in place, she wanted to ensure that academic staff would use the system. In order to do this, the Vice-Chancellor requested the Pro Vice-Chancellor (Distance Education) to create policy ensuring that all staff and students would use EducateMe International. With these changes to the Senior Executive and policy within the university, a decision was made by the Senior Executive to create an Online Services Division to oversee the implementation of EducateMe International.

6.7 Change and Policy Directives

The first decision of the new Vice-Chancellor was to establish an independent review of the existing Academic Board. This was conducted in March 2003. It is believed that the Vice-Chancellor wanted to strengthen and extend the role of the academics and the Academic Board. Fifty-eight recommendations were made to improve the Academic Board and covered areas including the role and functions of Academic Board; the Composition of Academic Board; the Committees of Academic Board;

the Chair and Deputy Chairs of Academic Board; the Conduct of Business of Academic Board and its committees; Interactions and Communications; and Directions of the University and Academic Board. The review panel believed that the current Committee structure was cumbersome and limited the development of an effective and responsive Academic Board. A new Academic Board was formed.

In addition to this strengthening of the Academic Board, the new Vice-Chancellor wanted to speed up the process of implementing EducateMe International and have all units online by semester one, 2004, bringing forward the implementation timeline by twelve months. The IT Manager for the Division of Teaching and Learning claimed that, "*the new* Vice-Chancellor *came on board and said, 'I want to increase the University of Australia's online presence, let's have some online presence from every unit by the start of 2004,' which was a big change to the way we specified how the project was going to work. That ramped up the ante very quickly for us.*"

Not only did the decision to speed up the implementation of EducateMe International affect the work of the implementation team, it also affected every academic user. Everyone now had six months, instead of eighteen months, to learn how to use the new system. By forcing all teaching staff and students online earlier than anticipated, it was recognised by the Executive and Evaluation Groups that any bugs that would appear would be more severe and would affect more users, because of the wider use of the LMS. This concern was voiced by the Online Learning Manager for the Faculty of Creative Arts, who believed that "*had we been aiming for the 2005 target of having all units online deadline, I'm quite confident that the bugs would have been ironed out and there would have been far less heel dragging and far less angst on the part of the people who perceived that they were being dragged from one technology to the next, through to something unknown, unwillingly.*"

Similarly, the Head of the Division of Teaching and Learning also claimed that, "*having a new Vice-Chancellor affected the implementation of EducateMe International by bringing the implementation forward by a year with six months notice that we were going to have all the units with a basic online presence for 2004. That was originally going to be first semester 2005, which absolutely threw into disarray our training program, because we were going to run concurrently pedagogical sessions about what it is to teach online and how you can do it on*

EducateMe International. Instead we just had to train 2,500 lecturers on how to use EducateMe International basic. It had a big impact and we will suffer the consequences for the next couple of years probably. I think that the decision to come forward by a year was a disaster, and we were not funded to accommodate this new timeline."

In order to increase user buy-in and use of EducateMe International, the Vice-Chancellor requested the Pro Vice Chancellor (Distance Education) to write a policy requiring every unit taught at the University of Australia to have one of three forms of an online presence in EducateMe International by the beginning of the academic year in 2004[13]. According to the policy, each unit offered had to have at least a basic online presence. This required each Unit Chair, the head of a particular unit, to have a designated area in EducateMe International for their unit. In that area, there was required to be the unit guide (outline of the unit, including associated resources and unit objectives), a 'resources area' where an electronic version of the readings (if applicable) and other resources might be placed, and the opportunity for the teaching staff to communicate with students through a noticeboard (a one-to-many communication, for example, announcements). A facility for structured online interaction between teacher and students was also made available to use at the choice of the lecturers involved in the unit, with the proviso that all students in units that do not meet face-to-face had to have the opportunities for facilitated online interaction at least once per week. The Unit Chair had to be prepared to report to their unit community through the EducateMe International area established for their unit.

Units could extend themselves to be more online under two further options, also defined by the policy. These were extended online units and wholly online units[14]. The extended online unit stipulated that these units will have all of the components of the basic online presence plus the study guide for that unit; the unit should have additional EducateMe International options included in the unit and available for students, such as self-paced assessments; and additional resources available to students (through, for example, additional electronic content, CD ROMs with additional material, video and audio streaming).

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[13] Online Technologies in Courses and Units – procedure approved by Academic Board on 25 July 2003
[14] Online Technologies in Courses and Units – procedure approved by Academic Board on 25 July 2003

The wholly online unit was to have all teaching resources online and undertake all teaching interaction online and include all content (commercial print-based textbooks or commercial e-texts could be used as supplementary material); all communication and interaction with students was to be online together with assignment submission and feedback; each unit was required to have at least one session of interactive communication (synchronous, asynchronous, or both) between teacher and students online at least weekly, or as established at the beginning of the unit. Such interactive sessions were required to have an assessable component where appropriate. As a caveat, the policy noted that "to ensure access for all students until bandwidth issues in Australia are addressed, additional resources such as video and audio will be provided on CD-ROMs for off-campus students where appropriate."

This policy was approved by Senior Executive and then the Planning and Resources Committee of the university. The policy was then sent to the Academic Board for discussion and was approved to be implemented immediately as the first decision of the new Academic Board on 25 July 2003.

The policy meant that all teaching staff had to undertake EducateMe International training before the end of December 2003. For some it was more essential as they would be using EducateMe International for their unit from the beginning of the summer semester, starting at the beginning of December 2003. The academic staff of the university were put under a lot of pressure to attend training sessions to become compliant with the policy and to have the skills to enable their unit to have a basic online presence in 2004. The sheer logistics of the decision to speed up the implementation process required the Division of Teaching and Learning to train a large number of academic staff (over 2000) and at the same time pressure the faculties to get academic staff to attend those training sessions. The IT Manager for the Division of Teaching and Learning, implementing EducateMe International and providing user training believed that they were *"hampered through their human resource capacity. We had to ramp up the team much more quickly in order to cope with that training load. I suspect it hampered the activity that was going on in the faculties, because all of a sudden people had to attend training sessions...We had 1600 staff go through training programs between June last year and January of this*

year. I think in some ways it changed the relationship that we had with the faculties as well."

Not only were the Division of Teaching and Learning staff members complaining about the pressures of having to deliver so many training sessions is such a short time, the demands of the Academic Board adoption of the new policy was also perceived by academic staff to be increasing their workloads. Lara, from the Faculty of Creative Arts, believed that members of the university *"perceived the new system as being a change and therefore something to resist, because they felt they had enough on their plates and workloads, you know, there still are ongoing discussions, arguments, bun fights about workloads."*

Many members of the university community felt alienated and disappointed that they were not given a choice of using another system. As the Online Learning Manager for the Faculty of Creative Arts claims, *"there was an enormous challenge from users in terms of change management to get them to come on board and accept EducateMe International. They sort of went through those stages of grieving, there was the denial and then, you know, the anger."* To strengthen the impact of their feelings of alienation about this issue, some members of academic staff approached the National Tertiary Education Union (NTEU) to assist those academic staff members in making sure that they were heard. In a document of issues relating to EducateMe International sent to the Senior Executive dated in early November of 2003, the issue of imposition of the new LMS system without choice was raised. The Union representative argued that, *"the all unit implementation of EducateMe International has brought with it a perception of imposition. There have been statements that academics have a choice about the use of EducateMe International, and contradictory statements that 'you can teach online or teach elsewhere!' As has been pointed out, the best implementations of online practice occur where there is no imposition."* The Union capitalised on the previously documented growing use of EasyTeach, claiming that EasyTeach was successful as a LMS because it grew organically. No one was forced to use EasyTeach, yet members were still willing to use it for teaching and learning because they saw their colleagues use it and were happy to trial it. This was not the case with EducateMe International as all staff and students were to be forced onto this one system.

The Union were also alerted to the impact on workloads and started campaigning to lighten the workload of staff. However, the Head of the Division of Teaching and Learning believed that having to learn EducateMe International and the imposition on workloads seemed to be a convenient issue to raise in the eyes of the Union with the university. They claimed that the workload issue "*was linked very closely with the fact that the University of Australia was redoing their Enterprise Bargaining Agreement and it just seemed to be a very angry hook to raise.*"

The pressures of training academic staff by the Division of Teaching and Learning exposed the service provision of the Division of Teaching and Learning to criticism by the academic staff completing the training. The Head of the Learning Support Group recalled that members of her training team "*would go to the EducateMe International training sessions and the implementation would be criticised…the facilitators of EducateMe International training were being told that the university policy of having online presence was crap.*" The training staff were being wrongly blamed for a decision that was out of their control, and affected a number of the training staff, requiring them to "*go on stress leave, they just couldn't do the training any more*" (Helen). The Head of the Division of Teaching and Learning "*sent out an email to the Deans saying 'could you please advise the staff to stop taking it out on the facilitators'.*" The faculty Deans complied and the criticism was redirected away from the training staff.

The pressures to provide a large amount of training in such a short time, and the stress on staff in the Division of Teaching and Learning being blamed by academic staff for implementing EducateMe International were eased by the appointment of the Pro Vice-Chancellor (Distance Education). It was important to have someone appointed to the Pro Vice-Chancellor (Distance Education) position, who had been involved with the selection and implementation process. This enabled the Pro Vice-Chancellor (Distance Education) to recognise those that opposed EducateMe International and encourage them to experiment with EducateMe International, enabling them to use it in their Unit and enhance their online teaching. The IT Manager for the Division of Teaching and Learning believed that '*it's been good having John in the Pro-Vice Chancellor position, because John has been involved from the beginning, understood where the process was at and who the loud people*

and the powerbrokers were…that's a legitimate thing, that you do have to understand who those people are in order to work with them not against them."

The Pro Vice-Chancellor (Distance Education) claimed that he was fundamentally the driver. This claim was made as the Pro-Vice Chancellor (Distance Education) was a member of the Senior Executive, and thus had more management and university-wide influence. The Pro-Vice Chancellor (Distance Education) was able to speak to individuals, schools and faculties about the benefits of EducateMe International with authority and the strength of the Senior Executive behind him. There was also a need by the Pro Vice-Chancellor (Distance Education) to be able to communicate the intent of the policy to teaching staff as well as to encourage staff to implement their units with a basic online presence. As John claimed, "*I am the one who had to go out and speak to people on-campus, conduct campus meetings, school meetings, and Faculty Board meetings, highlighting the strategic plan and operational plan and assuring everyone that EducateMe International is a good LMS.*"

The Pro-Vice Chancellor (Distance Education) was also responsible for establishing two groups to manage the implementation of EducateMe International. John stated that, "*we created two committees, one being the University of Australia Online Executive Group, which consisted of key stakeholders, and was a very small group. This group made sure that the implementation was driven in the direction we all wanted it to go. In other words, we overviewed performance, looked at problems, and put forward bids for funding. The other group was the University of Australia Online Implementation Group and consisted of a lot of people from the Division of Teaching and Learning, some from faculties. It's looking at what's actually happening on the ground.*" These two groups mirrored the original Executive Group and the Implementation Group used in the selection process. By having these members involved from the original selection process increased the sense of ownership of the system, as well as gave all members completion with the involvement of implementing the system.

As time went on, there was less of a need to have these two differentiated groups. According to the Project Manager, "*in 2004 we combined the two groups into one because we are in the operational stage now and we don't need to differentiate the*

two, we've decreased the size of them and they're now put in together. We've also created a EducateMe International support group, which involves a group of teaching staff to discuss problems with EducateMe International." Rather than have the two groups look at fundamentally the same aspects of online teaching and EducateMe International, the Executive Group decided to merge the two groups and create a totally different support group. As the Head of the Division of Teaching and Learning claimed that, *"we wanted to give teaching staff a forum where they could just discuss it, as an implementation process. So that was one of our ways of involving as many people as we could in the university.*" By giving teaching staff the opportunity to raise problems in a specific forum, they felt that they were being listened to, and their problems would be resolved in some form, whether it is a new way of teaching, or whether a new patch is needed, the support group provided a forum for staff to vent their anger, and discuss and resolve any problems with EducateMe International and online teaching, essentially increasing user buy-in. Although these forums enabled users to voice their opinions of EducateMe International, other issues, such as risk management, were given to the Pro Vice-Chancellor (Distance Education) to resolve.

6.8 The Current Situation (December 2004)

Despite both technical and risk management issues, as well as the policy requiring the use of EducateMe International as the enterprise-wide LMS, members of the University of Australia could see the benefit of using EducateMe International for online teaching and learning. As the Online Learning Manager for the Faculty of Medical and Health Sciences claimed, "*the migration process has been a difficult time but people seem to soldier on. The University of Australia staff sometimes can go a little bit forgotten, because you can get very strategic and very political and very external and competitive. Those are the decisions made by the Senior Executive, yet it is these people who are on the ground and they're the ones thinking how does this make me a better teacher and how can I help my students learn better?*" Implementing a new system of any kind, can be a stressful time for all members involved. However, rather than keeping the selection and implementation process a hands-off experience for the teaching staff, the Online Learning Manager for the Faculty of Medical and Health Sciences argued that it is these members that need to be acknowledged as they, and the students are the end-users, the people actually using the system.

By the beginning of 2004, all units offered at the University of Australia did have an online presence as required by the policy. In four of the five faculties, almost all staff had been trained to use the system. In the Faculty of Commerce and Administration it was 70% (John). In addition each faculty had put wholly online units in place so that all undergraduate students could complete at least one unit wholly online in their degrees. Each faculty had Online Educational Managers to take responsibility for online teaching and learning. Furthermore, each faculty was now concerned about how to improve the quality of their teaching, supported by the policy which had attached to it a list of quality elements for online teaching and learning, against which they could evaluate their performance. A new group of twelve Online Educational Managers was appointed in January 2004. Risk management issues were no longer an issue. The performance of EducateMe International was running at 99% uptime with no system created outages (John; Helen). The university had upgraded EducateMe International to a new version and all staff and students were using the system for all units from March 2004.

Since EducateMe International was implemented fully in 2004, the most significant issue became staff workloads. The majority of faculty members interviewed raised the issue of staff not having enough time to attend training, as they already have a full workload. Those that have been unable to attend training have heavily criticised the system, simply because they do not understand how it works (John; Helen). As has been highlighted earlier by the Head of the Division of Teaching and Learning, any problems the staff who did not attend training face, they blame the system.

The matter of workloads drew a lot of attention from the Union. One staff member from the Union argued that the Union "*is concerned about whether our members will suffer through the increased workloads and stress as they attempt to work with technology that should not have been implemented.*" When the issue of increased workload was raised with the Senior Executive, the Union represented its members, claiming that they would "*typically respond to our complaints about workload issues and so on would say 'oh it's only a level 1 that's required.' But that's simply not true. If staff were teaching on EasyTeach, which a lot of our people were, when EasyTeach disappeared, they had to substitute that with EducateMe International, that's immediately off level one.*" The Senior Executive believed that learning and

adopting a new system would take time, as it had done in previous changes in technology. However, the Senior Executive believed that the implementation and training for EducateMe International required the same amount of time as previous implementations had. As all units had to have a basic online presence, all staff would have to learn the new system, as opposed to previous systems implementation when only a small number of users would have to learn the system. The implementation of EducateMe International immediately forced the teaching staff to recontextualise their teaching via the new enterprise-wide LMS and work out how that new system would enhance their teaching online.

However, the University of Australia, despite initial reservation from faculties and schools, has had EducateMe International in operation for one full year. As a result, the Implementation Group, according to the Head of the Learning Support Group, has had the opportunity to *"regroup after the implementation process and start establishing exemplar units to get a better idea of good online structures, as well as experiment with ideas to start fostering a more extended online practice."* By getting more of these exemplar units established, the wider university community will see the benefits and capabilities of EducateMe International and see how it will help them in their teaching methods. In addition, EducateMe International is improving its product, typically based on the feedback received from the Executive Group and the Implementation Group at the University of Australia.

In conjunction with the exemplar units and the improving product, the Head of the Division of Teaching and Learning believes that time also helps, *"we'll start getting rid of people who are used to EasyTeach, we'll change the culture of about what this thing is, so some of it is just a matter of patience and some of it's a matter of working with EducateMe International."* In order to increase the user buy-in, a further change in mindsets is required. A majority of the University of Australia teaching staff have used their own systems, in some cases for eight years. They are used to their system and know exactly how it works. Once they start working with EducateMe International for a few semesters, they will eventually become more and more familiar with the capabilities and limitations offered by the product. As a result, the teaching staff will also be able to use EducateMe International to support their teaching with the potential benefits of the LMS, such as the gradebook (Chapter 5.4).

Since the pilot and implementation, EducateMe International has been operating across the entire university for twelve months. There were technical and user difficulties along the way. Users, both academic and student, continually complained about the slow speed of the system, and the fact that it was not as good as previous systems they had used in various faculties and schools. However, the system has survived one full academic year with over 33,600 total users logging on during the first half of the semester[15].

The Head of the Division of Teaching and Learning reported that student response has been good, particularly for off-campus students. Non first-year students have complained a bit, mainly due to the speed of the system. Ultimately time will change these perceptions, as students who have used previous systems graduate and first-year students come in and only know of EducateMe International. The Head of the Division of Teaching and Learning claimed that *"the off-campus students have always appreciated technology, so we've got 40% of our students that are off-campus and they find it a good thing...we've had some complaint, very minimal I have to say, but from 3rd year students who say it's slower than EasyTeach, because it's web-based and not client server."* The Project Manager agreed with this and further added that *"I think we've got a generation of students and staff who knew another system well, so we're probably going to have to graduate a few students and retire a few staff members to have the history erased."*

To ease the transition from the old system to the new system, the Pro Vice-Chancellor (Distance Education), believed that *"we should have probably written to all of the students and said that we are introducing a new system, so there might be some variation."* As a result, some of the students might have come in with different expectations, which EducateMe International may have met. This may have resulted in wider and quicker acceptance. However, EducateMe International is in use.

When speaking to the Head of the Learning Support Group about the future of EducateMe International, she claimed that, *"EducateMe International does not do everything that we want it to do."* As a result, the Online Learning Manager for the Faculty of Medical and Health Sciences believes that the University of Australia now needs to *"get another product that does the things that EducateMe International*

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[15] EducateMe International Newsletter Issue 2

doesn't do." Ultimately, EducateMe International is the core system and over time, EducateMe International will be built on and supplemented with extra functionalities. As the Head of the Division of Teaching and Learning suggested, "*at the moment EducateMe International is the central system, but we are already looking for a communication tool which will plug into and enhance EducateMe International.*" This LMS is now to be supplemented with other tools and applications available on the market. By adding more to the product, the University of Australia is making EducateMe International a more robust system that increases the potentialities of teaching online and distance education. In other words, the search for the LMS that meets the majority of staff requirements is on-going.

6.9 Analysis

The third phase of the systems selection and implementation of the enterprise-wide LMS at the University of Australia was marked again by a series of dramas (Chapter 3.6). These included events and decisions associated with and the impact of the new Vice-Chancellor; the process of adoption of EducateMe International by academic staff; the enactment of policy requiring all academic staff to use EducateMe International; and the process of migrating units from existing LMSs to EducateMe International. Of these social dramas, the first three were significant events and will be discussed in detail.

When the Vice-Chancellor was appointed, there were significant changes. Firstly there was a decision to review the Academic Board. The Vice-Chancellor saw a perceived imbalance of power and control held by the service divisions relative to academic staff and wanted to change this, giving academics more control over academic matters in the university. The result was a complete restructure of Academic Board, removing all members who were not academic staff. This move effectively removed power from the divisions and empowered the academic. Senior members of the divisions opposed this restructure, and some even persisted and attended the new Academic Board meetings, even though they had no input into the decisions being made.

The Vice-Chancellor now had the appropriate structure of the Academic Board in place to develop and institute policy that would change the operations of the university. The institutionalisation of policy would give the Vice-Chancellor control

of greater aspects of the university, both academic and administrative. The specific policy that had most affect in this story of systems implementation was the institutionalisation of the policy: *Online Technologies in Courses and Units*, which required all units to have an online presence on EducateMe International. With policy comes the expectation of compliance (Ball, 1990; Corbitt, 1995; 1999; Corbitt and Thanasankit, 2002). Once the policy was enacted, there were no exceptions, ensuring that the new enterprise-wide LMS was going to be used. The aim was to institutionalise practice of this policy.

One significant difference between the adoption of EducateMe International, and the previously used QuickLearn, was in the enactment of policy. Academic staff were not forced by policy to use QuickLearn. Instead, academic staff were given a choice to either migrate across to QuickLearn, or continue using other technologies. However, obvious resistance was still apparent. Debate was expressed openly in Faculty Boards, questions were asked at Academic Board, emails were sent to the Heads of Schools, Deans and the Senior Executive about the new system, complaining about its functionality (John), and staff continually approached members of the Implementation Group and the Executive Group about the new system's performance and functionality.

The adoption of EducateMe International by academic staff combined with the enactment of policy created a series of dramas contesting authority. The Union challenged the functionality of the new systems with the Vice-Chancellor, who as a result was so worried by the potential repercussions of having a non-working system, publicly informed the Pro Vice-Chancellor (Distance Education) that if EducateMe International did not work, then he would lose his job. The Pro Vice-Chancellor (Distance Education) countered the threats by the Vice-Chancellor, and the challenges from the Union and EasyTeach supporters by having a successful risk management plan in operation, supported by the Division of Teaching and Learning and the Division of IT and endorsed by an external consultant.

The enactment of the policy also produced a debate over workloads for academic staff. Members of the Union and other academic staff challenged the impact of EducateMe International on what they saw was an already difficult workload situation. This debate was focused on challenges to the Deans and occurred in the

Faculty Boards (John). Debate focused on impact rather than on the system itself. In adopting this tactic the Union incorporated this issue into their negotiating of the Enterprise Bargaining Agreement[16] bringing the issue of workloads and another issue, the time demands of EducateMe International training into a public forum.

However, the enactment and implementation of the policy of *Online Technologies in Course and Units* meant that there was a public demand for compliance which had to be reported to other academic staff in the Academic Board on a regular basis. The debate became one of the policies of human resources management and industrial relations rather than one that focused on teaching and learning. The enactment of policy was in the end done by the Academic Board, not the Vice-Chancellor. It was by academics themselves and it was to academics that compliance had to be reported. The Vice-Chancellor had, by changing the structure of the Academic Board, enabled change to be enabled by processes apparently driven by academics themselves rather than by her.

As with the previous parts of this story there were levels of discourse driving the open debate and challenges operating in the public forums of the university.

The Vice-Chancellor, most probably because in another university she had been Chair of an Academic Board, had a strong belief in academic authority. By restructuring the Academic Board and excluding the division representatives, the Vice-Chancellor was effectively reinforcing the tradition of what it means to be an academic. At the University of Australia, the intellectual and academic divide between academic and general staff had been effectively removed and replaced by a tradition of 'managerialism'. Teaching and learning had become to be seen as processes that needed to be managed. The new discourse was one that challenged this and suggested that the management should be by academics based on an older ideology of intellectualism (Hofstadter, 1963; Katchadourian, and Boli, 1985; Howley, et al., 1993), fundamentally embedded in the work of academics. It can be argued that the removing of division representatives from Academic Board re-

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[16] The Enterprise Bargaining Act (EBA) is an agreement between the National Tertiary Education Union and the University of Australia outlining the agreed initiatives between the parties to ensure the ongoing growth and viability of the university as well as provide improved employment conditions for staff of the university for the life of the Agreement.

established academic power, giving support to the notion that authority comes from knowledge, which implies power (Foucault, 1978).

Although academic authority was re-established in the university, the resistance to EducateMe International continued. The discourse underpinning this resistance of EducateMe International was essentially a continuation of the previous discourse identified in Chapters Four and Five, academic emancipation. Academics were still resentful that their authority to choose was being removed and that they no longer had a choice about teaching. Instead, all academic staff had to comply with the policy of teaching their units online. Academic choice in teaching and learning had been removed by policy. Academic staff wanted to maintain choice. They thus challenged in the open forums of the university, based essentially on a discourse of academic freedom and thus need to be emancipated from the discipline of policy compliance where it challenged their academic freedom.

This need for emancipation was in essence a reaction to the appearance in the university with the new Vice-Chancellor of managerial authority, or 'managerialism'. Rather than acting as an academic in an academic institution, the Vice-Chancellor adopted the role of manager/CEO in the University of Australia. By exploiting her role as Vice-Chancellor, the Vice-Chancellor was creating an authority vested in the leader. Not only did she reinforce academic authority, but as leader of the university, the Vice-Chancellor was also perceived to be able to influence the Academic Board. The Vice-Chancellor was decisive in continuing the discourse of discipline in the university and centralise the processes and systems as her predecessor had done also. Additionally, the Vice-Chancellor established processes which enabled the new discourse to drive the operations of the key forum which determined academic standards and policy, the Academic Board.

With policy comes compliance. Once a policy is enacted, it becomes a requirement to comply with that policy, at least in discourse. Of course people will challenge, people will re-contextualise and some will even reject policy, based on other discourses. But the hegemony of authority will ensure that policy compliance is widespread and it was at the University of Australia with the new enterprise-wide LMS. By enacting policy requiring all units to have at least a basic online presence in EducateMe International, the Academic Board, and thus the Vice-Chancellor, was

able to coerce academic staff into the system, through compliance procedures. Essentially, the process was one based on discipline, as non-compliance would result in having to provide an explanation to the Vice-Chancellor. Through the creation of policy, which brings this discourse to the front stage, the Vice-Chancellor was able to establish a legitimacy and hegemony for herself in the university, further enhancing her role as the manager or leader of the organisation and giving her power and control of the university.

Managerialism was the overarching discourse in this phase of the implementation of EducateMe International. It could be argued that the Vice-Chancellor, wanted to be a strong leader of the organisation, and this process gave her the opportunity to influence other aspects of the university. Through her influence, the Vice-Chancellor was able to reinforce the principles and authority of academics, who had apparently lost their authority under the previous administration. The support divisions were now responsible for providing support for academics in their teaching, research and administration work, and had no influence in the creation or institutionalisation of policy as had previously been the case. To further enhance her position, the Vice-Chancellor was able to enforce centralisation through discipline and ultimately remove academic choice from teaching and learning.

Chapters Four, Five and Six have discussed the story of the selection and implementation of an enterprise-wide LMS at the University of Australia. The use of social dramas has enabled the researcher to investigate the events in each phase of the selection and implementation process from the front stage, reporting obvious issues in systems implementation, and from the back stage, identifying the hidden aspects of systems implementation and the underpinning discourses. The next chapter will discuss the implications of this analysis for systems selection and implementation.

Chapter Seven – Discussion and Conclusion

7.1 Introduction

The methodological analogy of social dramas (Corbitt, 1995) was used in this thesis to discuss the obvious sets of events involving power and politics in the systems selection and implementation process. This chapter summarises that analysis and suggests that some dominant themes emerge which not only highlight the role of power in the systems selection and implementation process, but which also support the proposition, argued initially in Chapter 2. The actual technical implementation process is dependent as much on the organisational attributes and processes and their social construction in reality, as it is on the technical competencies of the software and the personnel undertaking the implementation and on the acceptance by users. The ensuing discussion is followed by an analysis of the discourse driving the organisational politics behind the systems selection and implementation process. To conclude the thesis the limitations of the study are discussed together with a discussion of the implications of the results for both practice and research and where future research might emerge as a result.

7.2 The construction of obvious power through discourse – the technology debate

In the front stage (Goffman, 1959) of systems selection and implementation the role of power relations are expressed either openly, or are enforced through rules, statutes and policies. Inevitably, the intent of this study is to establish the role of discipline (Foucault, 1977), in order to understand the power relations and the role of these power relations and politics in systems selection and implementation. Policy, rules, statutes and decisions reinforce the power status of the decision maker and attempt to subjugate the actors.

In the previous three chapters, a number of front stage issues have emerged, which are illustrative of the power exercised and maintained by various actors. As this case study is based on the higher education industry, the emerging issues relate to practices the actions and dramas associated with the systems selection and implementation process as within exemplified the university. The first of these

related to debate and policy about what technology platform would underpin the provision of IT infrastructure within the university (Chapter 4.3).

Driving this debate was the perceived need to control the technological infrastructure of the university. In Chapter 4.6, it was argued that the Vice President of Administration was trying to create efficiencies and gain cost savings through centralisation and standardisation of IT management. He was committed to the notion of a single operating system. In the implementation of this action, through a policy enacted within the university administration, there were consequences for the use of IT in teaching and learning. In the front stage dramas, acted out in the Academic Board, in Faculty Boards, in School Meetings and through global emails across the university, the policy was challenged and contested. The apparent power vested in the policy, and therefore in its agents also, the Vice-President of Administration and ITS, was believed to counter the power academics had always had to select appropriate pedagogies, materials and teaching tools for their courses and units. This new set of standards and its policy context removed that power. The academic community, contesting the policy, challenged the applicability of the policy to real practice. They alleged that the Vice-President of Administration and the implementing division, ITS, did not have the right to interfere in what was an academic matter only and demanded the removal of the policy.

The power vested in both individuals and policy was contested openly and over a lengthy period of time. Essentially, the contestations were not only a struggle about a system, but about efficiency and administration versus academic expertise and pedagogy. Whilst the policy was never altered from its beginnings in the mid 1990s, the academics recontextualised it (Corbitt, 1997). Each faculty had separate IT sections established within the faculty offices, and in some cases, in specific schools. These groups operated the required IT platforms and enabled the continuance of five separate learning management systems to operate for over four years. The intent of standardised operational and administrative practices within the university was accepted and complied with. However, each faculty recontextualised their own practices as it related to teaching and learning through having a faculty-wide standard adopted and subsequently operated at the faculty level. As a result the power vested in academic choice over what could/should be taught, how and why,

remained at the faculty level and was maintained at the level of each academic. The nature of teaching and learning in the university remained decentralised.

However, throughout the story the university administration was not content with leaving this level of power in the hands of individual academics, or at faculty level, as this challenged any real attempt to centralise and standardise. Challenging this centralisation and standardisation made compliance to Federal Government requirements more difficult for the university. The challenges also made accountability and comparative assessment between units and courses even more complex and difficult. The story told in this thesis recounts two separate further attempts by the university to invest power over teaching and learning in a central authority.

In the first attempt the university through an apparent independent appointee, decided to purchase an enterprise learning management system, QuickLearn. The new Deputy Vice-Chancellor was given responsibility to implement it across all faculties (Chapter 4.4). This too failed as there was no disciplinary structure in place to ensure compliance. Academic Staff and Deans were again able to recontextualise the decision and maintain their positions of power in relation to teaching and learning. It was only through the obvious enactment of policy through a restructured Academic Board under the new Vice-Chancellor some two years later that shifted power from the faculties and academic staff to centralise control, monitored for compliance through processes enacted in the Academic Board (Chapter 6.7).

All attempts to challenge this policy and its associated shift in power were thwarted by the disciplinary powers vested in the statutes of policy enacted publicly through Academic Board. Implementation of the new system was then driven by centralised control. Power was vested in people given responsibility to ensure the standardisation of process and structure for all units and courses. These were the Deputy Vice-Chancellor and Division of Teaching and Learning, reporting to that Deputy Vice-Chancellor. Despite contesting the policy on three occasions in Academic Board and despite challenging its impact through Union-led challenges to the Vice-Chancellor about workloads, the situation remained unchanged (Chapter 6.7).

In the front stage, these series of events looked like a debate over technology and the old 'Microsoft' versus everyone else debate. However there was a fundamental discourse driving this debate, the discourse of academic emancipation or freedom. The nature of a university is the promotion of intellectualism and freedom of choice (Manne, 1998; Gaita, 2004). Essentially, the academic staff were wanting to teach the way they wanted to, adopting an individualist approach, resisting the apparent direction by the Senior Executive to move teaching and learning by academic staff onto the one centralised system.

As Foucault (1978) and Ashforth and Mael (1998) argue, power relations occur where there is resistance between actors that have the ability to influence the actions of the other (Chapter 2.4). The discourse in this technological debate was a conflict driven on the one hand by the managerialism of the Senior Executive against the academic staffs' notions of academic freedom imbedded in a discourse of intellectualism (Chapters 5.6 and 6.9). With the enactment of the decision requiring academic staff to transfer to the central system, resistance occurred as their freedom of choice in teaching and learning was challenged (Chapters 4.5, 5.6 and 6.9). As was argued in Chapter 2.4, the utilisation of discourse enables members to challenge the existing power relations and in effect establish a new power relation. As raised in Chapter 2.8, Ball (1990) defines discourses as "what can be said, and thought, and also about who can speak, when, where and with what authority." The authority vested in being an academic had been challenged and resistance emerged. The academic staff contested this new form of authority, seemingly invested in the new learning management system.

The second attempt to select and implement an enterprise-wide learning management system was different. The process was accompanied by statute and policy enactment. The dramas were more vehement in their representation of opposition. Contestation reached academic and even industrial forums. The obvious challenges were about academic freedom, workloads and resistance to change. The discourse of discipline associated with the first enterprise-wide learning management system attempt was now supplemented, even surpassed in influence by managerialism. This transformation of discourses over time is not unusual. Westwood and Clegg (2003) claim that all discourses are in a constant state of change. This change reflects the new discourse of the new Vice-Chancellor. Change with new CEOs is common and

often reflects a changed set of values and subsequently new practices (Buchanan and Badham, 1999; Bacharach and Lawler, 1998; Introna, 1997).

This leads, as Foucault (1978) and Buchanan and Badham (1999) argue, to new expressions of power, through new discourse, which operate through the re-construction of existing social and organisational routines, and through targeting change in individuals and groups, in this case, the academic staff (Chapter 2.4). Enhancing the discourse of managerialism and discipline drove new policy formulation and reconstituted power through the formation of new social relations. As Corbitt (2000, p. 311) argued, policy is "influenced by pluralistic inequality associated with sectional interests, power and factions." The Vice-Chancellor, through the new Academic Board, was able to enact policy requiring academic staff to adopt EducateMe International. Through compliance associated with the policy, the use of EducateMe International became mandatory. Resistance and contestation again emerged. However, recontextualisation was not possible and the previously weak position of having no formal statute, as policy was now removed. Academics themselves had enacted the policy requiring use of the learning management system and requiring compliance. Hogwood and Gunn (1984) argue that policy is a method of legitimising power. In this example, policy was enacted to legitimise power vested in both the Vice-Chancellor and the Academic Board.

The academics in the university challenged the discourse of managerialism imposed through policy and directives to regain their emancipation from the control inherent in managerialism (Chapter 6.9). The academic staff wanted to be emancipated from the disciplinary power imposed by the managerialism of the Senior Executive and the Vice-Chancellor, in response to being forced onto one learning management system. In this case study, academic staff wanted to retain their academic authority, using their expertise in teaching and learning. They contested policy to regain control of choice in teaching and learning.

What became apparent was that similar discourse persisted throughout the system selection and implementation process, but acted out over different sets of issues in different social dramas. Academic staff used any opportunity to challenge the discourse of managerialism, which was the most consistent ideology influencing action across the university. Dramas were acted out over the selection and

implementation of QuickLearn, the selection and implementation of EducateMe International, over the requirement of academic staff to undergo training, the requirement to migrate existing systems to the new system, and in addition other issues affecting the university through this period, but not related to the implementation of EducateMe International, such as, strategic planning requirements, operational planning and target setting, budgeting, the review of all academic policies, evaluation of courses and units, and the internationalisation of the curriculum.

Power changed throughout this process. The new Vice-Chancellor recognised that in order to change university and its operation, in her words, to "achieve a quality agenda", then power relations needed to be different. It was apparent that the Vice-Chancellor perceived that there was a need to change the power vested in members of the University; that there was a need to formalise that change through policy and then build in compliance. This was achieved by the restructuring of the Academic Board giving academics academic authority. However, through the creation of the new Academic Board, power apparently shifted again from academics in schools and faculties to the central management of the university. In the first six months of the new Academic Board, eighty percent of the academic policies were changed and new ones such as the *Online Technologies in Courses and Units* policy added. The practice of managerialism though authority, statute, policy and compliance was put in place.

The transforming nature of power relations derives from Foucault's (1976; 1977; 1978; 1980; 1982) argument that power is non-static, fluid and exercised, rather than something that can be possessed by managers and those seeking power (Chapter 2.8). In this case study, power relations did shift through changes in leadership and the practice of control through policy. The new learning management system was being implemented technically throughout these changes. The stages inherent in a technical implementation were self evident (Chapter 6.4) but that process was being moulded by the changing dramas and the changes in power relations enacted in university forums. Any changes there directly changed what could be done with the learning management systems. The setting of the functionalities in the software related directly to the requirements of the policy and the associated requirements for

compliance. This in turn affected and was affected by another continuing set of dramas about pedagogy.

7.3 The construction of obvious power through discourse – the pedagogical debate

A debate emerged as a contest over praxis or practical application of pedagogy. This contest was based around direct interference with existing practice in teaching and learning. The contest reopened the debate about the relevance of technology to teaching and learning and its relevance to teaching both on and off-campus students. One of the early debates (Chapter 4.2) related to what members of the university argued about what type of university the University of Australia should be. Through the mergers that created the new university (Chapter 4.2), debate emerged about whether the target market was on or off-campus students. Confusion existed. There was no clear strategic plan. As a result, academic staff practiced teaching and learning independently, using any method they found useful. Academic staff had, through practice and a lack of direction, created and developed their academic authority.

In the selection and implementation of the first learning management system, QuickLearn (Chapter 4.3), debate emerged over what members of the university believed a learning management system should be. The power vested in academics through institutionalised practice was challenged. One system was not seen as being able to be used by everyone. The practice of differentiated pedagogies was threatened and existing power relations were being challenged. The failure of QuickLearn resulted from these attempted changes to power relations with standardisation and centralisation (Chapter 4.5). Academic staff resisted and challenged the inherent discourse of centralisation and standardisation in order to emancipate themselves from the requirement to teach in a pre-determined method. The ultimate failure of QuickLearn resulted from open challenges in Academic Board (Chapter 4.5). Publicly the praxis of the academic staff was supported and changes rejected. However, power relations were reconstituted. New systems were able to be evaluated and implemented, even to a limited extent. The extent of the changes to power relations was strong enough to enable the second attempt, a year later.

A further set of dramas occurred in the selection process of members for the Steering and Consultative Groups (Chapter 5.2) and in the dramas associated with the selection of EducateMe International (Chapter 5.3). Academic staff created the dramas again because their practice and academic authority were challenged. They argued that the real demand for a new system was not necessary. They also challenged any need for a single system across the university. The university had made its reputation of what it was already doing in teaching and learning. There was no obvious reason to change that. However, the committees were established and a selection process commenced. The academic staff had to recontextualise their practice and accept that power relations about teaching and learning had been, and were again changing. Power was now vested in the selection committee and those advising it (Chapter 5.3). The differentiated set of power relations existing within the university had been usurped by directive and placed, with the authority of the Senior Executive, in the Steering Committee.

This social construction of power was about something different. The issue that was debated was not the same. However, the discourse was similar. The management's objective to centralise and control practice and ensure standards were in place, challenged the pre-existing advocacy of academic freedom (Chapter 6.9). Power relations had changed because of an earlier set of dramas over a new learning management system. Power was now re-invested in the authority given to a new committee, composed of academics and support staff from Learning Services. Responsibility had changed. A group of staff were now responsible for a decision which would impact on all academics. Power was thus vested in a centralised group. That group had the responsibility to make a recommendation, based on the views of the university community. This expectancy to include all members of the community was a direct challenge to the differentiated practice in teaching and learning decision making of the existing university. Power relations through this process were drawn inwards, rather than outwards previously.

One other discourse influenced each of these sets of social dramas and framed the underlying discourse of managerialism. The discourse of standardisation, of having a singular set of universities, driven by managerialism, meant that the universities were required to comply with Federal Government policy. The discourse of accountability and responsible expenditure of public funds was the foundation of policy which

required standards of practice across universities, which subjugated them to compliance through quality audits and annual reporting. To meet these demands, it was therefore essential that the university itself complied through driving the same discourse through all practices within the university. Thus the notions of managerialism, vested in state policy, were translated into policy and compliance within the university.

Learning management systems are structured software technologies, which can be standardised and subjected to the influence of discourse. Power can then be transferred from the differentiated practices of an academic to the structures inherent in the learning management system. Power relations thus change. They move from the authority of the individual to the authority vested in the structures of the software (Winner, 1986; 1992). In this way, the social construction of power relations vested in discourse operating at an organisational level can directly affect the implementation of systems. In suggesting this, it is possible that such subjection can exist in organisations other than educational ones, and theory can emerge, which might frame further research in the future.

7.4 Theorising Systems Selection and Implementation

The findings demonstrate that contrary to the literature on systems selection and implementation, the systems selection and implementation process is invariably a complex process that is influenced by factors other than a particular implementation method or tool such as Soft Systems Methodologies (SSM), Structured Analysis, Design and Implementation of Information Systems (STRADIS), Structured Systems Analysis and Design Method (SSADM), Rational Unified Process (RUP), James Martin's RAD (JMRAD), or Effective Technical and Human Interaction of Computer-Based Systems (ETHICS). The story told in Chapters Four, Five and Six support this argument, especially that the systems selection and implementation process is essentially political and non-rational (Self, 1981; Mitev, 2001), being influenced by sectional interests, power and factions, often associated with specific stakeholders (Corbitt, 1997). This section brings together the post-structuralist theory of power relations into the information systems discipline, specifically exploring the role of power and politics in systems selection and implementation. This section concludes with a comparison of this study to that of the seminal work of Markus (1983), as introduced in Chapter 2.7.

A two-level understanding of systems selection and implementation merged from the case study. At one level, the systems selection and implementation process went through the process of, planning for the system, developing the requirements of the system, evaluating each system against the requirements, and selecting and implementing the system. This was a complex and iterative process, affected, even directed, by other levels of organisational influence (Figure 6.3). The implementation of the system was as much driven by the structures imposed on its use by the administration of the university as it was by the structural limitations of the software and the operating and infrastructure systems supporting it

The top level of influence was political where direction emerged through statute, policy and the demands of compliance, informed both by discourse and changing power relations. As argued in Chapter 2.4, the focus of previous research on systems implementation has been on the critical success factors involved with implementing a system (Ginzberg, 1981; Rockart, 1979; Delone and McLean, 1992; 2003; Somers and Nelson, 2001; Wilkin and Castleman, 2002; Shanks et al., 2003; Seddon, 1997) and the actual implementation process (Avison and Fitzgerald, 1995, 2003; Maddison, et al., 1983; Davis, 1974; Lucas, 1981, Hawryszkiewycz, 2001; Hoffer, et al., 1998; Lauden and Lauden, 1998). In this study that process was affirmed (Chapter 6.4). However, the nature and form of the system that emerged at the "Full Launch" stage of implementation (Figure 6.3) was fundamentally different from what was proposed in the requirements process. These differences were the inability to personalise the layout and look of the unit area and functionality was limited allowing some users to have a wider variety of tools and features available.

What is significant from this analysis is that the systems process can at the one time follow structured and semi-structured methodologies and at the same time be influenced and in fact changed by the complexities and sectional interest of organisational politics and ensuing struggles for power. This occurs to the extent that an apparently 'normal' systems implementation is at the obvious level a process comprising multiple stages and an iterative form but at the same time delivering content and internal structures which are reflective of social constructed power relations derived from debate over ideology and driven by discourse. The conflicting discourse of academic freedom and managerialism created a series of social dramas

over many issues which became the strongest influence on the nature and eventual use of the system itself.

The case study shows that the systems selection and implementation process transforms through the struggles for the exercise of power. This challenges the existing view of systems selection and implementation, that transforming processes are consistent with iteration. In the political realm of organisational power relations, complexity creates chaos. The attempted subjugation of staff is challenged by those actors as a means of political emancipation from control. This search for emancipation by the academic staff was ultimately to enforce structural change in the system itself as management imposed structural parameters on the system which, in effect, restricted its use by academic staff. The selection and implementation of the new enterprise-wide learning management system spanned two and a half years. This time period saw a number of changes and shifts in leadership, resistance and challenges within discourse. This transforming nature of power and politics and the complexity that results in systems selection and implementation is not identified in the systems implementation literature.

This apparent level of influence over the system itself is also couched in lessons learned by the organisation through its history of enterprise-wide selecting and implementing learning management systems. For example, there was a difference in the effectiveness of the implementation between the original enterprise-wide learning management system, QuickLearn, and the new learning management system, EducateMe International. In the original implementation, there was no policy requiring users to adopt QuickLearn as the then Vice-Chancellor, although interested in providing standardisation across the university, was not driven by a discourse of managerialism. He was driving a discourse of intellectualism, of academic freedom, as a means to improve the research output of the university. Whether users adopted QuickLearn or kept using their current system was not enforced, or required. In the case of the selection and implementation of EducateMe International, the new Vice-Chancellor did not believe that standardisation and centralisation would occur without policy. Ultimately, EducateMe International had policy requiring all academic staff to comply with and have a basic online presence for their units. The case study has supported an argument by Parr, et al., (1999), Duchessi, et al., (1989), Somers and Nelson (2001), Akkermans and van Helden (2002), Poon and Wagner

(2001) Averweg and Erwin (1999), Hartman and Ashrafi (2002), and Teo and Ang (1999) that the system would not be used across the university had it not been driven from the top.

The story of the selection and implementation process of the enterprise-wide learning management system at the University of Australia also challenges the accepted view that systems implementation is a linear process, and that in order to "successfully" implement a system, certain steps need to be followed. These steps need to be completed in a linear manner. In other words, we cannot proceed to the next step until the current step has been completed, and that the appropriate outputs have been produced (Nickerson, 2001; Avison and Fitzgerald, 1995, 2003; Maddison, et al., 1983; Davis, 1974; Lucas, 1981, Hawryszkiewycz, 2001; Hoffer, et al., 1998; Lauden and Lauden, 1998). Rather, this study supports the argument by Nguyen (2000), that the implementation process does not follow this linear method because of the nature of systems implementation and one of the most important elements of systems implementation, the people.

Much of the contestation and debate in the social dramas is reflective at the obvious level to the existence of resistance. Ashforth and Mael (1998), McKenna (1994), Krovi (1993), and Markus (1983) have argued that change is closely related to resistance. What was experienced during the selection and implementation of EducateMe International was implemented, was in essence, resistance. However, this resistance was only the obvious aspect of the emerging power relations in the organisation. This resistance reflected a deeper discourse over challenges to the discourse of academic authority and intellectualism. Foucault (1978) suggests that power emerges where there is resistance. However, it is not through the front stage issues of power that are of interest, it is through the emerging discourse that the role of power and politics influence the systems selection and implementation process. This case study has highlighted the impact that this can have. However like all case studies the extent to which this level of theorising can be universally applied has to be questioned.

As discussed in Chapter 2.7, Markus (1983) used a case study to explore the initiation, design process, design content, installation and use of a financial

information system in Golden Triangle Corporation[17], a large manufacturing firm. Data was collected via interviews with over 30 designers and users of the system and was supplemented by documentary evidence about the system and organisation. The implementation of the financial information system spanned 15 years (Markus (1983, p. 433-434). In this case study, data was collected in 20 interviews, supplemented by documentary evidence, project plans and available minutes of meetings. This project lasted seven years.

One difference between the two studies occurs in the epistemological and ontological approaches taken. Whilst Markus' (1983) study can be seen as either a positivist or interpretive approach (Lee, 1989; Walsham, 1993; Lee, et al., 2000), this study adopted a critical approach in order to understand change, not only from the perspective adopted by Markus, but also to understand it within social and economic circumstances, constrained by various forms of social, cultural and political domination.

The conceptualisation for the financial information system, implemented at Golden Triangle Corporation, began in 1971 by the corporate accounting department. Task forces were created to evaluate the need for the financial information system and identify the costs and benefits of the proposed system. In 1972, software was purchased from a software vendor. The purchased software mirrored current practices within the organisation. However, the task force decided to modify the software in order to make use of modern database management techniques. This process took two and a half years and centralised the databases at Golden Triangle Corporation. Information was not solicited from divisional accountants until 1974, when it was time to set up the database, but during this time the divisions were invited to attend presentations outlining the benefits of the system. The implementation process took a phase-in approach. The largest division volunteered to trial the financial information system in 1975. That same year, the accountants complained that the system had not been beneficial and technical recommendations to change the system were made and implemented. Subsequently, further divisions began using the system because, there was a hidden inducement to participate, those that held off from using the system had to provide the same information as the new system, but they had to do it manually.

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[17] The pseudonym used by Markus (1983) to provide anonymity to the organisation in her study.

The university in this case study decided to build on the use of five different learning management systems already in use in the university and adopt a standard system across the whole university. Two attempts were made two years apart. Implementation of the first system was focused partly in two sections of the university only and that adoption was not universal. Use created significant dissatisfaction and another attempt to find an acceptable and useable learning management system was undertaken. In this case implementation was supported formally with policy and with a senior executive responsible. Implementation was in-parallel with existing systems for a 12 month period before fully adoption of the system across the university. Resistance still was evident in the second attempt but there was a hegemony of acceptance of the new systems because the requirements to adopt was build into formal policy compliance.

The background to each story of the selection and implementation process is similar in that a system was selected and implemented through directives from a higher authority. Resistance was common in both cases as end-users did not want to adopt the new system, as they were familiar and happy using existing practices. The use of the financial information system was publicised as being voluntary. However, pressure was placed on users that did not adopt the new system, as non-compliance meant that users had to do their work manually. In the adoption of the learning management system, non-compliance required the explanation to the Academic Board and the Vice-Chancellor.

Cognitive differences between resistors and non-resistors at Golden Triangle Corporation derived from status and functional locations within the firm's hierarchy and division of labour (Markus, 1983, p. 436). In the case study of the learning management system, there were no cognitive differences between resistors and non-resistors in terms of status and functional location. However, throughout this process there were changes amongst resistors and non-resistors relating more to political allegiance than status or functional location. In addition, it became clearly apparent that the compliance requirements of policy impacted on who were resistors and non-resistors and the extent to which they were active.

Markus (1983) showed that technical issues arose during the implementation process. For example, the database management system chosen for this application did not work well with the computer's operating system, and there was insufficient main storage to meet the applications requirements, meaning frequent downtime and late reports. In the case of EducateMe International, there were minor problems with the software provided and the technological infrastructure of the university. Software upgrades were provided regularly and funding was allocated in order to upgrade the technological infrastructure of the university.

Markus identified that the political context of the financial information systems was important. Markus (1983, p. 436-437) reported that intra-organisational politics and power dynamics developed between corporate and division accountants. In conjunction with the politics and power dynamics, organisational restructuring occurred during the implementation process. Corporate accountants felt the divisions were lying to them. This impacted on the success of the implementation. In this study of the learning management system, the political context was also important. By using a critical methodology, a more in-depth understanding of the process was enabled. The political context, in this case leadership, specifically determined the actual functionality of the learning management system and influenced the adoption of the system, through compliance. In contrast to Markus (1983), this study analysed discourse that affected implementation. This showed that although there was the obvious resistance of the learning management system, it was not due to the cognitive or attitude differences of members in the organisation. Rather, resistance was driven by contestation over ideology. Differences existed about why change and a new system was needed and about the extent and validity of its imposition in relation to compliance. This discourse analysis suggests that power directly impacts on implementation through disciplinary action through the acquisition and holding of knowledge and subsequently through subjugation of the resistors. This discourse analysis also highlighted that even at the organisation level, systems are subject to the political influence of the State through discourse.

In terms of practice, Markus (1983, p. 437-438) made three suggestions. Markus argued that for successful implementation, there was a need to change the people inside the organisation. Markus (1983, p. 437) argued that if some acceptors were moved into positions occupied by resistors, resistance amongst the divisional

accounts would diminish or vanish. In this study of the learning management system, the resistors were directly brought into the selection and implementation process. They played an active and significant role throughout the process. In the end, after twelve months of full implementation, all demands of the policy are in place. All units in the university are taught in the learning management system and there have been two rounds of compliance reporting. Despite this, there is still resistance. The political context has been subtly defused but not rendered inactive. Resistance is still driven by pre-existing discourse. In this case, the resistance diminished but not because they were replaced, but rather because their influence became an integral part of the implementation process. Rather than being marginalised, a process of inclusiveness of the resistors ensured that their political influence was diminished (Cf. Danziger, 1971; 1976). There was perceived to be no need in this learning management system case study to change the people inside the organisation.

The second suggestion made by Markus (1983, p. 437-438) was the requirement to fix technical problems in the information system. Resistors were included in the technical evaluation task force, making recommendations to fix any technical issues. These technical solutions were implemented, which improved the efficiency of the system. However, resistance to the financial information system did not disappear. In the study of the learning management system, there was a perceived need to fix technical issues. Weekly meetings reviewed performance and users were involved. Technical performance of the learning management system improved dramatically, but similarly to the Markus case study, resistance did not completely disappear.

The third suggestion made by Markus (1983, p. 438) was in relation to organisational politics. In the financial information system case study, lower hierarchical divisions noticed that information flow was focused in the corporate accountant division and as a result, they had more power. The financial information system project team specifically excluded any representative who might voice objections to its design details. The divisional accountants felt that they had lost control and were unhappy. Nothing had changed as a result. Markus therefore suggested that by even replacing a few key actors, resistance would not be eliminated. In the case study of the learning management system, resistors were explicitly included in the selection and implementation process to voice their opinion. The organisational politics of

resistance, in itself, was ineffective, due to their inclusion. However, what is different in this study is that it shows that when the politics of Senior Executives in the organisation and the power vested in them are used as subtle weapons to enforce compliance then no level of organisational politics can sustain any effective action. The requirements of compliance forced even the most intransigent resistor to comply as the apparent holder of the power over the learning management system policy was the Academic Board, which comprised only of members of academic staff.

In addition, this study has shown that resistance itself is not related necessarily to the organisational politics imbedded in a particular issue. The organisational politics at a much more organisation-wide level, for example, industrial relations, can be influential. In this case study, it was rather the power vested in policy compliance to the Academic Board rather than organisational politics, which determined the effectiveness of the system implementation.

Through the use of interaction theory, Markus (1983, p. 438-440) found that the difficulty of using the financial information system was only a secondary complaint. It was the proposed changes to the way managerial accounting would be done that was the real issue, one that no amount of technical fixing would solve. Furthermore, this issue was one of potential loss of power for divisional managerial accountants. In this case, Markus has focused on the obvious expression of power and control. If a critical approach had been used, then a deeper understanding of what the discourse was that was driving this perceived loss of power, associated with the managerial accounting, would have emerged.

In this case study of the learning management system, the obvious contests were concerned with perceived limitations imposed on pedagogy and the appropriateness of the technology chosen to sustain the mission of the organisation. By understanding discourse, the real reasons for contest and debate about the selection and implementation of the new learning management system became evident. On the one hand, there was debate driven by the contest between the ideology of intellectual freedom and a counter-ideology of managerialism. On the other hand, there was the clash between an ideology which protects the intellectual freedom of individuals in universities and the imposition of an ideology of standardisation by the state. As Ball (1990) had shown with the United Kingdom in the 1980's, where there is a contest

concerning ideology at the organisational level and ideology at the state level, contestation is a natural consequence and in fact, the ultimate result, if the power of the state is sustained, is the recontextualisation of practice at the organisational level. After twelve months of implementation of the learning management system, it is not yet possible to ascertain if that recontextualisation has occurred. However, what is clear is that after twelve months, resistance is still vocal to the extent that the policy driving the structure of the learning management system was challenged for the third time in the Academic Board in November 2004. Again, there was no change. However, the challenging discourse persists.

The Markus (1983) paper is a structured, perhaps limited view of systems implementation. The epistemology inherent in positivism seeks out only the obvious. Using a critical methodology seeks out the hidden and unspoken and the discourse, which identifies who can say what to who and how. Discourse exposes threats to the political emancipation of individuals in organisations. Understanding discourse enables the researcher to discover the richness of the complexities involved with the system selection and implementation process. This study uncovered an understanding of systems implementation, which suggests that the obvious processes evident in the taxonomy of stages is, on the one hand, determined by the requirements of the information technology artefact, but on the other hand, is bounded by the control and power vested in organisational management, informed by discourse, historically created either externally to or internally in the organisation.

The implementation of the learning management system shows that power is more diffuse and non-systematic than Markus had argued. It can be argued that the systems implementation process is people-influenced rather than people-determined as Markus (1983) claimed. Determinism suggests that power exists as some quantifiable whole and is ingrained and objective. Power in reality is subjective. It is, and is becoming, rather than exists unmoved or unchanged. Power changes and is changed. It forms and reforms as the context in which it is created or displayed and is recontextualised by the actors operating within it. This is determined by the sequence of discourse. As discourse emerges socially, power is enacted by subterfuge, containment, disruption, challenge and radical action. This study has shown, that power is enforced through challenge rather than hierarchy or organisational structure, as Markus (1983) suggested.

This research improves our epistemological understanding of the role of power in systems implementation and engages the reader and researcher in appreciating the richness and complexity of the role of power and power relationships. The Markus (1983) research was a landmark in IS publishing and remains so. This research has highlighted the de-contextualisation of current systems design and implementation methodologies and tools, noting that power fundamentally impacts on systems implementation and drives organisational attitudes towards systems acceptance.

7.6 Implications for practice

The outcomes of this study have identified some implications for practice, where the current research can provide a better understanding of the human issues involved, specifically the power and politics in system selection and implementation. It should be noted however, that the outcomes of this study are not to provide a solution to the power and politics involved in systems implementation, but to recognise their important role in selecting and implementing a system.

It can be argued that the enactment of policy influences the probability of successful implementation, but this research adds to this understanding. Previous research has focused on the influence of the CEO or project champion as a leader (Thong, et al., 1996; Thong and Yap, 1996; Thong, 1999). This research has shown that that same person can also have a direct affect in determining not only action, but also content of the system through the exercise of power and the games of politics. In this case, leadership has been enhanced by management and by manipulation that is natural in organisations.

This follows that there is an apparent de-contextualisation of systems implementation models created by the strict use of process models and critical success factors as identified in this study. As identified in Chapter 2.3, there is little reliance on one particular system implementation process model (Fitzgerald, et al., 1999). Practitioners need not feel restricted by the formality of process models. Rather, they should embrace and modify various applicable process models to the current system implementation. Different system implementations will require different process models for the implementation. There is no such thing as a 'one process model fits

all' as different system implementation projects have different contexts and ultimately require different implementation models, including a combination of appropriate models. Practitioners need to be made aware of the inherent division between the various systems implementation models and the issue of leadership addressed above.

As identified by authors such as Kling (1980), Markus (1983), Krovi (1993), Ashforth and Mael (1998) and Buchanen and Badham (1999), resistance to the adoption of a new system is the key contributor to struggles for the exercise of power and potentially a reason for system failure. The enactment of policy forces users to adopt the new system, eliminating their choice from using another system, or resisting the system altogether. In other words, this research informs members of systems implementation projects that to ensure the system is utilised in an organisation, then policy needs to be enacted, requiring all users to adopt that particular system.

Another lesson learned from the case exemplar is to involve as many people as possible, including the variety of end users, in the selection and implementation process. This lesson could be incorporated into the requirements gathering process, as all members of the organisation should be given the opportunity to have their input into what they required in the new system. As members are given the chance to provide their requirements, they feel that they are being listened to and feel that they contributed to the selection process. As a result, the overall buy-in of the new system will increase because they felt that they had input into this systems implementation process. Furthermore, by involving as many resistors of the new system as possible, there is an opportunity to turn their negativity and resistance into a positive aspect of the implementation process. By having the most vocal opponents of a new system, they are able to argue and convey their negativities during the selection and implementation process, ensuring that the best system is selected that even the resistors would support. These resistors could then turn into the strong supporters of the new system.

7.7 Limitations of the study

As in all studies, this study has limitations, which alter the outcomes. The case study methodology used in this research has been questioned in regards to the

generalisability of the results (Yin, 1994; Borg and Gall, 1989; Denscombe, 1998). Only one organisation was investigated, which makes the result context-specific. What might have occurred in this organisation may not apply in another. However, as has been argued in this thesis, system selection and implementation studies have usually dismissed or ignored the role of power, politics and discourse in the implementation process. This case study highlights the impact power, politics and discourse might have and suggests that they are potentially relevant in other organisations. Furthermore, the objective of qualitative research, and indeed case studies (Chapter 3.4), is not to generalise to populations, but to generate theory, which can be tested, by positivist researchers in future studies, or provide confirmatory evidence of existing theory (Creswell, 1994; Yin, 1994; Lincoln and Guba, 1985; Stake, 2000).

As a result of not being able to use ethnography as a participant-observer, much of the data has possibly missed some of the richness that could have been gained. To combat issues of validity, other activities were undertaken to increases the validity and reliability of the study (Lincoln and Guba, 1985). This included a prolonged engagement of two years in the organisation to learn the 'culture', test for misinformation introduced by distortions, either by the researcher of the members and to build trust. Additionally, two member checks were performed (Chapter 3.7). This was done to at least address, to some extent, the limitations of the politics of truth (Kvale, 1996).

A further limitation of this study was in not being able to interview everyone related to the selection and implementation of both QuickLearn and EducateMe International. Reasons for this were out of the control of the researcher as the selection and implementation process of the original system started in 1998. The process is now six years further on since that and some members of the University of Australia had either retired or resigned, taking positions elsewhere. However, to ensure the richness and validity of the story, seventeen members of the selection and implementation team were interviewed, which enabled a consistent story to be told.

One final limitation of this study is the bias that not only the researcher brings into the story, but also the bias of each member interviewed. Kvale (1996, p. 286) argued that interpersonal interaction in the interview may have a decisive impact on the

results. The researcher acknowledges that bias did occur in members recounting the story of the selection and implementation process of EducateMe International. The researcher also acknowledges that some of those members interviewed recounted their versions of the story with selectivity. It is common in organisational interviews to expect that some details of stories are either deliberately or accidentally deleted in the telling. However, Chapter 3.7 highlighted issues of validity, reliability and credibility, to try and minimise the potential bias. Furthermore, the recollection of the selection and implementation process as told in Chapters 4, 5 and 6, is the researcher's narrative of the events that occurred in this process. It is the researcher's interpretation of the story as told by the members interviewed.

Although particular limitations were identified, I have argued here that these have not affected the accurate portrayal of the power and politics involved with systems implementation.

7.8 Future Research

In terms of future research, the obvious aspect of taking this research further is to take my research and observe the power and politics involved with different systems implementation projects in other Universities and in industry. This will enable the researcher to further explore the theory more with reference to other case studies. It is expected that similar results to those developed in the current research, that the selection and implementation process is a complex process influenced by social agents, that that it is the role of power and politics, through discourse and the enactment of policy that drives the selection and implementation process.

This study could also be used to generate a set of hypothesis, which can then be tested quantitatively via surveys sent out to a large number of organisations. By utilising a quantitative approach, a greater number of organisations can be approached. Having a large number of organisations involved in the study would then increase the generalisability of the results.

This study explored the role of power and politics in system selection and implementation. The current study could be extended to investigate the role of power and politics in other phases of systems implementation. These phases include the requirements engineering phase, system design, negotiations with stakeholders, and

post-implementation. Research into these phases of systems implementation enables the identification of discourses emerging in that phase. Research into the other phases of systems implementation also provides greater detail, bringing a deeper, rich understanding of the social issues of power and politics in each phase.

The final potential area for future research is to explore the role of discourse in systems selection and implementation. Little research has explored discourse in information systems and therefore, there is little understanding of the role and impact of discourse in information systems research. However, we know from management systems that discourse plays a role in the way organisations operate. It is believed that we need to understand this in information systems. This study has highlighted that discourse does clearly inform process. We need to know more to enrich our understanding.

7.9 Conclusion

The central concern of this study has been to identify the role of power and politics in systems implementation. A non-structuralist view of power as both an obvious and hidden concept has provided the researcher a lens through which I can observe the selection and implementation of an enterprise-wide learning management system. The framework aimed to identify the obvious process of system selection implementation, and then deconstruct that process to expose the hegemonic nature of policy, the reproduction of organisational culture, the emancipation within discourse, and the nature of resistance and power relations. A post-structuralist, critical case study of the selection and implementation of an enterprise-wide learning management system at the University of Australia was presented and analysed using social dramas to distinguish between the front stage issues of power and the hidden discourses underpinning the front stage dramas.

The key findings from this study have indicated that the system selection and implementation works at two levels. The low level is the selection and implementation process, which operates for the period of the project. The high level is the arena of power and politics, which runs simultaneously to the selection and implementation process. Challenges for power are acted out in the front stage, or public forums between various actors. The social dramas, as they have been described here, are superfluous to the discourse underpinning the front stage. It is the

discourse that remains the same throughout the system selection and implementation process, but it is through various social dramas that reflect those discourses. Furthermore, the enactment of policy legitimises power and establishes the discourse, limiting resistance. Additionally, this research has identified the role of the "State" and its influence at the organisational level, which had been previously suggested in education literature (Ball, 1990).

Politics in the systems implementation process involves changing power relations. These power relations are created through the use of discourse. Discourse represents meaning and social relationships, forming both subjectivity and power relations. Discourses are also the practices of talk, text and argument that continuously form that which actors speak. The challenge to discourse typically emerges as resistance to the new system. Members of an organisation oppose change and will attempt to resist the new system by a series of social dramas. It is the recognition of the human factors and more importantly the rich view of power and politics in system selection implementation, which is needed to improve the systems implementation process.

The current literature on systems implementation methodologies and tools are structuralist and miss the important rich human factors involved and driving the implementation process. This structuralist approach de-contextualises system selection and implementation failing to recognise that each organisation, each implementation is set in a different context. What may occur in one implementation may be altered in other implementation. The current study acknowledges that the systems implementation methodologies and tools will change for each implementation, but the driving force is through the power and politics. It is through these challenges to power relations via resistance that power relations, and the implementation process get recontextualised. By acknowledging the post-structuralist view of system selection and implementation, we can now provide a deeper understanding of the system selection and implementation process.

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Appendix A – Interview Schedule

Can you please tell me how the University of Australia came about implementing EducateMe International?

From your point of view, who were the key players?

In your opinion, what do you think motivated the key players to operate in the way they did?

In your opinion, what obstacles do you think these key players faced in their attempt for achievement in implementing EducateMe International?

What type of role did you play in the systems implementation?

Were there any obstacles in your way, in your position during the implementation of EducateMe International?

What were some of the political plays that occurred in the implementation of EducateMe International? Who was involved? What happened? How was it resolved?

On reflection, how could it have been done better/differently?

Appendix B – Supporting Publications

Nguyen, L., Torlina, L., Peszynski, K. J., and Corbitt, B. (2005). Power Relations in Cyber Communities. To appear in *Electronic Commerce Research Journal, 5*(4).

Corbitt, B. J., Peszynski, K. J., & Boon, O. (2005). Managing Complexity and Institutionalization: Power and Politics in ERP Implementation in an Australian University. In L. von Hellens, S. Nielsen & J. Beekhuyzen (Eds.), *Qualitative Case Studies on Implementation of Enterprise Wide Systems* (pp. 160-175). Hershey, PA: Idea Group Publishing.

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