A Sheffield Hallam University thesis

An Exploration of the Post-Acquisition Information Systems Development Environment

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Declaration

1. I hereby declare I have not been enrolled for another award of the University, or other academic or professional organisation, whilst undertaking my research degree.

2. None of the material contained in this thesis has been used in any other submission for an academic award.

3. I am aware of and understand the University's policy on plagiarism and certify that this thesis is my own work. The use of all published or other sources of material consulted have been properly and fully acknowledged.

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Abstract

This work is a qualitative study which explores the post-acquisition Information Systems development environment of three organisations from the automotive industry and the study is unique on several levels. Firstly, the undertaking from the theoretical perspective of neo-empiricism following the general inductive approach, secondly, the methodological approach of case study and finally, the application in the automotive industry.

Although limited to a single sector and focussing upon core operating Information Systems, the finding of this work add to the body of existing knowledge whilst providing real-world value which can be applied across industries and sectors.

Literature has, for over three decades, claimed the importance of Information Systems in the achievement of organisational merger and acquisition success. Studies to date claim up to 70% of all mergers and acquisitions are deemed failures and given the high levels of global merger and acquisition activity, which is forecast to continue, the factors, identified in this study, critical for success will support practitioners.

The study highlights the need for organisations to learn about each other in order to identify the most suitable Information Systems future strategy and the process is an iterative one long after the acquisition has been accomplished, where previous studies have not taken place. The empirical research themes have explored the relationships between acquiring and acquired organisations specifically considering the mutual expectations, the levels of participation and support provision. It also examines the implications for strategic independence and organisational autonomy post-acquisition by seeking out examples of rationalisation and collaboration.

The research does not claim a *'one best way'* for future implementation to resolve Information Systems dilemmas post-acquisition. Rather the work has uncovered the need to treat each new acquisition as unique due to the myriad of complex and historical variables that this study has identified. These are not purely technical and possess social dimensions which can be interpreted in different ways by the individuals who are involved.

It has been identified that, for the automotive sector, critical factors for consideration include; whether both the acquiring and acquired organisations are from the same industry, their size and production volume disparity, the nature of the cultural environment for which the Information Systems resource was originally developed and product complexity differences.

The undertaking of this research, from the alternative theoretical perspective of neo-empiricism, has further endorsed the validity of previous research. Themes identified from literature have been found to continue to be relevant today, although this research has enhanced them with the identification of new categories. Categories, which will also support practitioners in their analysis and understanding of this phenomenon at all stages from pre-acquisition, whilst undertaking acquisition and at any stage post-acquisition.

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Chapter 1: Introduction

1.1 Research Purpose

The purpose of this research is to gain a better understanding of the phenomena that is the Information Systems development environment following acquisition. This better understanding will further inform practicing managers in light of the increasing levels of global merger and acquisition activity, where it is claimed that managing Information Systems integration is difficult and could be a reason for significant levels of post-acquisition divestment.

By taking an alternative theoretical perspective to previous research, that of neo-empiricism, collecting and analysing qualitative data via semi-structured interviews following the general inductive approach, the research will also add to the body of existing literature. In addition, this work is set in the context of three case study organisations from the automotive industry which has, to date, not been studied and each case is at a different period of time post-acquisition.

1.2 Rationale

This section sets out why this research should be undertaken, its context and scope. Merger and acquisition activity is at a high and is forecasted to continue rising because of its ability to reduce risk in evermore competitive global business markets and Information Systems are deemed to be a critical part of whether business mergers and acquisitions are failures or success stories (Kanter et al 2007; Busquets 2015; Toppenberg et al 2015; Lohrke, Frownfelter-Lohrke and Ketchen 2016). It has been argued (Dalcher and Drevin 2003; Sarrazin and West 2011) that this is due to the difficulties endured when attempting to integrate systems post-acquisition. Any new knowledge and understanding which can support management decision making in the future will be valuable, especially as around two-thirds of Information Systems projects are deemed failures (Dalcher and Drevin 2003; McManus and Wood-Harper 2007; Henningsson and Carlsson 2011).

The automotive sector provides many examples of merger and acquisition activity over the past generation with a significant number of them failing to achieve success and several leading to divestment. Examples include; Fords acquisition of Jaguar, Volvo, Land Rover and Aston Martin where all have led to failure and divestment, as did BMWs takeover of Rover Group and General Motors of Fiat and Saab not to mention the failure of the Daimler (Mercedes-Benz) and Chrysler of America. As such, this sector, which has not previously been the subject of significant research in Information Systems terms, is suitable for exploration in order to make a contribution to both knowledge and management decision making. In addition, the review of literature (chapter two) also states the need for future research to take place at a different point in time to previous studies which are criticised for taking place either pre-acquisition/merger or straight after the new organisation had formed (Dalcher and Drevin 2003; Bhatt and Troutt 2005; Kappos and Rivard 2008; Alaranta and Mathiassen 2014). It was claimed a study which takes place at a much longer point in time post-acquisition or merger, as this study undertakes, would make a valuable contribution (Bhatt and Troutt 2005; Henningsson, Yetton and Wynne 2018).

Real-life examples of acquisition failure and success within the automotive sector are provided demonstrating both the need for the context of this research and that there exist examples of good and poor practice to be explored. Finally, my personal experiences and pre-understanding are provided demonstrating my interest in this area of research.

As stated, researchers concur that around two-thirds of all Information Systems projects are deemed to be failures and that the problems are global (Dalcher and Drevin 2003; Bhatt and Troutt 2005; Kappos and Rivard 2008; Alaranta and Mathiassen 2014). Dalcher and Drevin (2003) refer to the billions of US Dollars lost each year due to Information Systems failure, with a third of projects cancelled and over half being late, over budget and lacking crucial functionality.

These findings are supported by Lyytinen and Hirschheim (1987) where failures were found to relate to; requirements not being met, process failures where

projects run over time and over budget, poor systems performance leading to interaction failures resulting in the misuse or lack of use of systems.

Supporting this position, McManus and Wood-Harper (2007) two decades later claim only one in eight Information Systems projects are completed 'truly successfully' which is not surprising when they define failure in broad terms as not meeting budget, time and or quality requirements. Research estimated that in 2004, Information Systems project failures in the European Union alone amounted to €142 billion (McManus and Wood-Harper 2007). McManus and Wood-Harper (2007) also claimed that we are more aware of the importance of understanding why projects fail, however, we are still not getting to the underlying reasons and the development environment is not well understood.

As such, it can be argued that the application of quantitative methods aligned to the positivist paradigm has not yielded sufficient knowledge and learning to reduce these rates of failure (Dalcher and Drevin 2003; McManus and Wood-Harper 2007; Henningsson and Carlsson 2011). It is possible that the lack of a research undertaking from an alternative theoretical perspective has been because, still today, Information Systems research is thought of from a technical, rather than an organisation or social perspective and the principle of objectivity has remained at its centre (Hirschheim 1989).

The Information Systems community is concerned with the position of Knowledge and its creation from what they feel is an increasingly irrelevant position and an increasing number of researchers cite the need for a change in methodological approach, recognising the subjective nature of the interpretations of those involved as they acknowledge Information Systems are not only technical in nature but are also social (Hirschheim 1989; Bhatt et al 2005; Kappos and Rivard 2008; Alaranta and Mathiassen 2014).

Although separated in Information Systems research, the acceptance of means of operation (the technical) and the interaction of people (the social) has been studied since the post-war years and become known as socio-technical systems. In order to attain both a greater understanding of the phenomena as well as the '*best fit*'

between the social (organisation) and technical (systems) components which make up the operating environment, avoiding sub-optimisation, that is weaker than anticipated improvements in efficiency and effectiveness, there needs to be a more interpretivist approach to research in this field (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Daft 2016). Whilst moving away from positivism, this study, via the theoretical perspective of neo-empiricism, maintains many of the tenants of positivism whilst supporting the application of qualitative methodologies and methods (Johnson et al 2006; Machery 2006). This is discussed in chapter three.

Baxter and Sommerville (2011) also acknowledge that changes to core operations systems, for example systems which support design and manufacturing, which are the focus of this thesis, will, as well as, having a knock-on effect for other supporting systems, hold significant implications for the socio-technical relationships within the organisation. It is these implications which this study explores at different points post-acquisition.

The benefit of undertaking studies at different points in time post-acquisition, is that it will be possible to explore the true effects of the Information Systems (technical) upon the people (social) as the socio-technical characteristics of Information Systems may not be as designed or originally intended due to emergent characteristics or properties of Information Systems. These characteristics may only become apparent once the components of the system are brought together and are operational (Baxter and Sommerville 2011; Daft 2016). This is also a factor where existing systems are implemented in a new environment, for example following acquisition (Tanriverdi and Uysal 2015).

PricewaterhouseCoopers (2008) state that Information Systems integration is the most difficult aspect of post-acquisition phase' with 75% of organisations experiencing serious problems. This finding is also supported with the 2006 North American survey claiming 66% of 500 organisational mergers/acquisitions experiencing major difficulties with Information Systems integration. This is despite of writers, in the 1990s arguing for the importance of careful planning of Information Systems integration if mergers and acquisitions are to work (McKiernan

and Merali 1995; Giacomazzi et al 1997; Robbins and Stylianou 1999). However, Alaranta and Henningsson (2008), Henningsson, Yetton and Wynne (2018) claim that the research areas of both Information Systems integration and planning brought about by merger or acquisition is at best sparse and tends to focus more upon issues such as the technology and governance structure.

This is further supported by Williamson (2008) whose study found that over 4000 mergers had taken place in less than a year claiming between one and two thirds lost value even ending in divestment. This was also supported by Violano (cited in McKiernan P and Merali (1995)) as far back as 1990 who suggested that 80% of mergers can end up destroying corporate value and Henningsson and Carlsson (2011) cite examples of European takeovers where it has taken more than ten years for the organisations to gain the benefits which they set out to realise with specific regards to Information Systems functional integration. As such, research studies which take place much longer post-acquisition will be of benefit in aiding the understanding of this phenomena (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

In addition, 45% of expected business and operational gains, which are the major reason for mergers and acquisitions are seen to be dependent upon successful Information Systems integration or development (Rogers 2005). Sarrazin and West (2011) endorse these figures claiming Information Systems Integration is the major stumbling block to successful integration, especially with increasing reliance of upon the Internet and the value of information being essential for the successful integration of merging or acquiring organisations. What constitutes 'success', however, can be open to interpretation (Wijnhoven et al 2006; Mehta and Hirschheim 2007).

In each study, due to the complexity when attempting systems and functional integration the merging or the development of Information Systems was cited as a major reason for merger failure or poorer than expected value gains. The problem is further exacerbated by the fact that today organisational processes and operations are fundamentally underpinned by Information Systems.

Again, as far back as 1990, Haspeslagh and Jemison (1990) stated that the understanding of the post-acquisition or merger of Information Systems development environment requires much consideration, than is given in current studies as the integration phase takes a minimum of two to five years for organisations of any real size or where systems and the culture are well entrenched. As such, studies which take place five or more years post-acquisition/merger can offer significant new knowledge and contribution (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011). This is because there are few rules which set out the Information Systems integration process and future state of the Information Systems development environment as each acquisition/merger is different, even where the intention is just domain strengthening or to *'make them like us',* this may lead to failure or at least a reduction in value creation (Baker and Neiderman 2014).

Having established the complexity of Information Systems integration post-merger or acquisition, as well as the potential for it to destroy corporate value, it is the intention of this research to establish whether this has been the case in the automotive manufacturing sector. A sector which has experienced high levels of global merger and acquisition activity over the past three decades, which has resulted in failure and divestment. Examples include; Fords acquisition of Jaguar, Volvo, Land Rover and Aston Martin where all have led to failure and divestment, as did BMWs takeover of Rover Group and General Motors of Fiat and Saab not to mention the failure of the Daimler (Mercedes-Benz) and Chrysler of America.

In contrast, some mergers and acquisitions within the sector have worked and have created high levels of value and growths. One such example is the VW Group, which having taken over Audi, Seat, Skoda, Bentley, Lamborghini and Bugatti, is on target to become the largest global automotive manufacturer by the end of the decade having taken over.

If, as the research states, PwC (2008) Williamson (2008), the Information Systems function and its integration post-acquisition is a key component to the creation or destruction of value, then understanding what decisions and actions successful

organisations have taken will provide valuable insight for practitioners who are either planning, experiencing or evaluating merger/acquisition activity. This research examines the approaches taken by three case study organisations which have achieved acquisition success based upon their longevity, business expansion and organisational value growth.

The research has been inspired by the culmination of over two decades of working in the field of Information Systems both as a practitioner and academic. This has been in a period where Information Systems development became a major part of strategic realisation as systems became evermore integrated both vertically and horizontally (Bhatt and Troutt 2005; Kappos and Rivard 2008). However, many projects were deemed failures; either in total or in part for the reasons set out earlier in this section.

During my time in practice I and colleagues formed opinions as to why this was the case and considered that failures were broadly down to a range of completing factors which combine together, including; technical difficulties, unrealistic expectations, inappropriate time frames, the rapidly developing pace of technical capabilities and a range of organisational behavioural issues such as a lack of viewing Information Systems as having social relevance as they underpin operational processes and ways of working (Buchanan and Huczynski 2008; Baxter and Sommerville 2014; Daft 2016).

During this time we, were subjected to changing management practices, beliefs and 'flavour of the month' tactics such as Business Process Reengineering, Total Quality Management, Six Sigma, outsourcing followed by reversal adding to the complexity of the Information Systems development environment.

Based upon this experience, the purpose of this research is to create an understanding of the Information Systems development environment phenomena from the perspective of those involved in order to inform both knowledge and practice. This understanding will add value to the body of existing research where, to date, often the claim of success or otherwise are down to the opinions and view-

points of those involved and it is these different views that will be explored, hence the need to take an alternative theoretical approach to the research process.

1.3   Research Aims

Having set out the purpose of this research is to gain a better understanding of the phenomena that is the Information Systems development environment following acquisition and having established the rationale for its undertaking, the following five research aims have been identified:

1.   To further inform practitioners in light of the increasing acquisition activity

Set against the context of increasing global merger and acquisition activity, the contribution of this work is both valid and timely as new knowledge, which aids the understanding of factors critical to acquisition success, such as Information Systems, will also enhance management decision making (Raice 2015; Thompson Reuters 2017). The level of Information Systems challenges which are created from organisational activities such as merger or acquisition is large and complex and the level of merger and acquisition failure has not reduced over time (Lyytinen and Hirschheim 1987; Dalcher and Drevin 2003; McManus and Wood-Harper 2007: Henningsson and Carlsson 2011).

Increasingly business, organisational and political uncertainty is driving activity and it is set to continue to be a major part of business renewal, growth and survival (Kanter et al 2007; Busquets 2015; Toppenberg et al 2015; Lohrke, Frownfelter-Lohrke and Ketchen 2016). As such this research will enhances manager's ability to successfully achieve Information Systems harmony by identifying key factors, which are agreed to be major factors in merger and acquisition success and failure (King et al 2004; Sarrazin and West 2011; Alaranta and Mathiassen 2014).

2.   To add to the acquisition body of literature

Henningsson, Yetton and Wynne (2018) state there is a need for Information Systems research in relation to merger and acquisition activity and the current state of published literature is still very sparse and fragmented across both authors and

theories, which is not helping to promote management practice. In addition, there are few consistently used frameworks (Henningsson, Yetton and Wynne 2018). For example, the review of literature has not identified any such consistently applied frameworks or models, other than the model of Haspeslagh and Jamieson (1990), which, itself has only been subsequently used by Wijnhoven et al (2006) and Baker and Neiderman (2014), even then the model was adapted. As such the purpose of this work is to contribute to the body of writing and provides a context as yet not investigated and reported upon. The analysis of data collected will also be supported by the application of this existing framework, which will also test its continued relevance.

3. Take an alternative methodological approach to enhance the qualitative contribution

The methodology also adds a further dynamic which has enabled a greater perspective in order to identify answers to the 'how' and 'why' questions (explanatory reasons) often posed but, until recently, have not been addressed by research for use by practicing professionals (Henningsson, Yetton and Wynne 2018). The approach being taken is new to this topic area however, it is an evolutionary move from positivism to neo-empiricism so as to encourage previous researchers to engage with and compare the findings. It is also a transferable approach, providing a unique position within the body of existing literature (Hirschheim 1989; Bhatt et al 2005; Kappos and Rivard 2008; Alaranta and Mathiassen 2014). Hirschheim (1989) Bhatt et al (2005) Kappos and Rivard (2008) and Alaranta and Mathiassen (2014) state the need for Information Systems research to be pursued from an alternative theoretical perspective, as Information Systems are not only technical in nature but are also social and around 85-90% of management research in this area, is from the positivistic approach. As such, a qualitative perspective needs to be added.

4. Not to refute existing research but to enhance research

The application of this alternative approach means that a further aim of this work is not to refute the work and findings of other researchers, rather to add to the body

of knowledge already in existence whilst providing professional practicing mangers with practical learning and knowledge which will enhance their organisational decision making in respect of the implications of acquisition activities upon the Information Systems development environment.

5. **Undertaking research in a new environment at different stages post-acquisition, testing previously identified forms of Information Systems relationships establishing whether Information Systems relations are static or dynamic over-time and what are the driving factors**

The work is also the first to focus specifically upon the UK automotive sector and is the first to be conducted at significantly longer periods of time post-acquisition as suggested by a series of authors (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011). This will enable the identification of where forms of acquisition relationship for example; absorption, preservation, symbiotic and holding, Haspeslagh and Jamieson (1990) are indeed static or dynamic over time post-acquisition and whether driving factors are industry specific or otherwise.

In order to address the aims of this research the following six research questions have been derived:

1. What is the nature of the post-acquisition organisational relationship between parent and subsidiary companies?
2. What are the levels of expectations by both parties in terms of benefits, improvements and developments?
3. To what extent are the strategic capabilities of the organisation's Information Systems embedded within the corporate culture, values and what has been the impact upon strategic independence and organisational autonomy?
4. How are subsidiaries involved in the process of developing new Information Systems environments, to what extent does the acquiring parent organisation get to know the them and where does decision making power rest?

5. How willing are acquiring organisations to provide resources necessary to foster an atmosphere suitable to support any transfer of resources or capabilities where transfer is the way forward and whether this is politically influenced?

6. To what extent systems developments have reduced duplication and increased information sharing across traditional organisational boundaries in the pursuit of greater efficiency and effectiveness?

1.4   The Research Methods

In order to conduct the empirical research and collection of data necessary to achieve the aims and answer the research question derived from the rationale, this research takes the alternative theoretical perspective of neo-empiricism employing the case study methodology to three different organisations (Eckstein 1975; Lijphart 1975; Yin 2014). In addition, the researching of multiple (three) cases with different variables and circumstances will make for more compelling and robust findings to support practitioners and add to the existing body of work (Herriott and Firestone 1983; Eilbert and Lafronza 2005; Hanna 2005). Some of the key organisational differences include; size, volume of production, product complexity and, more critically the different periods of time which have elapsed since acquisition.

Data is collected through the conducting of semi-structured interviews with long-serving senior managers and directors who are responsible for Information Systems provision within their respective organisations, which is then analysed in accordance with the general inductive approach, Thomas (2006) where, following a process of transcript coding, distillation results in the formation of categories that can be considered in relation to the themes identified from literature.

1.5 Chapter Summary and Thesis Overview

Chapter ONE

This chapter has set out the parameters and the rationale of this work considering the aims, scope and contextual setting of the research with referenced support underpinning both the need for and the contribution this work will create. Pre-understanding and personal interest are explained as is the need for the taking of an alternative methodological approach to the gathering and analysing of data.

Chapter TWO

The review of literature, driven by the identification of the research questions, provides a synopsis of the relevant Information Systems research to date and the key challenges affecting the phenomena are explored. Alternative approaches to Information Systems environmental development are explained along with coverage of the prevalent factors affecting the acquiring and acquired organisational relationships. The review of literature also provides examples of the application of theoretical frameworks in the Information Systems arena. The review of literature further informed the six research questions and the design of the research methods, data collection and analysis.

Chapter THREE

Having gained from literature the position and purpose of the research as well as culminating in the development of a conceptual framework of themes, chapter three sets out the process by which the work will be undertaken. There is a consideration of current approaches to qualitative research and Information Systems research in particular, demonstrating the need for an alternative approach, theoretical perspective (neo-empiricism) and resultant methodology (case study) and methods (semi-structured interviews). In addition, the data collection and analysis strategy is set out following the general inductive approach and practical and ethical considerations are acknowledged prior to considering the selection of both case organisations and the participants to be included in the data collection process. In addition there is an explanation of the approach to the analysis of the data collected following the general inductive approach of data cleansing, coding,

categorising and theme emergence. Examples of each stage are provided in this chapter. Each theme is then considered in turn.

Chapters FOUR, FIVE and SIX

Chapters four, five and six provide the analysis of the research material gathered from the three participating organisations. Each chapter takes a separate organisation and considers the data collected demonstrating how the categories have been identified and or enhanced following the conducting of semi-structured interviews. As each case is analysed comparisons are made with each other as well as to existing literature.

Chapter SEVEN

Following on from the analysis of the research material set out in the three previous chapters, the final chapter brings together the discussion of the research in the form of a cross-case analysis on two levels: Firstly, the cross-case analysis forms a discussion in relation to the conceptual framework themes identified and secondly, in relation to the application of the theoretical model Haspeslagh and Jamieson (1990). The chapter then considers, in conjunction with the purpose and aims of this research, as set out earlier in this chapter, the contribution this thesis makes to both theoretical knowledge and management praxis which informs potential future research possibilities. Finally I provide my personal reflections.

Chapter 2:   Literature Review

2.1   Introduction

Informed by the research aims, this chapter provides an exploration of the Information Systems discourse to date and the current position of research, in respect of merger and acquisition behaviour. The purpose of this is to develop a conceptual framework which will guide the research design.

As stated in the introduction chapter around two thirds or more mergers or acquisitions are deemed failures in terms of the levels of value creation they achieve and it is often cited that the Information Systems function is a key component of that failure (Lyytinen and Hirschheim 1987; Dalcher and Drevin 2003; Rogers 2005; McManus and Wood-Harper 2007; Sarrazin and West 2011). Research to date also shows that often this claim of success or failure will be down to the opinions and view-points of different stakeholder groups and it is these different views which will be explored in more detail in this thesis (Wijnhoven et al 2006; Mehta and Hirschheim 2007).

Having reviewed literature to date, it will be argued that there is a need to take an alternative approach to researching the role played by the Information Systems development environment post-merger or acquisition which will enable the gaining of an understanding of how those involved make sense and form their own opinions about what practices lead to Information Systems projects and their development environments being successful following merger or acquisition (Wijnhoven et al 2006; Mehta and Hirschheim 2007).

This chapter commences with a consideration of Information Systems integrations success post-acquisition and provides a summary of the position of Information Systems research. A range of challenges which confront the Information Systems development environments are identified which includes the levels to which organisations prepare for Information Systems integration pre and post-acquisition, the increasing requirements for systems to span traditional organisational boundaries which is a factor leading to resistance of change. The cultural impact

and socio-technical nature of Information Systems are explored and a range of issues and approaches to integrating Information Systems development environments before a summary of research to date considers the application and augmentation of theoretical frameworks. Finally conclusions are drawn from the literature and informed research questions are derived to form a conceptual model which will structure the empirical research.

2.2   Information Systems Success

Literature produced over the past three or more decades consistently finds that the majority of Information Systems projects post-acquisition fail and this can be down to the resultant development environment (McKiernan and Merali 1995; Giacomazzi et al 1997; Robbins and Stylianou 1999; Dalcher and Drevin 2003; Rogers 2005; McManus and Wood-Harper 2007; Sarrazin and West 2011). But what actually constitutes failure? The more tangible and reported examples of project failure refer to late delivery or financial overruns and there are examples of catastrophic failure, where a project is simply abandoned. But there are degrees of failure where most commonly the projects are implemented but remain unused or used only in part because they may not meet user/sponsor needs once implemented.

The research shows the reasons for Information Systems project failures are well researched and multi-faceted, with studies focussing upon aspects of the development environment which include; inadequate consideration of project management needs (Nelson 2007), unsuitable levels of training or staff experience (Laudon and Laudon 2015), a lack of user participation and inappropriate methodologies for project structuring (Hughes, Dwivedi, Rana and Simintiras 2016), project size, complexity and organisation-enterprise fit (Strong and Volkoff 2010) and escalation of commitment (Chakrvorty, Dulaney and Franza 2016). In addition, the literature also identified that studies have researched the implications of culture leading to user resistance reducing the success of Information Systems development to add value (Klaus and Blanton 2010).

Studies have taken place in a number of different operating environments. For example; the Healthcare (Heeks 2006; Baghizadeh, Cecez-Kecmanovic and Schlagwein 2019), Air Transportation (Lane, Eleyan and Snaith 2019), Small and Medium-sized Enterprises (Devos, Van Landeghem and Deschoolmeester 2008) and Mass-Production (Hughes, Dwivedi, Rana and Simintiras 2016). As such, it was necessary to identify a new and specific focus for the work and this has been provided by opportunities created in the automotive and component manufacturing sector.

2.3 The Information Systems Development Environment and Research

The Information Systems community is concerned with the position of Knowledge and its creation from what they feel is an increasingly irrelevant position (Hirschheim 1989; Bhatt et al 2005; Kappos and Rivard 2008; Alaranta and Mathiassen 2014). This position has been held for several decades and the major issue is felt to be directly related to what is considered to be valid research and an increasing number of researchers have identify the growing need for a change in methodological approach, recognising the subjective nature of the interpretations of those involved. Hirschheim (1989) Bhatt et al (2005) Kappos and Rivard (2008) and Alaranta and Mathiassen (2014) claim there is a need for Information Systems research to be pursued from an alternative ontological and epistemological perspective as Information Systems are not only technical in nature but are also social. The social aspect of Information Systems is covered later in this chapter. As with around 85-90% of management research in this area, research is from the positivistic position and researches quote the need for a qualitative perspective to be added. However, to date, this is not generally appearing in the published journals and as so provides the justification for this study which has been undertaken from a neo-empiricist theoretical perspective. Neo-empiricism acknowledges the subjectivity of the interpretations of those involved whilst maintaining the tenant of positivism that is its objective stance through a reliance upon a theory neutral objective language without the need to identify causality

(Johnson 2006; Machery 2006). As such this alternative theoretical perspective is a logical first move away from positivism as it enables the subjectivity of personal interpretations to be explored whilst not moving existing Information Systems research practice too far from its current position potentially alienating the existing Information Systems research community.

Information Systems epistemology draws heavily from the social sciences as they are fundamentally social rather than technical systems (Hirschheim 1989).

Hirschheim (1989) continues and criticises the acquisition of knowledge about the Information Systems domain as it is invariable gained via the methods of the positivistic paradigm which are constrained by the laws of empiricism and repeatability which are not necessarily appropriate due to the individualistic characteristics of each situation, human and organisational nature of Information Systems, that is each case will be subject to differing variables and factors. This will be returned to in chapter three. Given the acceptance of people's perceptions or interpretations of a phenomenon may be different, the principle of repeatability can be considered irrelevant. As such a post-positivistic or neo-empiricism approach should be considered in the pursuit of knowledge in such a contingent domain as Information Systems are not purely technical in nature but also social (Payne 1976).

The subjective nature of the social and technical components of Information Systems supports Hirschheim's (1989) position with reference to the increasing irrelevance of the need for repeatability as part of Information Systems research is also supported by the comments of Alaranta and Mathiassen (2014) who suggest that any attempt to provide a guide or supporting framework for Information Systems integration post-merger or acquisition could be futile due to the diversity of variables concerned.

As far back as 1990 Haspeslagh and Jemison (1990) stated the understanding of the post-acquisition or merger Information Systems development environment requires much more consideration than current studies. This is because their research identified that the organisational integration process takes a minimum of two to five years for organisations of any real size or where systems and the culture is well

entrenched, the organisational activities have particularly long lead times for example high demands upon research and development and long product life-cycles, especially where the level of intended integration is large scale.

A further consideration is the progress of Information Technologies which support organisation Information Systems as these will also change over time, potentially significantly during the development of the new Information Systems development environment leading to the development of a very different environment to that which was expected, anticipated or even desired (Haspeslagh and Jemison 1990).

Presently, studies conducted have taken place either at the time of acquisition or merger or soon after. As such studies which take place five or more years post-acquisition/merger can offer significant new knowledge and contribution and so this exploration which takes place at differing points in time post-acquisition will contribute to the current body of research and management practice as are few rules which set out the Information Systems integration process and future state of the development environment as each acquisition/merger is different. (Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008).

This is also true even where the acquisition or merger purpose is domain strengthening where user resistance can still be high (Klaus and Blanton 2010; Strong and Volkoff 2010) Often, because of this, the approach to *'make them like us'* leads to failure or at least a reduction in value creation and so the integration process may be a lighter touch or a more unique situation. Either way it will require a great deal of post-acquisition/merger discussion and negotiation over a prolonged period of time. (Haspeslagh and Jemison 1990).

As such the Information Systems academic community has for a long time been united in their calls for an alternative and longer-term approach to be taken to further the research and understanding of the increasingly complex phenomena of the Information Systems development environment. Shearer et al (2004) Wijnhoven et al (2006) Mehta and Hirschheim (2007) and Alaranta and Henningsson (2008) agree that there is an opportunity for research to change the way management think about Information Systems integration in mergers and

acquisitions, Too often it is only considered when the deal is done. This study takes up that opportunity by exploring post-acquisition Information Systems development environments at different points in time and through the application of the neo-empiricist theoretical perspective (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007 and Alaranta and Henningsson 2008).

Currently, research provides some frameworks for evaluating integration success (Alaranta 2005), assessing technological integration decisions (Mehta and Hirschheim 2007), integration alignment (Wijnhoven et al 2006) and ERP implementation with regards to merger activity (Alaranta 2005). However, the research is regularly limited to a single theoretical perspective or one managerial aspect of integration when other literature, for example Carlsson, Henningsson, Hrastinski and Keller (2010) and Henningsson and Carlsson (2011) suggests there are as many as five themes all converging in integration activities; synergistic potential, organisational integration, systems ecology, integration architecture and systems integration role. This suggests that approaches to date possess an inability to provide a holistic framework to gauge Information Systems integration success or failure. In contrast, the purpose of this exploration is to attain a more holistic perspective from those involved whilst not assuming there will be solution for Information Systems integration that is repeatable post-acquisition or merger.

Henningsson and Carlsson (2011. P442) referring to Information Systems research trends claim that researching integration is '*similar to hunting for a running target as both businesses and technology/systems constantly evolve.*' They refer to the effects of globalisation and the financial crisis which has created a climate where business increasingly need to merge, acquire others or even divest in order to create efficiencies and economies which are again all reliant on, or hold implications for Information Systems due to the ever increasing part they play in both automating and informating business processes. Given the increasing levels of merger and acquisition of the past decade, which it is suggested may increase further, new knowledge about the Information Systems development environment and which supports the process of Information Systems integration will be of value to management practice and decision making.

In their recent paper, however Henningsson, Yetton and Wynne (2018) claim that Information Systems research in relation to merger and acquisition activity is very much fragmented across both authors and theories and there are few consistently used frameworks. This has resulted in studies focussing upon methods of implementation which are invariably practice led as opposed to being theory driven. As such many studies are *a-theoretical* and tend to report only empirical findings which do not support management decision making as the research has not explored, unlike this work, the more subjective aspects of the organisation's context and situational variables from the perspective of those involved in the process.

Henningsson et al (2018) also note only one author has consistently published in this arena [Yetton] and this factor is likely to have been a contributor to the level of fragmentation in the literature. In addition, more recent research has attempted to look for explanatory reasons for success or otherwise in comparison to much of the earlier literature which was explorative in focus. In the last decade Information Systems research has tended to distinguish between different types of merger or acquisition transactions. Some of the more notable works include; Seddon et al (2010) where the focus is upon the merger of equals, horizontal acquisitions Du (2015) serial acquirers by Henningsson and Yetton (2011), Henningsson (2015), Henningsson and Kettinger (2016). As such this research, which focuses upon acquisitions by organisations who are not of equal size and from the automotive sector, which has not been studied previously, will make an original contribution.

Henningsson et al (2018) also cite that research which attempts to explore problems or is challenge centred, this is research looking to explore the reasons behind Information Systems failures or successes, is also considered to be fragmented with different authors focussing upon different aspects. For example, the merging of different systems functions is considered by Alaranta and Martela (2012). Again the contribution, both theoretical and practical, of this research study is focussed upon gaining insight into the problems and challenges associated with Information Systems development environments post-acquisition.

In the following section a number of documented challenges within the Information Systems development environment which have become historically entrenched are explored. Such challenges may be included in the creation of a conceptual model to be evaluated in the empirical research phase of this study and will enable new findings to be compared with previous studies.

2.4   The Challenges Confronting the Information Systems Development Environment

The Information Systems development environment has received more attention in recent years from researchers, based upon a promise to enhance relevant research, to better understand the implications of Information Systems and their use in practice (Livari 2007; Henningsson 2010). Henningsson, Yetton and Wynne (2018) assessed the position of Information Systems research and reported it to be fragmented and somewhat inconsistent and that little of the research had been acted upon. Their view supported that of Gregor and Jones (2007) who, a decade earlier, stated that Information Systems research has been mainly conducted as an act to provide Information Systems developers (not users) with a means to create Information Systems for 'problem fields' (Gregor and Jones 2007). As such the research supports the technical aspects of Information Systems in the development phase of their life-cycle, but has not adequately addressed the social aspects of systems, as discussed earlier, where they spend the majority of their life-cycle (Gregor and Jones 2007).

The Information Systems development environment is created either consciously or subconsciously by the contributing organisations or parties involved, whether they be internal or third party providers (Hughes and Wood-Harper 2000). As such this may be a contributing part of the development and maintaining of the relationships between the parent, subsidiaries and any other participants with particular reference to the levels of participation. Hughes and Wood-Harper (2000) consider the level of reported Information Systems projects which are labelled as failures, either in full or in part and challenge the prevalent viewpoint that Information Systems development is rational and technical in nature and that common practices

(methodologies etc.) and standards such as documentation, lead to consistency in success. With up to seven out of ten projects failing to meet their objectives of which a similar proportion have reportedly followed a structured waterfall approach, Hughes and Wood-Harper (2000) take the view point of those directly involved and state that the continued following of industry accepted or 'good' methods to achieve good results is failing organisations Information Systems projects.

Where organisations have merged or undergone acquisition, this situation can be further exacerbated as development and implementation teams with differing levels of expertise, preferences for the following of different approaches/methodologies, electing to tailored approaches or apply them inconsistently have to work together (Yeo 2002). Still today the failure rates of Information Systems projects are higher than that of other high level Information Technology projects with failure rates of between 50% and 65% per annum (Florentine 2017). Although the agile nature of Information Systems development means developments are rarely working on consistent systems projects where they could improve success rates (Florentine 2017).

These factors are considered to be critical and evidence of them will be sort in the empirical case studies of this thesis to identify whether the research supports, or otherwise, the viewpoint around methodological application etc. with reference to projects and development/implementation success or failure in order to provide a more robust best practice approach (Hughes and Wood-Harper 2000; Yeo 2002).

Hughes and Wood-Harper (2000) identified that practitioner involvement in Information Systems development terminated after the analysis phases and initial ground work was completed. That is, there was a technical solution completed which was evaluated by managers of the department concerned. Practitioners would be again involved if management felt the initial solution was unsuitable on the grounds of cost, skill sets and risk, not organisational fit or user suitability (Hughes and Wood-Harper 2000). Thus practitioners were viewed as a technical resource and users were seen to be only involved once a solution was already in development through focus/steering groups and not at the start of the projects.

Although user involvement was viewed as important, little reference to their feedback was made as management felt good group balance was hard to achieve although there is no reference to what would constitute a 'good' group. Any involvement of users was dependent upon the importance attached to the actual project, again there is no reference about how this worked in practice (Hughes and Wood-Harper 2000).

Hughes and Wood-Harper (2000) note developer comments that they found it difficult engaging with Information Systems users in the early stages of developments (requirement elicitation) due to their inability to specify what they want (even when they do few can articulate this) or to understand what technology can achieve. However, no specific instances were expanded upon. The process was reported to be prone to error, time consuming and not worth undertaking. Developers felt this phase should be left to them alone and user groups should be only be involved once a working system was available to demonstrate and discuss final changes. This division between developers and users of Information Systems was identified a decade earlier by Lawrence, Shah and Golder (1994) and was still being reported to hinder the process of system development almost a decade later (He and King 2008). As part of the primary research, respondent's opinions as to the continued existence of this divide and its effects upon the parent-subsidiary relationship will be sort.

Jayaratna (1994); Fitzgerald (1998) also identified the divide between developers and users of Information Systems and claimed the relationship between the two parties went deeper for developers where few even wished to learn more about users work or processes and those who do attempt to cross the divide were viewed with suspicion within the community and that this position had become culturally entrenched (Jayaratna 1994; Fitzgerald 1998).

The challenges of methodological adherence cultural affiliations/divides between developers and users are cited by other researcher who expand the reasons for the lack of success of Information Systems projects. Chang (2000) Swan (1994) Tan and Lung (1994) Savolainen (1997) and Davies (1997) all claim inappropriate methodologies act as barriers to successful implementation and reduce the systems

benefits. The rigid adherence allied to the cultural divide between developers and users means that poor implementation or integration is often caused through the lack of acknowledgement that such changes require management and a change in working practices or in the way management make decisions due to new information which becomes available. This again underlines the social nature of Information Systems and the need for developers and users to work more closely at all phases (Gregor and Jones 2007).

Chang (2000) also cited the implication of high levels of labour turnover which lead to a reduction both in terms of relevant skills, but more importantly knowledge of the organisations, its processes (ways of working) and systems. This is also supported earlier by Gillinwater (1987) and Bessant and Buckingham (1993). This is an important factor for this research as the case study organisations have all undergone acquisition as a key criteria for inclusion and employee turnover, particularly at management level rises, potentially significantly, post-acquisition (Krug 2003; Siegel and Simons 2008; Carriquiry 2018).

The following section considers the literature relating to the growing concern of Information Systems crossing or spanning new boundaries as the level of organisational mergers and acquisitions grows. It identifies the need for acquiring organisations to learn more about their new subsidiaries, assess their Information Systems needs and ability/readiness for any intended changes in order to reduce potential resistance.

2.5 Socio-Technical Research

The acceptance of means of operation (the technical) and the interaction of people (the social) has been studied since the post-war years and become known as socio-technical systems. Early studies were conducted in the mining industry following mechanisation (Trist and Bamforth 1951). The principle, then as now, was to attain the '*best fit*' between the social and technical components that make up the operating environment. However, Trist (1951), cited in Buchanan and Huczynski

(2008) argued that effective socio-technical systems design could never satisfy the needs of both sub-systems (technical and social) hence sub-optimisation was a consequence.

There have been previous studies in the assembly and production industries, Walker and Guest (1952) and were focussed upon the interaction of people and machinery and more recently research with specific interest of the effects of Information Technology based Information Systems.

Socio-technical systems in organisational development terms is an approach to complex organisational work design which recognises the interactions between people and technology in the workplace. Technology as a term does not exclusively refer to machinery but also to systems and processes of work. The aim is balance technical performance excellence and quality in the working lives of those who interact with the technology referred to as joint optimisation Buchanan and Huczynski (2008).

Baxter and Sommerville (2011) researched the socio-technical relationship in the Information Systems arena where the hardware and software are the technical and the people and their individual characteristics, personal perceptions, values and culture are the social. The properties, components and behaviours of Information Systems are inextricably intermingled which means the relationship between the technical and social elements are very complex, particularly in large organisations and it is the daily interaction of these components where there is a lack of understanding (Baxter and Sommerville 2011).

As such, decisions relating to an organisation's Information Systems strategy which may be taken by a new acquiring organisation can have an immeasurable impact those working in that acquired development environment and the individual perceptions of the affect will likely be different (Baxter and Sommerville 2011). Decisions which create an impact upon on acquired Information Systems development environment may not be direct. For example Baxter and Sommerville (2011) refer to a change made to an organisation's business level strategy post-acquisition will lead to changes of business processes, application systems,

communications and information management, operating systems and equipment which they refer to as the Information Systems engineering environment (or stack) that could lead to a miss-fitting environment and conflict.

Baxter and Sommerville (2011) also acknowledge that changes to core operations systems, for example systems which support design and manufacturing, which are the focus of this thesis, will have a knock-on effect for other systems such as those which support procurement, logistics and finance.

The socio-technical characteristics of Information Systems may not be as designed or intended (Baxter and Sommerville (2011). This is because there are emergent characteristics or properties of Information Systems which only become apparent once the components of the system are brought together and it is operational. This means such characteristics that affect those working as part of the systems may be working with unintended consequences and this will not be known until much later post-implementation. This supports the needs for a research study longer post-merger or acquisition which this research provides.

Also where existing systems are implemented in a new environment, for example post-acquisition, they do not always work the same way. This would be a potential implication of the *'rip and replace'* strategy where a system is designed and operationalised in one environment is simply used to replace systems in a different operating environment Tanriverdi and Uysal (2015 p147). For example an Information System designed to support a mass-manufacturing environment where the product possess low levels of complexity may not be successful in a much lower volume environment where the product's complexity is greater. Whether or not any Information System change is deemed to be successful, in terms of supporting users and generating outputs in pursuit of organisational objectives, or otherwise is dependent upon the interpretations of those stakeholders involved (Baxter and Sommerville 2011).

Daft (2016) considers the increasing level of technology which organisations are implementing and states there is a need to better understand the relationship between technology, Information Systems and the role and requirements of people

who are also part of that system which underpins organisational processes in pursuit of joint optimisation. Joint optimisation being the efficient combining of human resources and technologies such as Information Systems in order to achieve productivity.

Daft (2016) concurs with Sommerville (2011) about the constitution of social and technical elements of a system and that the imposition of new technologies, that is Information Systems, post-acquisition will have intended and potentially unintended consequences for the social nature of work and so the levels of joint optimisation which again will not be known until after the systems are operationalised and is subject to the perceptions and interpretations of those involved (Daft 2016). This will also be affected by the levels to which those concerned have been consulted or involved in the process of deciding upon systems change, new systems design as well as the process by which new systems implementation takes place (Daft 2016).

The relationship between the social and technical elements of a system and the levels of joint optimisation achieved are affected by Information System change. In the industry in which this research takes place a significant driver for merger and acquisition activity is the pursuit of greater efficiency. This is referred to as lean production and there exists a negative consequence between the needs of lean production and socio-technical systems relationships (Koukoulaki 2014; Daft 2016).

2.6   Information Systems Spanning Boundaries and Resistance

Boundary spanning is an important area of relevance to the research. It is a term used to refer to Information Systems which connect or are shared by two or more organisations. Even if the parent organisation and subsidiary consider themselves to be internal [that is they consider themselves to be a single organisational entity] and there is to be no third party provider as part of the Information Systems projects, there will still be boundaries to be spanned which provide opportunities for change and so potential employee resistance reducing organisational performance and value (Levina and Vaast 2005; Lindgren, Andersson and

Henfridsson 2008; Yao, Dresner and Palmer 2009). Understanding the organisational relationships from the perspective of those involved may provide an insight into how boundary spanning is possible with reduced resistance and better performance (Levina and Vaast 2005; Lindgren, Andersson and Henfridsson 2008; Yao, Dresner and Palmer 2009).

Levina and Vaast (2005) and Andersson and Henfridsson (2008) refer to the systems complexity, resistance and the need for more holistic learning as part of Information Systems implementation. As organisations grow, organically or externally, systems changes become larger and, as with ERP systems (Enterprise Resource Planning), boundary spanning whether it be cross functional (horizontal) or more recently cross organisational with suppliers, customers and other partners. The implication is that systems developers and users need to understand the workings and needs of others whom they have not traditionally felt the need to. This holds implications for the organisations taking part in this research as post-acquisition parent and subsidiary organisations will undergo boundary spanning system changes (Sumi and Tsuruoka 2002; Yoo, Lyytinen and Heo 2007; Vieru and Rivard 2015). This process is not a purely technical exercise and the organisational learning requirements demonstrates again the need to acknowledge the social aspects of Information Systems (Sumi and Tsuruoka 2002; Yoo, Lyytinen and Heo 2007; Vieru and Rivard 2015).

Examples of organisations which have succeeded in effectively engaging their members in practices which allow them to span boundaries of diverse settings include NASA and GE and they claim this has greatly enhanced their commercial activities, however the processes they followed were not elaborated upon (Carlile 2004; Cross and Parker 2004).

Levina and Vaast (2005) and Lyytinen and Heo (2007) point to a further difficulty. If you are attempting to implement boundary spanning systems, it is essential to not only know what people do in reality, but also what they aspire to do now and in the future and neither of these two requirements can be gained from secondary data sources, such as job descriptions and appraisals etc. However, in this research the focus of Information Systems which are included relate to those which underpin

core business activities. As such understanding the future Information Systems needs is more about possessing knowledge about industry change and direction than individual's wants and desires.

In answer to the above difficulty Cross and Parker (2004) suggest the need for specific groups and boundary spanners whose role is to simply gain this knowledge and facilitate others. This is an interesting proposition as the literature suggests such as role would lead to excessive stress and burnout of individuals as they would encounter resistance from other members and be expected to be sensitive to social cues and competent in multiple domains. Given the focus of this thesis is organisations post-acquisition, it will be important to identify to what level the organisations engaged in learning about each other and whether as Cross and Parker (2004) recommend, specific 'boundary spanners' were appointed.

A great deal of literature defines Information Systems project achievement as a 'fit'. This fit exists on several levels; the systems/s themselves, the organisation or enterprise and the users readiness to change to the new technology and processes (Walczuch et al 2007; Kwahk and Lee 2008; Strong and Volkoff 2010). Besson and Rowe (2001), Newman and Westrup (2005) McAfee (2007) refer to this 'readiness to change' which comprises; the acquiring of new professional skills, changing management methods, wider organisational change, power redistribution and cultural change. Failure to manage this change process will contribute to project failures and even so it is an area of Information Systems research which has not been adequately undertaken to date (Sharma and Yetton 2007; Hee-Woong and Atreyi 2009).

Given the focus of this study is post-acquisition where the levels of boundary spanning systems activity increases (Sumi and Tsuruoka 2002; Yoo, Lyytinen and Heo 2007; Vieru and Rivard 2015), it will be important to identify whether, boundary spanning activity has increased and where it has whether the driving party considered and resourced the socio aspect of ensuring the readiness to change adequately from the perception of those effected.

In this section the increasing importance of managing the social/organisational nature of Information Systems has been further endorsed. The following section considers the impact cultural plays in the development of Information Systems development environments and its identity. This consideration is made in relation to the different phases which make up the Information Systems life-cycle and considers the dimension of internationalised development and implementation.

2.7　The Cultural Impact of Information Systems

Meissonier et al (2013) explored the cross-cultural frictions of Information Systems management. Even in 2013 it was claimed that literature so far provided practical knowledge in relation to conflict and the management of conflict brought about by merging Information Systems functions citing this to be the misalignment between systems and corporate needs. Meissonier et al (2013) refer to this situation as a cultural misfit and claim the need for more research in order to understand this phenomenon.

This notion of poorly fitting Information Systems (cultural misfits) is of increasing importance as organisations become ever more global and composed of several sub-cultures when systems are designed from one cultural perspective or position based upon someone's notion of best practice or preference (Meissonier et al 2013). This corresponds with Kappos and Rivard's (2008) discussion of the cultural fit of systems, the environment in which they were designed and the nature of the place in which they were to be operated.

Meissonier et al (2013) conclude that failing Information Systems projects are more about the way projects, in their research on Enterprise Resource Planning systems (ERP's), are implemented rather than the way they are designed and again their findings related to gaps in research where the phase of implementation is seen as 'someone else's problem' by designers and other stakeholders.

Peng et al (2010) state organisational culture is complex and is an important influence in shaping the organisational impacts of Information Systems. However, the conceptualisation and operationalisation of culture in empirical studies does

not reflect the richness of the theoretical literature (Peng et al 2010). In particular, the dynamic, emergent and reciprocal nature of the Information Systems culture relationship has not been adequately examined in the empirical literature. Peng et al (2010) believe a contributing factor is the positivist methodologies employed in existing research which again supports the need for an alternative approach which this study will undertake.

However, organisational culture is not simply a characteristic of the enterprise as there is interplay with the individual's behaviours which influence the organisations structure and culture i.e. a constructionist approach which enables the development of group identity (Wenger et al 2002; Handley et al 2006), intellectual asset and knowledge creation and gain a sustained competitive advantage (Drucker 1998; Alavi and Leidner 2001; Teece 2003; Alavi et al 2005).

As Information Technology is an organisational artefact, Strong and Volkoff (2010) and Hogan and Coote (2014) that is it is a visible entity which shapes organisational processes, it has an impact upon the process of cultural construction and implementing and accepting technology to be a visible artefact instrumenting processes design from values all the way back to the basic assumptions of the organisation or group (Vance, Elie-Dit-Cosaque and Straub 2008; Strong and Volkoff 2010). Where the Information Systems have been developed for application in one organisational environment, their fit in another, where they have been designed with little or no involvement of the users (for example following merger or acquisition) may not be successful as the systems will not be a true cultural representation of the people leading to unintended uses (Soh and Kien Sia 2004).

Meissonier et al (2013) claim that literature purveys culture as a context and static characteristic which contrasts with the position that organisational culture is really shaped by technology and systems, that is, it is a visible artefact and the systems are part of the technology of choice. As such culture should be viewed as a process rather than as an established firm's property, however understanding this position is not supported by the overwhelming level of research from a purely positivist theoretical perspective where culture is seen as homogeneous and monolithic (Meissonier et al 2013).

McManus and Wood-Harper (2007) also refer to culture as the reason why leadership, stakeholder and risk management are not recognised as important factors early enough and such policies cannot be written down for political reasons even though they may be talked about behind closed doors and until a process of education and training is undertaken specifically relevant to Information Systems projects there will continue to be reliant upon tools and methods such as SSADM (Structured Systems Analysis and Design Methodology) and Prince 2 which rarely led to a successful outcome but provide a release against anxiety and a crutch in the absence of real leadership (McManus and Wood-Harper 2007). The reasons behind their failure to help in many cases is that such tools and methods cannot aid the delivery/implementation process where complex variables exist such as the socio-technical aspects of human interaction, multiple stakeholders, externally driven factors and ethical constraints. Further research of these issues within Information Systems project development and implementation will lead to better understanding whether or not those projects were deemed failures (by whatever measure failure is attributed) or successes.

Where organisations merge or where an organisation is acquired by another it is implied that there will not only be a merging of departments and functional areas but also of Information Systems (Vieru and Rivard 2014). Alternatively all new systems which span the new boundaries may be developed and implemented in the Post-Acquisition Integration (PAI) environment (Vieru and Rivard 2014). Consistently studies have demonstrated that where such projects are successful there has been substantial levels of collaboration between all parties as such organisations are considered to be multilevel phenomenon (Suchman 2002; Levina and Vaast 2005).

However, such changes to organisational systems and subsequent ways of working can lead to a loss of organisational identity as their culture changes (Clark, Gioia, Ketchen and Thomas 2010). Although this would assume that organisational identity is derived from systems and processes alone and that the acquired organisation would be keen to keep their ways of working, which may not be the case and identity may be derived from something else such as a strong recognisable

brand which is clearly a possibility for all three organisations taking part in this study.

Vieru and Rivard's (2014) study holds some resemblance to this study, albeit in a different sector, healthcare, concentrating upon laboratory Information Systems. This study identified complex different working routines and processes across the organisational sites with differing levels of cultural attachment to ways of working. Where new systems were implemented this led to changes in working practices and the creation of new common protocols for all. Throughout the change process there were several discourses where one site attempted to demonstrate the superiority of their systems which was identified as their way of attempting to keep their identity.

As the organisation did not have a substantial brand identity for participants to hold on to, subsequently this led to the allowance of some flexibility going forward reducing the transformational impact and preserving some practices and identity. There should also be some consideration of the correlation between those wishing to preserve systems and processes and their relative positions within the organisation. In this study all participants were senior information systems managers and as such see the value and potential of transformational change to their organisations post-acquisition and that in most cases any knowledge transfer, in the first instance will be to their benefit because of the nature of acquiring organisation's position.

The implementation commenced in 1998 and was not completed until 2006 which provides further justification for this study which is taking place with three organisations who were acquired some years ago and concurs with many writers who cite the weaknesses of studies which take place too soon post-merger/acquisition.

Modern studies such as these are still indicating little comprehensive investigations prior to merger or acquisition in relation to Information Systems implications. However, whereas for two decades researchers continued to investigate the phenomenon from the perspective of pre-merger/acquisition planning today more

studies are taken in hindsight. Initially from the immediate period after merger or acquisition but more recently from a longer term perspective.

Over the past decades the level of technology affecting business processes has proliferated, regardless of process characteristics. As technology and Information Systems have progress, the major difference in progression has been the integration of systems as opposed to the earlier fragmented approach to computerisation. Thus information sharing and value has increased exponentially (Da Silva et al 2014).

As the power of information has increased so has the competition between organisations leading to greater product differentiation and demand fragmentation, greater quality and aftersales services because of the enhanced expectations of customers. As such this has required organisations to review their practices, business, communication models and use of information systems to become ever more flexible and able to serve a proliferation of stakeholders usually in the form of Enterprise Resource Planning systems which feature in over 80% of all large organisations, over 90% of German organisations and an increasing number of small and medium sized enterprises (Konradin 2009, Soja 2010, Marques and Guerrini 2012).

In each of the participating organisations Information Systems senior managers have been interviewed who have all worked in both the same sector and function areas for many years and are fully aware of their organisations position in relation to the both the competition and level of investment in Information Systems. In each case the Information Systems underfunding position was clearly cited as a competitive weakness and an important area for investment and development post-merger/acquisition.

However, where systems change is of such large scale Soja (2010) refers to '*the need for substantial involvement of the entire hierarchical structure of the organisation and its partners who must agree to collaborate*'. In addition, any implementation must be preceded by a full analysis of existing procedures, processes and the organisations culture (Cheikhrouhou and Marmier 2010). The

implication of this would be to slow the process of new products to market in what is already a sector with relatively long lead times which in turn slows returns on substantial investment.

The review of literature pertaining to the impact culture can have upon the Information Systems functions demonstrates broad agreement that the impact can be high. This is because systems design the nature of organisational processes and the impact can be negative where systems designed in one organisational environment are placed into another, for example following a merger or acquisition. Culture is complex and a source of identity and can vary between different organisations and individuals hence the level of impact and personal perceptions will varied underpinning the social aspects of Information Systems and the need for this study from a new theoretical perspective.

The following section considers the importance and necessity of assessing a subsidiary's readiness and ability to take on board parent systems and highlights the fact that Information Systems change impacts the whole organisation. Li et al (2008) state a lack of readiness to take on board alternative Information Systems is often a cause for failure. Part of this readiness can be cultural differences in the way the two organisations operate making this an important aspect in the exploration of the development of the post-acquisition Information Systems environment.

2.8   The Lack of Prior Preparation

Li et al (2008) claim the benefits of new Information Systems implementation are often not achieved because of the lack of prior preparation to organisational infrastructure. Li et al (2008) refer to the organisational infrastructure as involving a number of stakeholder groups including; the workforce, quality management, re-engineering, production planning and control in addition to organisational policies and reward systems. This definition, based upon research in manufacturing and supply chains suggests that Information Systems change is an organisation-wide project, due to its cross-functional reach and so such changes should be viewed as a holistic change and failure can paralyse the organisation. This position is also

supported by (Hayes et al 2005; Wang et al 2005). Li et al (2008) also highlight the cross-organisational reach of Information Systems change requiring the need for greater preparation where organisations are required to implement change in order to comply with the needs of their customers and suppliers, that is accommodate the way they operate where this is their primary reason for change as opposed to implementation being undertaken primarily to change internal business processes alone.

Li et al (2008) continue to claim that Information Systems change will indeed change operational processes [ways of working] within organisations and many choose to implement new technologies whilst attempting to continue with now obsolete process and without updating employee skills requirements and rewards systems, often leading to reductions in overall productivity as in the American manufacturing industries in the 1980s and 90s which reached crisis point.

Indeed modern Information Systems provide the data and information which managers require in order to develop the future strategic direction and collaboration activities of the organisation, which are often set to increase post-acquisition. This means for successful implementation people need to learn a new set of skills and a new way of working which could constitute a new cultural form (Davenport 2000).

As part of being prepared for Information systems change Wang et al (2005) refer to the requirements for rapid communication which are not facilitated with many layers of hierarchy. As such they claim the need for flatter organisational structures to be created as part of the preparation for Information Systems implementation as communications become better across individuals, teams and functional groups [both inside and outside the organisation with suppliers and customers] which is supported by (Skok and Legge 2002 and Hayes et al 2005).

In the next section Information Systems integration is discussed with a series of examples provided to demonstrate the levels of success and failure where the approach to Information Systems integration may have contributed to the result. Different approaches to integration are considered along with a discussion of the

salient aspects to be considered in selecting an approach for Information Systems integration.

2.9   Integrating Information Systems Development Environments following Mergers and Acquisitions

Merging with or acquiring other organisations is a great opportunity and strategic tool for organisations to add value, cut costs of operations and remain competitive in an ever more competitive global context (Kanter et al 2007; Busquets 2015; Toppenberg et al 2015; Lohrke, Frownfelter-Lohrke and Ketchen 2016). In 2014 merger and acquisition activity exceeded $3.4 trillion and if merger and acquisition activity were a nation it would be the fifth largest global economy trailing only the United States, China, Japan and Germany (Raice 2015). By 2016 merger and acquisition activity had risen again to be valued at $3.7 trillion representing over 46,000 takeovers (Thompson Reuters 2017).

However, many mergers and acquisitions do not live up to expectations of value creation, some estimates are as low as 10% - 30% success rates, however, success or failure has to be relative to the level of expectations placed at the outset which may be very subjective and overly ambitious (King et al 2004; Sarrazin and West 2011).

In the worst cases mergers and acquisitions have led to the destruction of value for both organisations involved and a number of studies have seen this become a trend. Since the year 2000 up to 75% of organisations citing Information Systems integration problems post-merger and there still being no comprehensive guides or frameworks to support managers in this vital process (Alaranta and Mathiassen 2014). Haleblian et al (2009) state that Information Systems are a critical factor and that many organisations fail to understand their importance and as such they have become passively dependent upon many different systems, hence the relevance of this exploration which aims to provide management with greater knowledge of the needs of the post-acquisition Information Systems development environment.

Examples of merger and acquisition failure include Mattel's takeover of The Learning Company in 1999 for $3.6 billion in 1999 led to a divestment just one year later for $430 million – just 12% of the amount paid. The purchase of Chrysler by Daimler-Benz of Germany in 1998 for $37 billion resulted in a sell-off in 2007 for $1.5 billion – 4% of the initial purchase price without considering the level of inward investment during the intervening nine years. A similar story can be seen with the 1994 acquisition of Rover Group by BMW for £800 million only to see it sold off at the end of the decade for a token £10 with an assistance dowry of approximately £450 million. However, given the diversity of potential merger and acquisition variables, even when just considering Information Systems, would any form of guide or framework support integration (Alaranta and Mathiassen 2014)?

A common view of mergers and acquisitions assumes that all aspects of both participating organisations will be brought together with a level of redundancy in pursuit of economies of scale etc. (Angwin 2007; Alaranta and Mathiassen 2014). However, even in cases where this is the intention, merging or consolidating technology based Information Systems is a daunting prospect and process as many such systems will be well entrenched and most likely be built upon legacy systems dating back decades (Alaranta and Mathiassen 2014). Delta - Northwest Airlines merger in 2008 required the consolidation of more than 1,200 systems down to around 600 some of which dated back to 1966. The process took several years to complete again supporting the position of researching this subject many years after post-merger (Mouawad 2011; Schnurman 2013 [cited in Lohrke F T, Frownfelter-Lohrke C and Ketchen Jr. (2016)]). By 2013 only 30% of Delta – Northwest Airlines management agreed that technology based Information Systems integration had been successfully completed when 50% of the merger benefits were expected to be derived from combining IT/IS (Information Technology/Information Systems) capabilities. This demonstrates that IT/IS capability had been considered pre-merger (Shaffer and Schrock 2012).

This figure is also supported because of the critical role IT/IS plays in business processes and activities, the need for timely and accurate information for

management decision making and the potential for cost saving with IT infrastructure (Shaffer and Schrock 2012).

Research on mergers and acquisitions suggests organisations should consider three levels of IT/IS integration (Wijnhoven, Spil, Stegwee and Fa 2006). These include 'Complete Integration' where the merged or acquired organisation takes on board all Information Systems. This is stated to offer the greatest potential benefit but also brings forward the greatest levels of challenge where full integration will bring a high level of change for one of the organisations (usually the subsidiary) but the benefits may include bringing consistency in practice, enable greater levels of organisational flexibility and cost savings (Wijnhoven, Spil, Stegwee and Fa 2006). Secondly there is 'Partial Integration' where systems are combined where there are synergies for cost savings or information quality improvement or, finally, there is 'Coexistent Integration' where systems are run separately except where combining them is totally necessary (Wijnhoven, Spil, Stegwee and Fa 2006).

Complete integration or indeed any integration can be made all the more difficult as many organisations, even relatively small ones may have a pleather of different, non-compatible systems within its own walls (Wijnhoven, Spil, Stegwee and Fa 2006; Sarrazin and West 2011, Tanriverdi and Uysal 2011). As an example Oracle consolidated 70 different systems into one Enterprise Resource Planning (ERP) system. Although this saved around $1 billion per year post-completion it took over five years to complete. However, a vital benefit was that this internal consolidation of Information Systems meant that Oracle was subsequently able to complete future mergers with greater efficiency (Sarrazin and West 2011, Tanriverdi and Uysal 2011). Too often the primary objective of a merger or acquisition is to integrate the acquired organisations Information Systems with their own – complete integration (Wijnhoven, Spil, Stegwee and Fa 2006), however, this can lead to the destruction of value as opposed to creation, in particular where the IT/IS resources are not scale-free and so this should be considered pre-merger or acquisition (Tanriverdi and Uysal (2015).

Tanriverdi and Uysal (2015 p147) compared the reactions of capital markets to merger and acquisition situations. Their desk-based study identified that capital

market reactions to those situations where the acquiring organisations possessed a significantly higher IT/IS capability than the organisation/s which they were looking to takeover, was very negative. This is believed to be because there was an expectation that the acquirer would seek to '*rip and replace the IT/IS capabilities of the acquired organisation with that of their own*' thus disrupting the acquired organisation's operations and revenue growth. However, this assumption is based upon the notion that the organisation being acquired is achieving revenue growth prior to being acquired and that all IT/IS integrations or renewals create disruption. However, no specific examples were cited.

Tanriverdi and Uysal (2015 p148) however, go on to state that *'…where the merger or acquisition is same-industry, both organisations will have the same or similar operating models, competitive dynamics and regulatory controls. As such ripping and replacing old and weaker Information Systems capabilities of the acquired organisation with superior acquirer resources will create expectations of more efficient operations and engender a positive stock price reaction but often there is also the expectation that Information Systems capability transfer is easy and is not costly'.* This position, also supported by King et al (2004) and Rai and Tang (2010) and is specifically relevant to this study where the acquisitions have been in the same or a similar industry but each with their own specific dynamics and characteristics.

Further to this position, it is important to identify the reasons behind the acquisitions in the first instance to create value. As such this study will identify, where organisations have been the subject of acquisition, whether they possessed poor Information Systems capabilities and if this was a driving factor in the decision to acquire them as it presented the acquiring organisation with the potential opportunity to create value.

As stated earlier, corporate mergers and acquisitions have been increasingly popular in recent times as part of an organisation's growth strategies although many have struggled to achieve the planned and anticipated benefits (Kanter et al 2007; Busquets 2015; Toppenberg et al 2015; Lohrke, Frownfelter-Lohrke and Ketchen 2016). Turner (2000) Bekier et al (2001) claim the reasons behind this are

multifaceted because of the levels of integration which are required, such as organisational processes, personnel, cultures and Information Systems. Research suggests that between 50% and 80% of mergers fail.

Empirical research on mergers and acquisitions and Information Systems developments are varied and it is important to identify the context and assumptions made by the organisations, particularly those of the dominant organisation. This is because often the acquiring organisation will expect the acquired organisation to implement their systems and adapt accordingly to the working processes and culture (Alaranta and Parvinen 2005). However, case studies (not cited) offer questionable evidence due to its anecdotal nature, have shown that the contexts can be more complex where mergers and acquisitions are the trigger for the development of *'all new'* Information Systems development environments (Alaranta and Parvinen 2005).

Similarly, where mergers and acquisitions take place between organisations in the same or similar industries, there will be a level of Information Systems duplication, possibly in both technical and administrative tasks which will, sooner or later, lead to rationalisation (McKiernan and Merali 1995). As such, there will be decisions to be made as to the level of rationalisation, the amount of autonomy afforded by the parent organisation and this underpins the future Information Systems strategic direction within the acquired organisation.

When merging organisations rationalisation is a common goal, but in order to reduce resistance to change, acquired organisations are often asked to keep a level of individuality in their future Information Systems, create their own infrastructure and organisational structure (McKiernan's and Merali 1995). This is said to be acceptable depending upon the level of reliance and process critical activities which are performed or supported by technology based Information Systems (McKiernan's and Merali 1995). However, it is not known what parent organisations view as an acceptable level of independence and autonomy in terms of Information Systems infrastructure and user interface and each case may be different.

When choosing to merge, organisations often fail to consider the implications for Information Systems, instead focussing their priority upon the organisations finances, human resources, management operations and marketing whereas Information Systems is viewed to have low priority (Carrillo 1998). However, research demonstrates that considering the systems capabilities of both organisations prior to merger with equal importance can lead to easier integration and more successful gains post-merger or acquisition, particularly where there is to be a high level of interdependency between both organisations systems (Carillo 1998). Typically the evaluation, if at all, is simply based upon an inventory of hardware and software assets and a costing exercise for integration which lacks any analysis of the infrastructure environment and skills-base (Carillo 1998). As such, the process is invariably under-funded resulting in a lack of understanding and delay problems later on. There also tends to be a lack of post-acquisition planning for Information Systems as it is often over-shadowed by the more short-term objectives of organisational consolidation hence very little Information Systems strategic planning takes place prior to merger (McKiernan's and Merali 1995; Carillo 1998; Alaranta and Henningsson 2008).

Carillo (1998) Alaranta and Henningsson (2008) also found that the task of Information Systems integration was viewed with little importance and has often been delegated to Information Systems/Information Technology line management, whereas it should be overseen by senior managers to understand the strategic importance of Information Systems as the infrastructure is an instrumental part of merger success. It is also recommended that organisations which conducted regular reviews of Information Systems progression were able to provide greater flexibility in integration and so suffered fewer setbacks (Carillo 1998; Alaranta and Henningsson 2008). In contrast those who did not hold any integration reviews suffered far more setbacks and user resistance to systems change (Alaranta and Henningsson 2008).

Alaranta and Henningsson (2008) conclude their research in noting that future research should look to enrich their work by taking place in differing contexts. For example, this could be different industries, different merger dimensions; such as

between organisations of similar sizes or with differing strategic goals to those of their empirical studies and this is what this research will achieve being undertaken in the automotive sector with organisations who will possess different characteristics. Alaranta and Henningsson (2008) claim the research will benefit management and Information Systems professionals with the integration of Information Systems as there is no one best method for all to follow due to the dynamic nature and complexity of merger/acquisition activities and situations.

This section has identified the importance of merger and organisational acquisition activity and many pitfalls which businesses encounter afterwards which can lead to reduced levels of value creation and failure to meet set objectives due to assumptions made based upon poor levels of analysis pre-acquisition or merger. Often the acquisition is considered without sufficient thought for the systems and processes which underpin core business activities, focussing upon other functional areas of activity and short-term gains all of which provides a significant number of factors from which to compare with the primary findings of this research.

The following section considers a range of possible Information Systems strategic directions with the aid of Haspeslagh and Jamieson's (1990) model of merger or acquisition behaviour, along with a critique of how it was been used previously in Information Systems research to date. This process will support the creation of the conceptual model from which the research will be undertaken.

2.10   Approaches towards the Creation of Information Systems Development Environments following Acquisition

As stated at the end of the last section, this section provides a critique of Haspeslagh and Jamieson's (1990) model of merger or acquisition behaviour (figure 2.1) along with a discussion of how it has been used previously in Information Systems research to support the creation of a conceptual model from which this research will be undertaken.

Figure 2.1: Haspeslagh and Jamieson's Model (1990) of Integration Strategies
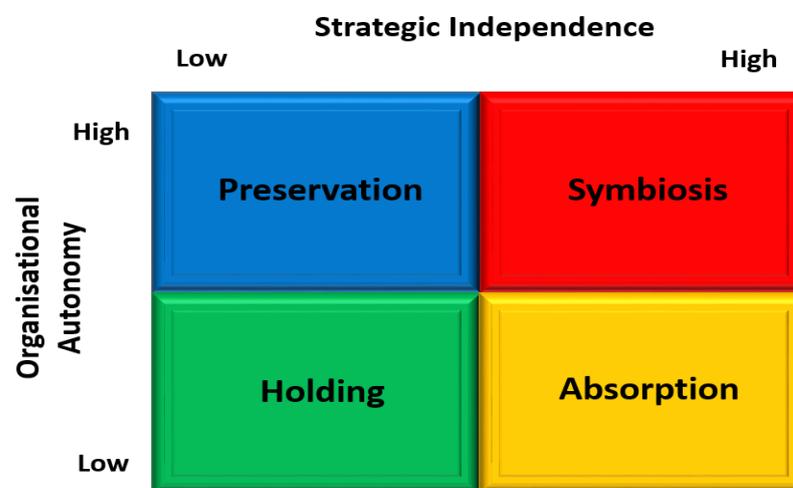
A number of critical factors for consideration when bringing together organisations or functions have already been noted and include; size profitability (where applicable) and synergies such as technical levels or quality of Information systems resources and forms of culture.

Although the model by Haspeslagh and Jamieson (1990) suggests a limited number of recognisable approaches, approaches towards integration or new Information Systems development environments are more akin to the adherence of recognised Information Systems Development Methodologies (ISDM), where the number of recognised approaches is large at around 4,000 (McKiernan's and Merali 1995).

The four different strategic approaches offered by the model are based upon the combinations of high or low values of; strategic independence, relating to the expected nature of the relationship between the acquiring and acquired organisations. That is the levels of independence which will exist and the levels of

technology transfer expected going forward. Secondly, the levels of organisational autonomy, relating to the way in which value is expected to be created in the future and the need to preserve intact the acquired strategic capabilities post-acquisition or merger (Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995).

2.10.1 Strategic Independence

Where two organisations come together through acquisition or merger, value should be sort in all areas including the Information Systems function (Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995). Information Systems integration may be avoided due to cultural differences and the potential it has for organisational disruption because of the level to which they underpin organisational activities and the level to which integration would increase boundary spanning (Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995; Levina and Vaast 2005; Lindgren, Andersson and Henfridsson 2008).

Specific aspects of interdependencies and the level to which independence should be considered include resource sharing, skills transfer or just general management capabilities (Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995). Where the two capabilities are very different the decision about independence can be very tough and lead to higher levels of disruption (Haspeslagh and Jamieson 1990).

However, assessing the level of strategic Information Systems independence post-acquisition/merger is highly beneficial as decision making becomes more objective about which systems are critical and which are not hence more clearly identifying where areas of value creation or enhancement should be sort.

2.10.2 Organisational Autonomy

Organisational autonomy refers to the more obvious traditional organisational boundaries which can be considered necessary to protect (Verhoest et al 2004). However, this can also be applied to specific functions of the organisation, such as the Information Systems function (McKiernan's and Merali 1995). This could be due to very specific and critical systems which require protection and may be a source

of competitive advantage. Alternatively higher levels of autonomy may be accepted or tolerated where the level of change would be considered excessive or overly disruptive. For example a reduction in autonomy could lead to key critical people leaving the organisation thus destroying value creation.

Again, as with the consideration of strategic independence, it is important to make an assessment about the appropriate or desired levels of organisational autonomy in the post-acquisition/merger Information Systems development environment at an early stage (McKiernan's and Merali 1995). As this research takes place much later post-acquisition than studies to date, this research will also be able to identify whether or not the initial levels of autonomy and independence increased or decreased over time and what factors have led to any such changes.

Haspeslagh and Jemison (1990) make specific reference to the need to consider the personnel who make up organisation, or in this research the Information Systems function, looking at the strength of culture and length of service of key individuals and their attitudes to Information Systems change. Haspeslagh and Jemison (1990) however, do not refer to having identified any clear correlation between seniority, length of service, culture and the member's attitude towards changes in Information Systems and the Information Systems development environment. This suggests key personnel's attitudes towards the appropriate level of future Information Systems autonomy may be shaped by other factors. Even so, the lack of correlation can be examined in this research as basic data about the respondents such as their level of seniority and length of service will be ascertained prior to primary research being undertaken, in order to identify respondents who have sufficient experience of the organisation's Information Systems development environment since acquisition. Based upon the strength of the factors of Strategic Independence and Organisational Autonomy, Haspeslagh and Jemison (1990) have identified four different integration strategies referred to earlier (figure one). Each approach is bound by the factor of time for successful achievement and value creation and this is a factor which research studies have not considered sufficiently to date and so benefits from research where acquisition/merger has taken place

some years earlier (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007 and Alaranta and Henningsson 2008; Mouawad 2011).

2.10.3   The Holding Position

The Holding position where both strategic independence and the need for organisational autonomy are both low, suggests the acquiring organisation has little or no intention of integrating functional capabilities or seeking to create greater levels of value via anything other than adding financial resources, risk taking on the acquired organisations behalf and possibly providing some low level general management capability.

It is highly likely that for this to be the right approach, at an organisational and business level, the two organisations will be in the same industry and be of similar strength such that organisational or functional autonomy isn't necessary. As such where both factors are low neither the acquired or acquiring organisation needs to retain their Information Systems. And options such as third party support such as outsourcing may be the better strategy.

2.10.4   The Absorption Position

Where the need for organisational autonomy is still low but the need for strategic independence is high, Haspeslagh and Jemison (1990) suggest the Absorption approach to integration of the organisations or functional areas to create value. Where the level of critical systems is low and compatibility is high, this could be seen as an opportunity to take the political initiative and allow the acquired Information Systems function to select (retain) some systems. This may apply to most forms of integration approaches but could be most significant where Absorption (or Preservation; see 2.8.5) is being pursued.

Over a period of time the acquired function would become consolidated into the acquiring organisations functions and thus, again over time will lose its own identity as its' previously held boundaries are dissolved, known as the 'acceptance paradox'. Where the two organisations or functional areas are large this will take longer to

achieve, suggesting that where there is a disparity in the size of the two organisation's functions, this could be achieved more quickly. This approach, according to Haspeslagh and Jamieson (1990), is more typical where the acquiring organisations intentions are to enhance their domain strength and value can be created through economies of scale and combined functional operations.

Although the risk of excessive determinism, the philosophical belief that all events are determined completely by previously existing causes, is considered to be less important as there is a more limited need to retain anything from the Information Systems function of the acquired organisation, there still needs to be a considerate approach where significant numbers of personnel are to be retained.

Haspeslagh and Jemison (1990) claim strong management is best suited for the Absorption approach suggesting an autocratic manner, that is the leadership team of the acquiring organisation or functions create conditions where the members of the acquired function can transfer their affiliation or leave, which may not be helpful in some situations.

Where this is the case a speedier integration is viewed as preferable as opposed to waiting so that predetermined and expected benefits can be gained as soon as possible. The need to wait for information is low and the costs associated with delay will be high.

2.10.5   The Preservation Position

Where the need for organisational autonomy is high and the need for strategic independence is low for the Information Systems development environment a Preservation approach is recommended. This approach can be referred to an *'arms-length'* approach beyond specific areas of interdependencies, however the total absence of leadership would be an error and the acquired organisation/function needs to have its purpose reconfirmed from time-to-time.

Whereas, so far, Haspeslagh and Jemison (1990) cite the need to set out clearly the approach to be taken at the beginning of the acquisition/merger journey, they claim the need for the Preservation approach may be discovered at a later stage

'the independence paradox'. This can be due to later realisation of the need for greater autonomy in order not to destroy value and can often be the case where the acquiring organisation has paid a premium to purchase the acquired organisation.

Subsequently the acquiring organisation will then look to preserve value and often this is achieved with financial funding and the provision of expertise in order to 'nurture' the function and its Information Systems capabilities which can be critical to the continued operation of the business. Ultimately, the Preservation approach can become a two-way creator of value as at a later stage capabilities and learning can be passed back to the acquiring organisations from the acquired or can be used with future acquisitions or mergers.

The preservation approach is well suited to the situation where the acquirer is seeking to explore new domains (diversification) where they may lack core competences and knowledge in that systems arena and as such the process should not be rushed and can be considered evolutionary as the organisations or functions learn more about each other. However, a too hands-off approach from the acquirer will be detrimental to the learning and value creating process.

2.10.6   The Symbiosis Position

Where both the need for strategic independence and organisational autonomy are high there exists the most complicated of integration situations as a substantial level of strategic capability with regards to Information Systems needs to be transferred, whilst maintaining autonomy is essential to avoid value destruction. For example where specific Information Systems are both highly critical and compatible between the two organisations they should seek to demonstrate and evaluate their potential for creating value together in the future state. This may take time and is likely to be a feature of Symbiosis approach.

In this situation the acquiring and acquired organisations and or their related Information Systems functions have to agree to coexist in the early stages post-acquisition/merger and then gradually develop the environment of

interdependency. In other words they commence the integration process as Preservation rather than Symbiotic. Often this process is very gradual and a significant reason for this is that each organisation has to develop knowledge of the others capabilities and strengths and the outcome is often evolutionary rather than revolutionary. This can be particularly true in functions which are subject to technical development and change such as the Information Systems function. Again this facet of the Information Systems development environment adds further credence for a research study which takes place longer after the acquisition or merger occurrence.

In the early stages functional boundaries require preserving and then change can occur steadily with changes to general management practices leading to skills transfer and then beyond as is discovered to be acceptable, appropriate or necessary. As such leadership needs to demonstrate equity, regardless of differences in the two organisations/functions comparative sizes and where they are both of similar size, both parties should commit to a new set of values.

This approach is more appropriate where organisations are seeking domain extension that is the organisations and their functions which they are seeking to acquire are providing more scope within their domain and where the acquired organisation's functions, for example the Information Systems function require a resource capability more specialised or more suitable to their current levels of operation.

Referred to as the 'action paradox' Haspeslagh and Jamieson (1990) suggest that both organisations and or functions pay serious attention to interdependencies and autonomy and that as strategic capabilities in areas such as Information Systems are known to exist, making decisions as to what requires to be maintained or transferred and how success should be measured will take longer to decide. As such any predefined vision of the future integrated state could be very different in reality.

The following section provides a summary of the use of Haspeslagh and Jamieson's (1990) model by other researchers in the Information Systems arena.

2.10.7 Previous Research Studies Combining the Haspeslagh and Jamieson Model (1990) in Information Systems Research

Since Haspeslagh and Jamieson (1990) created their model depicting four approaches to mergers and acquisitions; Holding, Preservation, Symbiosis and Absorption based upon the needs for Organisational Autonomy and Strategic Independence, it has been applied more specifically to the Information Systems function by other researchers as detailed in this section.

The continued use of or reference to the work of Haspeslagh and Jamieson's (1990) work demonstrates its' robustness and relevance, still today, as it provides a basis from which to analyse and discuss Information Systems research findings.

McKiernan and Merali (1995) identified that a lack of consideration of the Information Systems function was a reason for merger and acquisition failure, although to that point it had only been a claim made upon anecdotal evidence. In their research McKiernan and Merali (1995) use Haspeslagh and Jamieson's four positions to structure their work and identified that where merger or acquisition either desired or required a strategy of symbiosis (some independence) or absorption (maximum operational consolidation) requiring strategic independence to be high, then this posed the greater post-acquisition or merger Information Systems integration, unlike the holding (total independence) or preservation (management at arms-length/autonomous operations) strategies. In their work McKiernan and Merali (1995) conducted two case studies but with organisations of differing sizes and very different levels of technology awareness and resources. This was followed up with a mail survey of 200 organisations (response rate 7.5%) where it was discovered that 75% of respondents agreed information needs as being of importance but only 25% considered Information Systems integration requirements. In addition, less than 50% of organisations conducted any form on due-diligence of the Information Systems provision and none paid any attention to their quality or effectiveness and integration was only ever considered post-acquisition or merger. As a result 65% of acquisitions where symbiosis or

absorption was the pre-acquisition desire achieved this to some degree of success and Information Systems culture was also a key factor.

Wijnhoven et al (2006) also undertake case studies as their approach in three organisations from the Dutch healthcare sector. Claiming there is no 'one-best-strategy' to integrating Information Systems functions post-acquisition, their aim was to inform theory to enable managers to better prepare for the process which aligns with the business objects of the merger or acquisition.

Taking the three action orientated strategies; preservation, symbiosis and absorption, Wijnhoven et al (2006) and align them with three different Information Technology integration objectives or ambition levels; complete - absorption, partial - symbiosis and co-existence - preservation (Johnston and Yetton, 1996; Giacomazzi, Panella, Pernicci, Sansoni, 1997; Giga 1999: McCarty 2001). Again citing the lack of literature pertaining to the importance of Information Systems integration to achieving acquisition success, Winjhoven et al (2006) state '*there is insufficient literature to build a theory of post-merger IT integration and much of the literature is explorative, for example reporting on surveys* ' (Winjhoven et al 2006 p13). As such they claim has created uncertainty with respect to existing knowledge, its completeness and value. Winjhoven et al (2006), like McKiernan and Merali (1995) have considered the business objectives of the merger or acquisition and aligned that to an Information Systems integration strategy as identified by Haspeslagh and Jamieson's model. Winjhoven et al (2006) then continue to identify whether that strategy was achieved in both the short and longer-term, although it is not stated in their research how long constituted long-term. Concurring with McKiernan and Merali (1995), Winjhoven et al (2006) found that where absorption or complete integration of Information Systems resources was the right strategy to achieve the business objectives as set out pre-merger or acquisition, it was not achieved and the organisations had to settle for either symbiosis - partial integration or preservation – co-existence with synchronisation. Also where symbiosis was the right strategic approach, this was achieved with standardisation of Information Systems where possible.

Brunetto (2006) also refers to the lack of research which addresses the non-technical aspects of Information Systems integration, which is the focus of this thesis (Rosenberg 1987; Johnson 1989; Ruben 1992). Brunetto (2006) claims there to be two complementary and sequential elements of successful Information Systems integration which should be considered together. The first element is the possible integration modes which should be decided upon after a consideration of the business, organisational and IT/IS dimensions. The second element is the implementation process of that mode. Brunetto's (2006) study was undertaken in the French construction industry and Brunetto makes it clear, unlike other writers, that the research is conducted from the perspective or the acquiring organisations. In contrast, this thesis is from the perspective and perceptions of those of the acquired organisations taking part.

Once again Brunetto (2006) applies the four integration strategies of the model of Haspeslagh and Jamieson (1990) to the research analysis and discussion although the model is adapted. Burnetto applies them on the basis of the level of difference or similarity of the acquiring and acquired organisations Information Systems configuration as opposed to levels of strategic independence and in contrast to the levels of organisational autonomy Brunetto (2006) considers the strategic goals of the acquisition in relation to the Information Systems function, whether they be synergies and value or alternatively, rationalising and cost-cutting. Like Wijnhoven et al (2006), Brunetto (2006) identified that the intended integration strategy, of the stated acquiring organisation was rarely achieved early after acquisition has taken place. However, the more longitudinal nature of the study identified that over time the acquiring organisations Information Systems strategy for their acquisition may change. As such the model, or the strategies as depicted by Haspeslagh and Jamieson (1990) become dynamic for example preservation may become either symbiosis or holding or even absorption. As this research is also taking place long after acquisitions have occurred, the dynamic nature of Information Systems strategy will be explored.

Business and Information Systems alignment has been a stream of research for many years in particular with reference to role played in merger and acquisition

success (Brown and Renwick 1996; Chan et al 1997; Baker and Neiderman 2014). Baker and Neiderman (2014) also use the strategies identified by Haspeslagh and Jamieson (1990) and applied by other researchers to the arena of Information Systems post-acquisition and again, like Brunetto (2006) make their own augmentations.

Baker and Neiderman (2014) build upon the work of Wijnhoven et al (2006) and developed the following model (figure 2.2) based, again, upon the work of Haspeslagh and Jemison (1990) which combines, logically, all pairs of firm and Information Systems integration strategies. Here the three strategies of Absorption; where the target organisation or function cease to exist, Symbiosis; where functions are to be combined and Preservation; where independence is sort to be retained are considered against a range of options or approaches to achieving the overall aims in relation to the new Information Systems development environment.

Figure 2.2 Baker and Neiderman (2014) Combining Strategies Model

Combination of strategic business and IT/IS M&A integration alternatives highlighting aligned pairs

The new model depicts where the intention is to improve or cut the costs of current Information Systems capabilities and operations by reinventing the Information Systems provision/function the organisation could perform an Absorption strategy largely abandoning most of the acquired organisations capability retaining only key resources. Christensen et al (2011) refer to this as Leveraging the Information

Systems Model but would require some level of integration. Where this level of change is not considered possible or appropriate and there should be a higher level of integration a more Symbiosis approach is needed which Christensen et al (2011) would refer to as Reinvention of the Information Systems Model. Finally, where Information Systems capabilities need to be retained i.e. Preservation, Christensen et al (2011) refer to this as a Conglomeration Information Systems Model.

Baker and Neiderman (2014) found that the overwhelming number of approaches taken by organisations (65%) fell equally into either the Reinvent my Business Model or Leverage my Business model categories with no clear roadmap for what leads to a successful integration of the Information Systems functions because of significant internal and external variables again supporting the need for this study.

In order to complete their research, Baker and Neiderman (2014) take forward the work of Wijnhoven et al (2006) and as with previous research, referred to in this section, have mapped the action strategies of Haspeslagh and Jamieson (1990) with a range of Information Systems integration strategies which tend to mirror the overall business acquisition strategy. Wijnhoven et al (2006) identified four firm level integration strategies which has derived the matrix above: (See figure two)

1. Transformational; where the intention is to transform the IT/IS capabilities and assets of both the acquiring or acquired organisations. The intent here is to develop a totally new environment and capability for both parties

2. Consolidation; where the intention is to illuminate one organisations systems and expand the others to serve both the acquiring and acquired organisation's needs

3. Combination; where superior elements for both the acquiring and acquired organisations are identified and combined to create a new enterprise-wide IS capability

4. Co-existence; where the Information Systems of both organisations are left in tack with no attempt to combine

However, where the integration of Information Systems capabilities does not align with the overall merger/acquisition strategy there are two possible outcomes.

Firstly, they could lessen the level of Information Systems integration than would have be expected, demonstrated by the matrix cells to the lower left combinations. Each of the three combinations the organisations overall plans are to more tightly integrate the acquired with the acquiring whilst leaving the Information Systems functions and capabilities less integrated. Alternatively there could be more Information Systems integration than expected, demonstrated by the upper right matrix cells and in each case there would be greater levels of Information Systems integration than would be expected in Symbiosis or Preservation acquisitions.

Baker and Neiderman's (2014) research is typical of studies of Information Systems conducting exploratory case studies from the positive philosophical position. Whereas most research considers one or few case organisations Baker and Neiderman researched 22 cases and as such the depth of their studies was shallower, but it has enabled greater understanding of the relationships which exist amongst cases but only in terms of general issues.

As in the case of this study, the research material was gathered by interviews with open-ended questioning conducted with senior Information Systems professionals, although they also interviewed some less senior personnel as well in order to try to achieve a broader perspective. However, whereas this study provides an exploration of the post-acquisition Information Systems development environment, Baker and Neiderman (2014) required interviewees who had passed through the actual merger/acquisition process and a weakness of their work is implied as they only interviewed one interviewee per organisation whereas interviewing more organisational participants generates more robust findings.

Baker and Neiderman (2014) stress the importance of following the identical interview protocols in order to strengthen the validity of the findings and conclusions which is a feature of this study as well, however, whereas Baker and Neiderman (2014) codified their research findings in order to perform analysis and identify patterns between cases, this study takes a different and more in-depth qualitative approach to analysis and reporting seeking to identify greater reasoning. A further difference between the studies can be found in the external factors chosen in the assessment of merger or acquisition success. Whereas Baker and

Neiderman (2014) refer to reported financial performance (which are not provided), this study refers to the continued longevity of the venture.

This section has identified and considered a series of previous research studies which have focussed upon the integration of Information Systems in post-acquisition situations. It demonstrates the longevity of both the focus of this research study and the robust nature of the theoretical framework which will underpin the analysis and discussion which takes place. The further application of the work of Haspeslagh and Jamieson (1990) also provides consistency in the research process and an opportunity for future researcher to make comparison.

2.11 Conclusions

The subject of Information Systems integration failure, or success, resulting from either merger or corporate acquisition is complex and can be caused by an array of factors as identified. Often the situation is made more complex as there are several causes at play at any one time. The situation is exacerbated with the increasing rate of cross-organisational systems and organisational mergers and acquisitions which has in part been fuelled with the recent global economic crisis and growth of developing economies such as Brazil, Russia, India and China which keeps this topic area current.

Understanding the Information Systems development environment is made more difficult as there is no universally agreed definition of what constitutes failure or success. Rather it can be likened to a continuum between failure and success with different people claiming either at different points along the scale or the lifecycle of an Information Systems venture.

Merger and acquisition activity too often fails to acknowledge the importance of real consideration of systems integration prior to joining organisations together. Over emphasis is placed upon the more visible artefacts such as structure and the merging of functions with the focus upon immediate cost savings. With technology based systems underpinning so many organisational functions and operations. This

is a crucial mistake and one which has led to so many expected benefits not being achieved. There also needs to be greater levels of organisational learning as mergers activity will only increase in pace and strategic importance.

There are many gaps identified by experienced authors in relation to Information Systems and the development, integration and implementation failure. Although there is greater acknowledgement of the subject matter, many authors claim that we are still not understanding the underlying reasons for the project/integration failures and this is in part due to the lack of subjectivist, qualitative studies to date. With much of the literature citing managerial or social issues, such as human agency as the reason why systems may be deemed failures, there requires to be a more subjectivist ontological approach to research in this field as Information Systems are social as well as technical in nature.

This understanding gained from the review of literature combined with personal pre-understanding as set out earlier has led to the formation of the following research questions which will form the basis of the empirical exploration, however, it is also anticipated that new understanding gained from this research undertaking will lead to the identification of unexpected aspects in relation to the phenomena of the post-acquisition Information Systems development environment:

1. What are the characteristics of the organisational relationships post-acquisition?
2. How does the relationship affect the expectations of both the acquiring and acquired organisations upon each other?
3. How are the strategic capabilities of the organisation's Information Systems embedded within the corporate culture and how does this impact upon independence and autonomy?
4. To what extent are acquired organisations allowed to participate in the design and development of the post-acquisition Information Systems development environment?
5. To what level are acquiring organisations willing to provide systems, and other, resources, for example; financial, management capability/consultancy?

6. Have developments, post-acquisition, led to a reduction of duplicated systems and work processes and raised the level of information sharing across traditional organisational boundaries improving efficiency and effectiveness?

These research questions are now distilled into the following research themes:

1. The post-acquisition organisational relationship
2. Post-acquisition expectations
3. Impact upon independence and autonomy
4. Participation in post-acquisition Information Systems development
5. Acquiring organisations willingness to support
6. Post-acquisition Information Systems rationalisation and collaboration

Chapter 3:   Research Design and Methodology

3.1   Introduction

Having identified the research questions and conceptual framework from the review of literature in chapter two, this chapter sets out the case for taking an alternative theoretical approach, neo-empiricism, and demonstrates the rigorous research strategy followed in the collection of data and its analysis via the general inductive approach having undertaken semi-structured interviews in three case study organisations (Thomas 2006; Yin 2014).

From the review of literature, in the previous chapter, a range of important issues were identified. These include operational aspects Livari (2007) Henningsson (2010), boundary spanning of systems (Livina and Vaast (2005), culture Meissonier (2013) and the lack of preparation Li et al (2008). In addition, the importance of conducting Information Systems research in the context of ever increasing levels of merger and acquisition activity in the global business environment was made King et al (2004) Sarrazin and West (2011). This has resulted in the following research questions to be answered:

1. What are the characteristics of the organisational relationships post-acquisition?
2. How does the relationship affect the expectations of both the acquiring and acquired organisations upon each other?
3. How are the strategic capabilities of the organisation's Information Systems embedded within the corporate culture and how does this impact upon independence and autonomy?
4. To what extent are acquired organisations allowed to participate in the design and development of the post-acquisition Information Systems development environment?
5. To what level are acquiring organisations willing to provide systems, and other, resources, for example; financial, management capability/consultancy?

6. Have developments, post-acquisition, led to a reduction of duplicated systems and work processes and raised the level of information sharing across traditional organisational boundaries improving efficiency and effectiveness?

In order to answer these questions and address the purpose of this exploratory study the underpinning philosophical assumptions are addressed in with respect to the rationale for the research design. The approach for data collection, sampling and analysis will be discussed in the following chapter. This is essential as the findings are shaped by the assumptions and experiences of the researcher conducting the work (Thomas 2006).

In this chapter the more 'conventional methodological approaches' to Information Systems research are critiqued in order to make the case for an alternative qualitative approach. The undertaking of this research from an alternative theoretical perspective, a contribution of this work, means it is important to separate and be clear about the terms research method and methodology as they are often used interchangeably and their selection is influenced by the theoretical position of the researcher (Crotty 1998; Gill and Johnson 2000; Adams et al 2007; Eriksson and Kovalainen 2008; Blakie 2010; Saunders et al 2015). The differences between research method and research methodology can be drawn on the following grounds. Where the research method is defined as the procedure, technique or the tool/s applied by the researcher to undertake research. In contrast, the methodology is the systematic, theoretical analysis of the methods applied to a field of study and is underpinned by the theoretical perspective of the researcher.

Therefore this chapter will set out the underlying philosophical assumptions, that is, the theoretical perspective before investigating the methodology and methods to be employed, as selecting an appropriate methodology and methods is essential to answering the research questions.

This chapter also explains the procedures which were undertaken in order to collect and analyse the research data collected through the interviews. This includes the

process by which the data was reduced in order to identify the main themes. The analysis process will be explained, step-by-step from the transcription of recorded semi-structured interviews to data cleaning, coding, categorising, theme identification and finally cross-case analysis which will highlight the contribution to theory and practice.

3.2   Conventional Quantitative Approaches to Information Systems Research

The Information Systems research community, including (Hirschheim 1989) Bhatt et al (2005) Kappos and Rivard (2008) Alaranta and Mathiassen (2014), has been concerned that Information Systems knowledge is not as comprehensive as it should be. The main problem may be argued to be directly related to what is considered to be valid research and the need for a theoretical perspective shift in Information Systems epistemology. Researchers (Hirschheim 1989) Bhatt et al (2005) Kappos and Rivard (2008) Alaranta and Mathiassen (2014) cite the need for research in this area to come from an alternative ontological and epistemological perspective as around 90% of research in this field is from the purely positivistic position and these researchers quote the need for a more qualitative perspective to be added in order to establish a body of knowledge which supports managers in their more interpretivist activities such as how can managers bring together Information Systems functions [post-acquisition] more effectively and efficiently (Mehta and Hirschheim 2004; Baker and Neiderman 2014). However, to date, this is not appearing in the published journals. If Information Systems, though technical in nature, are to be accepted as having social ramifications then our over reliance upon research approaches which rely upon measurement of observable aspects of a phenomenon will not aid our understanding of both the meaning of events and peoples experiences and perceptions (Bazeley 2013).

As stated in the previous chapter, Information Systems research draws heavily from the social sciences as they are fundamentally social rather than technical systems (Hirschheim 1989). As Information Systems underpin and essentially direct human

behaviour or activity (tasks and processes) they are human in nature and so Hirschheim amongst others criticise the acquisition of knowledge in this domain as it is invariably gained via the methods of the positivistic perspective (Hirschheim 1989; Mehta and Hirschheim 2004; Baker and Neiderman 2014) that are constrained by the laws of empiricism and repeatability which are not necessarily appropriate due to this human nature of Information Systems.

In addition, this dominance as discussed, has not provided knowledge which will either inform or support management decision making in this field in particular because of the differing contexts which apply in the business/organisational world. This was argued more than a generation ago, Payne (1976) claimed the need for a neo-empiricism approach in the pursuit of knowledge as methodological pluralism, or mixed methods, was considered valid and is appropriate to such a contingent domain. Although this would be a departure from the approach of Information Systems research to date, neo-empiricism maintains an objective stance through a reliance upon a theory neutral objective language which shares common ground with positivism and will be argued to be a meaningful approach. This will be discussed later in the chapter.

The debate about how philosophy should inform Information Systems research has been of great attention (Weber 2003). The emphasis lies in the epistemologies of research and the underlying assumptions about truth being in the paradigm of the natural sciences (Weber 2003). Whereas truth is debated between it being something which is extractable or something which can be assessed as truth, that is, *'what is true'* Information Systems research should take the approach of 'what is *effective*' or practical as while it can be argued that utility relies upon truth, the discovery of truth may lag the application of its utility (Weber 2003). This would underpin a more interpretative approach as what makes an effective or successful Information System development environment depends upon the interaction between the systems and the people working with them.

In 2007 this was the overall theme of the European Conference on Information Systems (ECIS) where relevant rigour is seen as rigorous relevance. Here it was reiterated that there is a demand for and a shortage of research which holds

relevance for Information Systems practitioners. It was also argued that future research should centre upon business problems in natural settings with action research becoming a focal method, but this has yet to be fully undertaken.

Bhatt and Troutt (2005) explicitly state in their research that their results and conclusions are limited due to their positivistic epistemology and methods claiming a greater use of interpretative approaches would have yielded greater depth and insight in the research. However, they do not offer any explanation as to why this would be the case, or consider by what approach such research could be completed in the future. Similarly Kappos and Rivard (2008), whose research clearly adopts positivism throughout yet refer to the importance of subjectivity in management and organisational research. Again the weakness of their theoretical perspective is acknowledged but not explained. Subjectivity and what is understood by the term will be returned to later in this chapter.

In order to gain a deeper understanding of sense making with respect to the Information Systems development environments in a changing business climate and to inform management decision making, it is suggested that there is a need for an interpretive approach to understand more of 'how' and 'why' with less of the 'what' (Hamersley and Atkinson 1995). Denzin (1978) refers to this as the need for a thicker description including; intentions, motives, meanings, contexts, situations and circumstances, but is this observable and is truth attainable in any paradigm let alone positivism? This situation underpins the need and preference for the conducting of an interpretive, qualitative study in this field.

3.3   Research Approach

The philosophical aspects and questions of all research methods and methodological approaches should be considered at the commencement of undertaking research as some research methods are closely connected to a particular research philosophy and to the ways new knowledge is created through research (Johnson, Clark 2006; Eriksson and Kovalainen 2008; Ritchie et al 2014; Saunders et al 2015).

In order to structure the design of this research, the approach favoured by Crotty (1998) has been applied because it supports logical thinking about the requirements of qualitative research. This is achieved by progressing from the overarching high-level thinking that is epistemology to the ontological theoretical perspective which informs the methodological plan of action, which in turn culminates with the selection and application of suitable methods. As such issues relating to research design will be considered later after firstly outlining the philosophical position of this research (Eriksson and Kovalainen 2008).

The purpose of this thesis, is to explore the phenomenon of the post-acquisition Information Systems development environment, as set out in the introductory chapter, following a qualitative approach. Qualitative or interpretative research is, compared to quantitative research is less easy to define clearly (Johnson and Clark 2006; Bryman and Bell 2011). *"Qualitative research has no theory or paradigm that is distinctively its own"* (Denzin and Lincoln 2011, p6). Instead it is a broad umbrella term which can cover a wide range of techniques and philosophies providing a real opportunity to explore more complex business/organisational phenomena in the setting of their own contexts (Anderson and Arsenault 2005; Eriksson and Kovalainen 2008; Hennink et al 2011; Ritchie et al 2014).

Conventional Information Systems research is set in theoretical perspective of positivism and quantitative methods. Johnson and Clark (2006) state, this is underpinned by the belief that only true knowledge is that which we can get from our senses, it involves an etic approach and is seeking causal laws. As a result,

research which is concerned with people's experiences and perceptions is viewed as invalid, as it is not possible to cognitively access or measure perceptions.

Critics of this position believe in the principle of internal logic, where positivism would state for a given stimuli there will be a single response or action, critics argue there could be many different responses given people's different values and perceptions which may not be predictable. As such a purely positivist approach to social science research is seen as flawed and it is agreed that there is a need for a move towards post-positivism (Gill and Johnson 2010).

Post-positivism takes its basis from the central tenant of verstehen that is the understanding from within (Gill and Johnson 2010: Clark 2014). Verstehen, is an empathic understanding of human behaviour [Oxford English Dictionary] and is central to qualitative research studying peoples lived experiences which take place within a context of variables both social and historical via the process of inductively accessing the actual meanings and interpretations which they subjectively and inter-subjectively use to make sense of the environment (Husserl 1995; Alvesson and Deetz 2000; Snape and Spencer 2008; Gill et al 2010; Denzin and Lincoln 2011).

This concept is essential for a qualitative approach as researchers want to know and understand the subjective meaning that people attach to their views and experiences (Hennink et al 2011). As such verstehen validates the qualitative approach to be the most appropriate for this research study as it is the experiences, views and perceptions of the participants which are set in their respective contexts which is of importance.

Returning to principles of the qualitative approach to research, it is normally associated with certain types of data, for example words and narrative as opposed to numerical data (Dabbs 1982; Babbie 1991; Berg 2009). Also it is differentiated from quantitative research as hypothesises are generated from the analysis of data as opposed to be stated at the outset of the research process (Silverman 2010). In addition, the qualitative approach emphasises the understanding of the social world by developing an understanding of people's lived experiences and interpretations and how they have arrived at their own understanding all of which

is ignored by quantitative approaches (Holloway and Wheeler 2010; Bryman and Bell 2011).

3.4 Theoretical Position - Neo-Empiricism

This section provides a critique of positivism in favour of neo-empiricism as a response to the need to move beyond the conventional approach in Information Systems research.

As stated earlier, Information System research, to date, has almost exclusively pertained to the positivist position and a number of researchers have been cited as having identified a need to research this subject area from an alternative perspective in order to explore the opinions, understandings and viewpoints of Information Systems professionals from the automotive sector; who have been subjected to either a merger or acquisition, in order to create new knowledge.

The advantage of neo-empiricism is that it acknowledges that our minds are not merely passive receptors and that we are capable of making judgements and decisions. We select, limit, organise and interpret our experiences to form assumptions in order to give our world meaning, although this can also be said to claim that we cannot engage neutrally with the world (Honderich 1995; Johnson 2000).

As has been argued the increasing level of reliance on Information Systems organisations will continue to face in the future Kark et al (2019); Clarke and Mullaney (2019), interest in this area of research will only grow further as will the need for greater diversity in the approaches taken in order to access the increasingly important subjective processes of those involved (actors). Those involved may hold the keys to our theoretical explanations (understanding) of the social world despite a strong desire to retain the idea that there is a world out there that awaits discovery which may be investigated in an objective manner (Johnson and Clark 2006).

Even though it might be suggested that many of the qualitative methodologies assume some sort of interpretivist agenda, they do entail competing philosophical commitments which rely on different ontological and epistemological perspectives of human behaviour (Gill et al 2010). As such they have different rationales for what is taken to be the truth and the logic for engaging with the understanding of the social world (Gill et al 2010).

The origins of neo-empiricism were developed from a critique of positivism and its inability to access people's subjective perceptions and understanding of a given phenomenon (Machery 2006). A key tenant of positivism is the acceptance of the ability to observe an object or phenomenon, external reality, with complete neutrality and as such can test theory or preunderstanding by gathering empirical data and facts by any acceptable methodologies and methods thus maintaining the objective stance through a theory neutral objective language (McAuley, Johnson and Duberley 2007).

Positivism in its purest form is better suited to smaller scale problems in social science management which is more amenable to precise definitions, statistical testing and the generalisability of the research findings and so positivism is not suited to this research because of its broader scope and gathering of qualitative data (McAuley, Johnson and Duberley 2007).

As such McAuley, Johnson and Duberley (2007) refer to this position as type one where accessing an actors subjective perspectives is inappropriate and it cannot be observed objectively regardless of methods employed. In contrast, this research adopts the type two position where it is acknowledge that an actors position, behaviour and, more importantly for this work, what they believe is directly influenced by how they subjectively interpret and make sense of their environment and surroundings and the researcher can objectively record and interpret their beliefs (Alvesson and Deetz 2000).

Neo-Empiricism is, thus, a theoretical stance that critiques and amends positivism, where most current Information Systems research is situated, for reasons set out. As with positivism there is an emphasis upon the independence between the

researcher and the researched subject, however, neo-empiricists accepts that preunderstanding, theories, background, knowledge and values of the researcher can influence what is observed (Machery 2006; Clark 2014). As such neo-empiricists pursue objectivity by accepting the possible effects of biases on both the parts of the researcher and those taking part in the observation or research.

Both positivism and neo-empiricism share the same commitment that it is the sensory experience of objects which provides the only secure foundation for social science knowledge through a theory neutral observation language located in the Cartesian Dualism (Johnson and Duberley 2000 p181). Verstehen, which takes into account the actor's subjectivity, is maintained in neo-empiricism satisfying the need for an objective epistemological stance and so the researcher believes they can provide an accurate description of their accounts with regards to the phenomenon being research (Gill and Johnson 2010).

Neo-empiricists thus reject the idea of following a natural science methodology to research human action and maintains we need to gain a greater understanding of the meaning of actions from the perspective of the actors. By the treating of human actors as subjects as opposed to the objects of our observations, neo-empiricists accept that humans possess an internal subjective logic which must be understood in order to make it intelligible. It is this notion of subjectivity which often is confused with that of an epistemological sense (Johnson and Clark 2006; Darabi and Clark 2013).

Where positivism asserts reason to be the most reliable source of knowledge and truth, in contrast neo-empiricism supports the process of sense making. Locke (2002) claimed all knowledge is derived from sense data developed through learning and experiences and that all objects or phenomenon are made up of two categories of properties; primary and secondary. Primary properties are physical and objective thus cannot be denied, in this research the Information Systems themselves which exist independently of those who function in that environment. In contrast, secondary properties are subjective and can be open to individual interpretation, in this instance the opinions and perceptions of those individuals, [actors] about the nature, usability and suitability of the systems. It is a key purpose

of this research to access and make sense of those secondary opinions and perceptions which has not been achieved in previously published research because it was not agreed that researchers can access secondary opinions and perceptions objectively or neutrally, thus provides a strong case for this approach.

The neo-empirical approach is specifically referred to with regards to researchers who are using qualitative data to *'develop inductively thick descriptions of the patterns in the inter-subjective meanings that actors use to make sense of their everyday worlds and who investigate the implications of those interpretations for social action'.* As such, much interpretative research is argued to follow the logic of neo-empiricism (Johnson et al 2006 p136).

A key purpose of this research has been to create a better understanding which informs management decision making in the Information Systems development environments which are becoming increasingly more dynamic and complex and it is these *'thick descriptions'* which require accessing and interpreting objectively that will enable new understanding through neo-empiricism and the employing of qualitative methods.

The inductive approach enabled preunderstanding, gained from personal experience and literature to be tested in new environments where both streams of research material are considered with equal gravity thus enabling a meaningful, if not iterative, discussion leading to the development of a critique of literature and the creation of new knowledge (Johnson et al 2006).

In positivism the concept of a theory-neutral observation language manifests itself in the subject-object dualism, which is the knower (researcher) is separate from the known (the observed object of the research study). With neo-empiricism the separation of the knower and the known is still prescribed but is a subject-subject dualism, a differentiation of the knower-researcher from their descriptions (observations) of what others know so as to enable the researcher's ability to experience neutrally and to be able to provide an account of their experiences [perceptions of organisational reality], (Johnson and Duberley 2000, p181).

In the next section the research design is considered. This section will discuss the merits of the multiple case study methodology, the strategy developed for interviews and the process for analysis of research material.

3.5   Research Design

3.5.1 Methodology: Case Study

The case study methodology has gained increased prominence in the world of social science research and is a recognised methodology for the undertaking of neo-empiricist, interpretivist research as it is concerned with understanding human behaviours from the participants own perspective (Robson 2002; Hartley 2004; Yin 2014). In addition, a number of research projects in the Information Systems arena have undertaken this methodology, examples include Bhatt et al (2005); Macome (2007) Pan et al (2008); Kappos and Rivard (2008); Kim and Kankanhalli (2009) (Henningsson, Yetton and Wynne 2018).

Research material gathering within the case study method is flexible and does not restrict the researcher (Hammersley and Gomm 2000; Strake 2006). This may often include the use of more traditional interpretivist methods such as surveys and interviews as many methods overlap (Baker and Neiderman 2014; Yin 2014). However, like any other research methodology, case study requires a sound review of literature and the setting of clear and thoughtful research questions and objectives (Strake 2006; Yin 2014).

Case studies are a way of focusing upon the dynamics present within a chosen setting and are an approach which enables more extensive examination of a phenomena of interest in which the environment is central (Eisenhardt 1989; Hartley 1994). This research is performing an exploring of the phenomenon of Information Systems development environments and the effects they experience post-acquisition, making the case study approach a suitable methodology for consideration as it provides a strategy for conducting research which involves an empirical investigation of a particular contemporary situation within its real life context, whilst being flexible in terms of the methods by which this is achieved

(Robson 1993) The approach is also best suited to situations where the outcome is to address the 'how' and 'why' questions about a particular phenomenon under exploration Hedrick, Bickman and Rog (1993).

Case studies offer additional flexibility for this research as it accepts that what constitutes a 'case' [a single exploration] can in reality can be made up of multiple organisations or groups of individuals. In this work at least two organisations, the acquiring and acquired organisations will be contributing to the relationship that is the Information Systems development environment that is being explored (Feagin, Orum and Sjoberg 1991; Rogers 2000; Shavelson and Towne 2002; O'Reilly 2005; Alvesson and Sanderg 2011; Symon and Cassell 2012).

This emphasises that a case study approach is suited to this research where it is believed there may be important contextual conditions pertinent to the phenomena, which may be internal or external, and gaining a fuller understanding of these conditions/factors is critical to understanding the real-world situation (Yin 2014). As this approach adopts a separation of entities which can be referred to as the knower and the known it accepts the principle of a theory neutral objective language and so truth is stated to be cognitively accessible which is compatible with the neo-empiricist theoretical position discussed earlier in this chapter.

As this research will explore three case situations, this is a multiple case study approach, considered by some to be a separate methodology (Eckstein 1975; Lijphart 1975; Yin 2014 p56). However, researching additional case situations will create a more robust contribution to knowledge and management practice (Herriott and Firestone 1983; Eilbert and Lafronza 2005; Hanna 2005).

In the following section the research methods for data collection will be set out.

3.6   Research Design (Method)

3.6.1 Research Material Collection

The collection of research material was via the semi-structured qualitative interview as this method can be used to gain an understanding of the world (phenomenon under exploration) from the perspective of those involved which is precisely the purpose of this work, to gain new understanding of the Information Systems development environment post-acquisition (Kvale and Brinkman 2015). Although the qualitative interview method can take different forms, from the fully structured to the totally unstructured and specialist forms such as the journalistic interview, for this research that form will be the semi-structured interview.

When compared to quantitative research methods, the semi-structured interview is argued to offer greater ecological validity, providing rich insightful accounts and the ability to help to make sense of complex organisational realities (Eby et al 2009). Although this method can take different forms, for this work it will be in the form of semi-structured as this facilitate a greater conversation between the researcher and those taking part, which will lead to the gathering of richer research material as it enables access to people's subjective experiences, whilst providing respondents with the time and scope to consider their opinions on a given subject (Berg 2009; Perakyla and Ruusuvuori 2011; Kvale and Brinkman 2015). In the case of this research the questions are:

1. What are the characteristics of the organisational relationships post-acquisition?
2. How does the relationship affect the expectations of both the acquiring and acquired organisations upon each other?
3. How are the strategic capabilities of the organisation's Information Systems embedded within the corporate culture and how does this impact upon independence and autonomy?
4. To what extent are acquired organisations allowed to participate in the design and development of the post-acquisition Information Systems development environment?

5. To what level are acquiring organisations willing to provide systems, and other, resources, for example; financial, management capability/consultancy?

6. Have developments, post-acquisition, led to a reduction of duplicated systems and work processes and raised the level of information sharing across traditional organisational boundaries improving efficiency and effectiveness?

As the purpose of this work is to gain a greater understanding of the implications of acquisition upon the Information Systems development environment from the perspective of those who have been involved, semi-structured interviews facilitate this as they provide the means to explore the perspectives of our research subjects – actors and the participants have a greater role in the structuring of the interviews as the questions are less rigid and more fluid, meaning each interview could uncover many different avenues for discussion. The semi-structured interview method will allow these to be investigated more deeply than any other method. (Weiss 1994; King 2004; Denzin and Lincoln 2005; Silverman 2005; Marshall and Rossman 2006; Rubin and Rubin 2011).

3.6.2 Interview Strategy

Using the semi-structured interview technique in case study methodological research means questions, reflecting the line of exploration, are actually posed to the researcher, not the interviewees i.e. they are there to remind you what you need to collect. In this respect questions require more careful consideration and should be viewed more as a framework to keep the discussions on track whilst enabling opportunities to be explored as they arise (King 1994; Alversson and Deetz 2000; Yin 2014).

Whereas Yin (2009) refers to the need for research questions to be have been used in previous research gathering in order to facilitate replication, comparison and testing with the intent of reinforcing or disproving previous findings. This is not the case as the work is an exploration of the phenomenon, however, all questions posed are supported and justified from previous published literature, frameworks and models for relevance. This fact also enables me to claim my objectivity in

choosing questions over person bias and they are also relating to the units of analysis (the organisation/s) as opposed to the units of data collection (the individual interviewees).

As such most questions are organisational focussed, that is about the Information system development environments of the organisations taking part in this research although, the responses will be from the interviewee's understanding, experiences and perspectives.

Having selected and justified the semi-structured interview method there are more practical considerations such as; who to interview and how many interviews to conduct and these could not be answered at the outset. However, the question of how many people to interview is somewhat irrelevant with this approach, as the recommendations are to stop gathering material once patterns are identified and no new findings are apparent.

After conducting pre-research organisational visits (organisational selection will be detailed later in this chapter), it was discovered that there was only a potentially small sample for data collection as only the most senior people would possess the necessary insights, due to their level of knowledge and length of tenure in the Information Systems development environments – defined criteria (Guest et al 2006). However, King (1994) noted that even large numbers of participants cannot capture everything and there is a need to be realistic in both practical and theoretical terms considering the logistics and the level of material which semi-structured interviews can create. This process constituted purposive [qualitative] sampling as it purposely identified the best participants who are most likely to help the researcher to understand the research situation (Creswell 2003; Wilmot 2005; Patton 2015; Saunders et al 2015). Participant information can be viewed later in this chapter.

The discussion in each of the participating organisations (purposive sampling) identified twelve interviewee candidates across the three organisations. This was based upon certain criteria including; length of tenure relevant to the acquisition taking place, level of exposure to or understanding of the Information Systems,

seniority relevant to Information Systems decision making. Each of the twelve interview, with one exception was conducted face-to-face, the exception was conducted by telephone (three interviews in organisation's one and two and six in organisation three which possessed the largest 'internal' Information Systems resource) and the interviews took place between September 2016 and January 2018.

Whilst the issue of justifying the number of participants for qualitative research has been debated, there is still no consensus of a number deemed appropriate (Guest et al 2006; Saunders and Townsend 2016). What is considered to be more important is the reaching of saturation of information. That is gaining nothing new about the phenomenon being researched (Bowen 2008; Padgett 2008). In each case organisation, each interview confirmed the same basis underlying perspectives about their respective Information Systems development environments, but yielded different examples and stories in support of their understandings and points of view.

The interviews were undertaken with a series of broad themed questions as opposed to a substantial level of specific questions (see appendix one). The purpose of this approach was to facilitate an open discussion so as to gain the richest level of discussion with the interviewees. The questions, or themes were derived from literature and were sent to the interviewees in advance of the interviews taking place. This was done to enable participants to decide if there was anything likely to be asked which they would rather not discuss and to enable them to prepare responses or material in advance if they so wished although this was not a requirement.

The questions were peer reviewed prior to being used by academic research colleagues at the university to ensure they were not leading or misleading in order to either confuse the respondents or suggest a need to provide reflexive responses. Also all participants were fully aware of the purpose of the interviews and the intended use of the material gathered as well as the process by which the interviews would be undertaken.

Each interview was audio recorded and later transcribed personally the purpose of this process was to get closer to the research material and to listen for greater meaning in the interviewee's responses. For example, nuances or hesitations and pauses for consideration in responses where they appeared less sure or more enthusiastic about their comments in relation to specific areas of the discussions (Etherington 2010). Etherington (2010 p292) claims *'…a researcher who does not undertake this part of the work loses the opportunity that transcribing presents us with'*. This process takes a great deal of time but is instrumental in selecting some of the material which has been put forward in the following analytical chapters. Interviewees were also offered the opportunity to receive a copy of their transcript for verification although this was not taken up.

3.7   Analysis of Research Material

3.7.1 Introduction

Social science research mostly focuses on the explanations of human action which are generated inductively during the collection of research material to develop an understanding of the interpretations and perspectives of those participating (Denzin and Lincoln 2000).

The purpose of this research is to contribute to both theory and practice by exploring the effects of acquisitions upon the Information Systems development environments by understanding the perceptions and viewpoints of those involved given the important role this function is said to play in achieving acquisition success. For this research to be of both theoretical and practical value it needs to provide management practitioners and future researchers with the ability (framework) and knowledge to be able to apply this work across other organisations and potentially other sectors. Indeed this research process is moving inductively from the empirical, observations of the complex phenomena that is the Information Systems development environment to the development of a new theoretical understanding (Locke 2007; Eriksson and Kovalainen 2008). The research findings from three organisations have been analysed firstly by organisation and then a cross-case level

of analysis was conducted. This process has identify both important differences and potentially similar factors. Where factors relating to the phenomena are repeated across organisations the research findings may satisfy the principles of generalisability which are often difficult to achieve in qualitative research as discussed in the following section (Bryman and Burgess 1994; Bryman and Bell 2011).

3.7.2 The General Inductive Approach

The process of induction follows the logic of proceeding from empirical to theoretical results (Eriksson and Kovalainen 2008). The general inductive approach normally commences with an observation of a phenomena which is puzzling and requires exploration and culminates with new theory (Locke 2007). As such this approach means the researcher is setting out to generate new theory.

The principle of generalisation in qualitative research is questionable (Bryman and Burgess 1994). The scope of a qualitative exploration is often restricted which makes it impossible to know how the findings from one case study can be generalised to other cases or different settings or ultimately to all cases (Bryman and Bell 2011). However, one way to generalise beyond the empirical findings is that of generalisation to theory which already exists, also referred to as analytical generalisation (Eriksson and Kovalainen 2008; Yin 2009). As such it is the quality of the theoretical inferences which are taken from the qualitative research gathered which becomes critical to the assessment of generalisation (Darabi and Clark 2013). Gill and Johnson (2010) state humans attach meaning to events and phenomena around them and analysing their perceptions, in this case the actors who are emerged in the Information Systems development environments who may hold similar or different viewpoints about the effects of acquisition activity is highly necessary. This is because their different backgrounds, contexts and experiences may add different means and accessing these perspectives then reporting them objectively provides comparisons and contrasts to confront the emergent theory with the patterning of events under different circumstances (Johnson 2004). This is

also an important factor given the differing levels of time which have evolved since the three case organisations have undergone acquisition.

Following the collection and transcription of the research material each transcript was analysed against the research questions and relevant material/evidence coded. A process of reduction was performed in order to reduce the high number of codes identified per case study organisation into categories and this was performed for all three participating case organisations. The process was repeated until a suitable number of key themes were identified (Thomas 2006). The findings were then considered against the theoretical framework of Haspeslagh and Jamieson (1990). This process was undertaken manually without the aid of analytical software.

3.8   Ethical Considerations

The research environment created by this work requires ethical consideration in order to prevent the abuse of bias, narration, rhetoric and the dissolution of boundaries between empirical data and social constructions which can be influenced by personal experience and pre-understanding which has provided my insight and opinion with regards to this phenomena to be investigated (Alvesson and Skoldberg 2009).

As such it was right to be conscious of the researcher's situation and place within the research even though as a neo-empiricist believe from a position of privilege the work can be undertaken objectively thus not contaminating the research findings leading to a research output with no validity for theory or practice. It would have been too easy to empathise and lead interviewees in the interview situation whilst attempting to develop an environment mutual respect and trust. It would also have been possible to misguide those taking part in the research as to the purpose and use of the material which they will provide, which again could affect that which is then given by them.

Ethical issues have been considered throughout the conducting of this work at every stage because of the human involvement. A research proposal was approved by the University Research and Ethics Committee which is a standard requirement

to ensure no harm will result from the process and results of the research (Diener and Crandall 1978).

It was essential that participants involved are provided with a clear understanding of the purpose of the research activity, to achieve the academic award of Doctor of Business Administration, and participants are also provided with the level of confidentially which they require both in terms of the research material they provide and the personal anonymity.

Their thoughts, feelings and understandings will be person to them, equally valid, but potentially damaging to them were others (colleagues) to be made aware of them in such a way as to be able to clearly identify 'who has said what.' The confidentiality issue extends beyond the individual to the organisation too, as such names and anything which enables the outside world to identify them with confidence has been removed.

Although anonymity should enable participants to feel they can be truthful in conveying their information, there is a further dimension or level to the ethical issue here. Although they will provide the material it will be the researcher who interprets/makes sense of it at a later stage and elects how the results will be used. All participants were met prior to the research gathering took place and agreement to take part was gained verbally and followed up by email as confirmation. As the interviews took place on the participating organisations head offices, at their personal requests (with the exception of one interview conducted by telephone), visitor codes of conduct were to be adhered to at all times. In addition the participants were allowed to choose the time and dates of their interviews and they were notified in advance of the need to audio record their responses. The informing of requirements in advance conforms to the Academy of Management Code of Ethical Conduct (Bryman and Bell 2011).

One set of ethical implications which was avoided in this work, was that of being a member of the organisation, function, team or project in which the research will take place. This means there will be less of an impression or prior knowledge of me and no one will have worked with me or had a previous working relationship.

Although it is acknowledged that everyone will form some impression prior to engagement relevant to the research topic, it is important to ensure that the correct impression is achieved which will facilitate the discussions which are to be achieved. Remaining on this point, it is also important that participants are positive about taking part in the research gathering process in order to further ensure their contributions are true to themselves as opposed to them being press ganged by anyone, for example their line or project managers.

Finally, Non-Disclosure Agreements (NDA) have been signed with all participating organisations which can be requested by the supervisory and examining teams and all participants have voluntarily agreed to take part in the research work.

3.9 Data Collection

3.9.1 Selection of Cases and Participants

The purpose of this research was to explore the Information Systems development environment within the automotive sector from the perspectives of those involved in order to identify key themes which could support greater levels of acquisition or merger success in the future.

A purposive sampling approach was taken, Saunders and Townsend (2016) and a list of potential organisations was drawn up and one particular organisation as it, based upon industry Key Performance Indicators (KPIs), has made their acquisition a success. These include; longevity of their acquisition, rising turnover and productivity, continued new product development and investment with reduced reliance upon their parent organisation. As a result it was agreed that one interview should take place with one of the most senior managers or a director within the six core functions of the organisation. A schedule of all interview participants can be found at the end of this section in table one.

Having approached the organisation, a series of internal meeting took place to identify the best person to conduct more detailed discussions with about the purpose of the research and the implications for the organisation as well as those

who may take part. This led to a face-to-face meeting with one of the Information System directors in May 2015.

It was also identified that, in terms of exploring the Information System development environment and the effects of merger or acquisition activity, the data collection should focus upon core business activities. These include systems in procurement, product development, product manufacture, supply chain management/distribution, quality and reporting. Functions such as marketing and HRM are more internal to the organisation and do not have the same level of relationship with their parent organisation's systems and so have not been affected to the same level, if at all.

A short list of individuals who had senior management experience and tenure sufficient to be able to comment objectively upon the effects of acquisition upon their Information Systems development environments. They were then invited, by email, to participate in this research. They were provided with details about the purpose of the research and a list of potential questions for a face-to-face interview. The potential interviewees were given the option of not taking part in the research and also were provided with the opportunity to either change or remove some of the questions which would be used to 'keep the interviews progressing'. All six people agreed to take part and no-one requested to change or remove any of the questions. A copy of the questions can be found in appendix one.

Saunders and Townsend (2016) claim that six interviews would lack sufficient data collection for the purpose of this exploration. Literature regarding the number of participants is inconclusive as to a specific number of interviews which should be undertaken in qualitative research studies and that the '*right*' number is a balance between representativeness and the quality or depth of the responses in order to achieve data saturation (Alvesson and Ashcraft 2012; Saunders and Townsend 2016). Alvesson and Ashcraft (2012) refer to data saturation as a goal to be achieved but failure to do so is not in itself a failure of research but merely leaves some aspects of the phenomena unexplored.

Where the purpose of the research is to establish a rich account of a phenomenon Baker and Edwards (2012) and Patton (2015) suggest that a single case and a low number of interviews will be sufficient. However, Crouch and McKenzie (2006) state that this does not enable generalisation or comparisons to be made. This would result in a lack of contribution for management practice and so the research should include additional cases [organisations] and interviews (O'Reilly and Parker 2013; Robinson 2014).

Safman and Sobel (2004) and Bowen (2008) claim that the actual number of interviews which should take place cannot be resolved definitively until, as in this instance, the research process is underway and so is necessary to establish an estimate and rationale for the number of participants. However, this rationale needs to be mindful of what research users/reviewers will judge to be credible, the level of resources available, the timeframe for the completion of data collection and the level of access which can be gained (McDonald et al 2009; Baker and Edwards 2012; Robinson 2014; Patton 2015).

Taking all of these factors into consideration it was necessary to identify other organisations to take part in the research. Two more organisations were identified who met the criteria for selection and participation, as set out earlier.

In the first of the two organisations, initial contact was made with an Information Systems manager who, as with the first organisation, identified three suitable candidates to participate in the research. Although this organisation was larger, the nature of the Information Systems relationship they had with their parent organisation was such that only a few senior Information System personnel would be of value to the research exploration. These people were contacted by email and provided with details of the needs of the research and the same set of questions for consideration, amendment or removal. It was again agreed that the research gathering should focus upon systems which related to core business activities as these systems were the ones most affected by the acquisition.

For the third organisation the initial contact was made with the organisation's three heads of Information Systems. The organisation was the smallest of those taking

part in the research. It had a focussed relationship with their new parents, and it was perhaps the most complex of the three organisations taking part. (This is discussed further in chapter four).

Table 3.1 below provides characteristics of all research interviewees. However, the information is kept to a minimum in order to maintain both the anonymity of the organisations and the participants (whose names have been changed) who have taken part. Length of service (tenure) is provided in increments of five years and is capped at 20 years plus although many participants have much longer service, though to state this would enable potential identification. In addition, 20 years covers the time which has elapsed since acquisition for all three organisations.

Table 3.1: Schedule of Interview Participants

Case	Participant	Position	Level	Tenure	Qualification
ONE	Peter	IS Infrastructure	Senior	20+	Degree
ONE	Nigel	IS Infrastructure	Senior	15+	Degree
ONE	Oliver	Core Systems	Senior	10+	Masters
TWO	Michael	IS Core	Senior	20+	Masters
TWO	Elizabeth	IS Services	Senior	15+	Masters
TWO	Sam	IS Manufacturing	Senior	15+	Degree
THREE	Graham	IS Procurement	Senior	20+	Masters
THREE	Lloyd	IS Manufacturing	Senior	20+	Degree
THREE	Paula	IS Planning	Senior	20+	Masters
THREE	Catherine	IS Logistics	Senior	20+	Masters
THREE	James	IS Support	Senior	20+	Degree
THREE	David	IS Quality	Senior	20+	Degree

3.10 Data Analysis

3.10.1 Introduction

Although the collecting of qualitative data in social science research is commonplace, knowledge about strategies for efficient and defendable procedures for its analysis is less common (Thomas 2006). Literature documents the underlying assumptions and procedures associated with analysis however, many are associated with specific approaches, for example grounded theory (Strauss and Corbin 1998), phenomenology (Van Manen 1990), discourse analysis (Potter and Wetherell 1994) and narrative analysis (Leiblich 1998).

Other approaches to data analysis are more generic (Pope, Ziebland and Mays 2000; Silverman 2000; Ezzy 2002). Most researchers are however, not seeking to learn and develop the underlying assumptions and technical language of approaches but rather seek to obtain and follow a more straightforward route to analysis. For example a more general inductive approach (Bryman and Burgess 1994; Thomas 2006).

The general inductive analytical approach is a systematic process for analysing qualitative data which is guided by specific evaluation objectives and more often involves detailed reading and rereading of raw research data in order to derive concepts, themes or a model through interpretations made (Creswell 2002; Thomas 2006). That is the theory evolves from the data (Strauss and Corbin 1998). In this research the literature has provided a series of themes about the phenomenon the Information Systems development environment. Research data was then collected and analysed in detail in order to identify themes with the aim of applying and testing an existing model (Haspeslagh and Jamieson 1990) which may well become verified, modified, augmented or superseded.

The most important aspect of this approach is that at the outset of the research the outcomes are not known as the findings emerge from the frequency of the data without the restraint of structured methodologies which can be a drawback of deductive approaches where key themes can be missed or obscured because of preconceptions in the data collection or analysis processes (Thomas 2006).

3.10.2 Data Analysis Strategy

The following process of data analysis was undertaken in line with the underlying principles of the General Inductive Analytical approach (Creswell 2002; Thomas 2006).

Firstly, facilitated by the review of literature, evaluation objectives were identified which have formed the conceptual model (see chapter two summary) of topics and domains to be explored:

1. What are the characteristics of the organisational relationships post-acquisition?
2. How does the relationship affect the expectations of both the acquiring and acquired organisations upon each other?
3. How are the strategic capabilities of the organisation's Information Systems embedded within the corporate culture and how does this impact upon independence and autonomy?
4. To what extent are acquired organisations allowed to participate in the design and development of the post-acquisition Information Systems development environment?
5. To what level are acquiring organisations willing to provide systems, and other, resources, for example; financial, management capability/consultancy?
6. Have developments, post-acquisition, led to a reduction of duplicated systems and work processes and raised the level of information sharing across traditional organisational boundaries improving efficiency and effectiveness?

The analysis of collected data was undertaken manually involving the reading and rereading of interview transcripts to interpret the data. Although influenced by the conceptual framework, developed from the review of literature, the findings have arisen only from the analytical process and were not formed via prior expectations.

The purpose of rereading the transcript of data was to develop a coding system where interpretation of findings, which may have multiple meanings, could then be

formed together as categories which summarise the key themes and processes and can be tested against those of the conceptual model (Tesch 1990; Miles and Huberman 1994).

As reading was undertaken segments of text were identified which contained meaningful units that has led to the creation of new categories to which the text is aligned (Tisdell 2016). Although much of the text will be redundant, the rereading process allows additional segments of text to be added to the relevant categories and in some cases segments of text may be relevant to more than one category (overlapping). The coding process is depicted in figure 3.1.

Figure 3.1: The Coding Process in Inductive Analysis

The Coding Process in Inductive Analysis				
Initial reading of text data	Identify specific text segments related to objectives	Label the segments of text to create categories	Reduce overlap and redundancy among the categories	Create a model incorporating the most important categories
Many pages of text	Many segments of text	30 – 40 categories	15 – 20 categories	3 – 8 categories
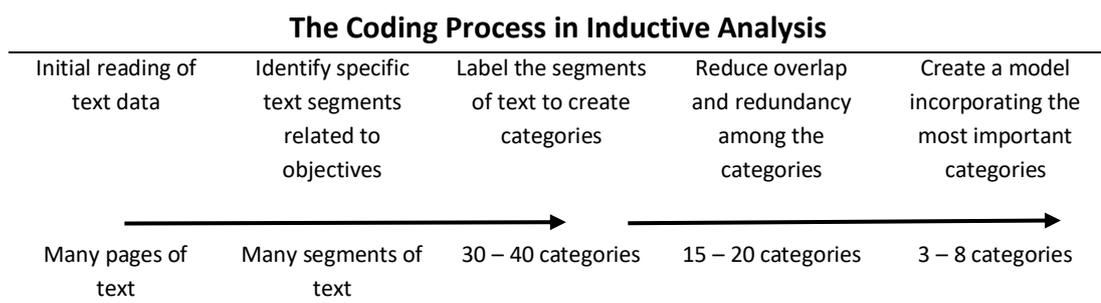
Source: Thomas (2006) Adapted from Creswell (2002 p266, figure 9.4)

After conducting the process of coding and categorising the raw data, the next process was to identify linkages or relationships between categories through either commonalities in meaning between categories, a network or a hierarchy or an assumed relationships (Coffey and Atkinson 1996). The aim here is to have no less than three but no more than eight categories (Thomas 2006 p242). Where the process leads to the creation of more than eight categories, the general analytical inductive approach is deemed to be incomplete and further reduction would be required (Thomas 2006 p242). From this point the categories may be condensed, refined and reduced, or incorporated as a theory, model or framework.

Although, it is accepted that interpretation of research findings can be influenced by the researcher's assumptions and experiences, for example selecting which data is more or less important than other data, coding represents the decisive link between the original raw data and the researcher's theoretical concepts (Seidel and Kelle 1995). In addition, the neo-empiricist theoretical perspective maintains objectivity and separation in this process, as highlighted in the rationale for the methodological approach in chapter three.

3.11   Transcription and Data Cleaning

The process of transcription is central to qualitative research (Davidson 2009). It is described as *'a selective process reflecting theoretical goals and definitions'* (Ochs 1979 p44). Each interview undertaken was audio recorded and later transcribed, by the researcher, from MP3 format to Microsoft Word documents. The purpose of this process was to get closer to the research material and to listen for greater meaning in the interviewee's responses. For example, nuances or hesitations and pauses for consideration in responses where they appeared less sure or more enthusiastic about their comments in relation to specific areas of the discussions (Etherington 2010). Etherington (2010 p292) claims *'…a researcher who does not undertake this part of the work loses the opportunity that transcribing presents us with'*. This process took a great deal of time but was instrumental in selecting some of the material which has been put forward in the following analytical chapters.

Once transcribed the data collected was subjected to a cleaning process. This is where data collected deemed to be of no relevance to the study was removed, for example greetings, reiterating the purpose of the research and off topic small talk.

3.12   Data Coding

Coding is the process of identifying significant information about what a participant has said in relation to the subject matter (Adu 2016). For the purpose of a qualitative research undertaking, a code is normally a word or short phrase which symbolically assigns a summative, salient, essence-capturing and evocative attribute for a portion of language-based or visual data (Saldana 2016). Codes are assigned a descriptive label which captures the meaning of each data segment (Savin-Baden and Major 2013).

Once transcribed and cleaned the transcripts were read and a code was manually allocated to segments of relevant text, effectively moving from many pages of text to many segments (Thomas 2016). This process was completed for every transcript and once all transcripts relating to one of the organisations had undergone this process the codes were listed ready to move to the next phase of analysis - categorisation of codes, prior to undergoing further reduction in order to identify key themes. This process was repeated for each of the three case study organisations relating to chapters five, six and seven.

Table 3.2, below, provides examples of the coding process for organisation one where a total of 275 codes were gained from the three interview transcripts. The full list of codes can be found in appendix two. Again this process was repeated for the other two case study organisations.

Table 3.2: Examples of the Coding Process

Text	Code/s
"I think we are very unique in that we don't have this big guardian parent company breathing down our neck and forcing systems on us as they like to do. There are huge differences between here and other manufacturers post-acquisition."	Unique post-acquisition relationship Parental dominance External pressure to adopt systems
"We don't have a huge budget or budgets for looking at future technology because we are a very small company in this industry and	

we had been reliant upon a big company in order to be able to tap into their technology and systems and be allowed to introduce that into our company and our products. This caused some issues when our previous owners pulled out and was a systems gap until our main supplier took a stake in the company we had found ourselves in the technology backwater."	Small organisations lack resources Reliance on external systems providers Technology gap Systems provider dominance
"We have a number of agreements where we can tap into their systems and the first thing we had to do was comply with their information systems security code of conduct as sharing of systems and information systems capabilities means they are releasing their important intellectual property and capabilities to us so we had to meet their security criteria and we were severely audited and a number of gaps were found and obviously we had to close those gaps in order to engage with their systems, prior to this we had no form of EDI systems technology."	Systems provision agreements Compliance Intellectual property Enhanced systems capability
"Increasingly we will increase the level of joint venture work with our owners and component suppliers hence this is another reason for the early investment in gaining access to their systems to support the work otherwise working together would simply not be possible."	Increasing joint ventures Information Systems investment Systems sharing to support operations
"A lot of the systems date back to previous ownership but some systems were out-of-the-box and some still remain but they really helped us to come up-to-date in that era. Small organisations like out-of-the-box systems as we lack the resources to develop and tailor systems, we need to get on with building products."	Legacy systems Small organisations lack resources Efficient systems upgrading
"Our main suppliers are large and very successful and have been around a very long	Scale and longevity of operation denotes success

time and have a solution that works and their way and their systems will be what they consider to be best in class and there is simply no point in us rocking the boat and trying to reinvent the wheel and we are really grateful to have these relationships and we are grateful to have access to their technology and systems. It is not a problem at all from my perspective or of anyone else here as far as I know. Having access to their capabilities has dragged us into the current world."	Best in class Information Systems Resistance is viewed as negative Small organisational gratitude for systems access Relationship viewed as positive Up-to-date systems access
"Their [minority owners] approach to us has not been to integrate information systems with the exception of having to use the essential systems to enable business to be done. Beyond them there has been no other IS requirements from the owners. The term they use to as it were draw the systems boundary is that we are technical partners"	Essential Information Systems adoption Transactional systems boundaries Technical partnering relationship
"They still very highly protective of their data and providing us with more systems or imposing the systems would mean they would have to really sort access levels to protect the data held on those systems. Most of their systems are designed for an organisation much bigger than us with vastly different volumes. They are much more complicated and need more structure to their systems to ensure consistency and consistent working practices. *We [small producers] need flexibility to play around and try new things without the level of officialdom as our products are much more creative and we need this different approach because of what we do."*	Data security and protection Systems access Systems design is volume centric Large systems complexity Large systems purpose to provide consistency and structure Small organisations require flexibility to be creative

3.13   Data Categorisation

Having identified 275 codes (see appendix two), the next step in the process was to label them to form categories which could subsequently be reduced further by removing overlaps and redundancy leading to the creation of themes which incorporates most of the categories (Thomas 2006).

The process of categorization involves looking for patterns, in other words similarities and differences from participant's responses in order to form categories. In total 36 categories were identified (see appendix three) which will now be explained (see tables three 3.3 – 3.6) with four examples again taken from the first case study organisation and was repeated for the other two organisations who took part in the research.

Category 1 – Large Organisation Dominance was a significant discussion point from all three interviews and formed the first category from the following fifteen codes:

Table 3.3: Example of Data Categorisation

Category 1 – Large Organisation Dominance	
3	External supplier pressure to adopt Information Systems
15	External pressure for Information Systems adoption
19	Large players set the Information Systems agenda
20	Small organisations have to follow
30	Larger organisations dominate the Information Systems relationship
32	Large companies have very good Information Systems
33	Small organisations acknowledge large companies Systems strength
42	Increasing levels of Information Systems standardisation
47	Large organisations dominate the Information Systems development
48	Large organisations dominate in Information Systems relationships
56	Large owners want an all or nothing relationship
122	No special dispensations
130	Organisational size determines Information Systems adoption
261	Volume produces can invest heavily in Information Systems
262	Volume producers have economies of scale to invest in large scale Information Systems

An implication of this process is that some codes assigned to a category may not appear relevant and in these instances it has been necessary to return to the interview transcripts to check the meaning and discussion point from which the

code was drawn. For example code 122 'no special dispensations' was taken from an interviewee's discussion about the level of flexibility afforded by one of their parent organisation in relation to a core transaction processing system. In this discussion the respondent talked about the level of Information Systems they had to adopt in order to share components with one of their new owners regardless of the systems they already possessed – there was no special dispensation as their much larger owner demanded their systems were implemented. As such code 122 was added to category one – Large Organisation Dominance.

Category 5 – Information Systems Strategy Variation also featured in each interview and was formed from the following ten codes:

Table 3.4: Example of Data Categorisation

Category 5 – Information Systems Strategy Variation
51   Information Systems strategy
52   Information Systems strategic fit
53   Information Systems strategies have to vary (SBUs)
71   Sometimes it's only about Information Systems access
72   Access not full integration
76   Too much Information Systems change can kill businesses
78   Can't do wholesale change post-acquisition
141   Large owners may leave small scale operations alone
173   Different Information Systems strategies depending upon circumstances
201   Greater freedom and autonomy

Category 28 – Relationship and Collaboration Implications was a significant discussion point in interviews two and three and features fifteen codes:

Table 3.5: Example of Data Categorisation

Category 28 – Relationship and Collaboration Implications
16   Greater relationships means greater need for Information Systems adoption
28   Complex relationship because of Information Systems security
69   Collaborative commerce increasing Information Systems
73   Industry sensitive about Information Systems resources
110   Collaborative commerce
115   Collaborative commerce requires enhanced Information Systems
143   Programming language differences

182	Increased component sharing means greater Information Systems adoption
217	Parent Information Systems updates have to be accepted
218	Updates adopted may not be relevant
219	Updates may not work with your core systems
222	Greater Information Systems adoption to enable greater collaboration
230	Collaboration model requires Information Systems resources
231	Collaborations can increase information and Information Systems security risks
269	Knowledge transfer to maintain parental Information Systems

Another implication of this process is that a code could be considered to be acceptable in two or more categories. Again returning to the transcribed text was necessary to establish the more suitable category. Where this is the case often those categories will become merged in the next phase of reduction (Creswell 2002; Thomas 2006). For example code 232 Collaboration of Information Systems reduces costs appears relevant to this category, but returning to the text it was decided that it was more suited to category 29 Partnerships.

The final example of code reduction to category is **Category 31 – Technology Gap** which is made up of the following four codes demonstrating some of discussion points generated fewer codes than others.

Table 3.6: Example of Data Categorisation

Category 31 – Technology Gap	
5	Technology gap between small and larger manufacturers
91	Need to adopt to keep up
114	Real-time development
172	Keep up-to-date

In total 36 categories were identifies from the codes, a full list of which along with their codes can be found in appendix three.

The next stage in the data analysis process was to further reduce these 36 categories by combining or eliminating overlap and redundancy amongst categories. It is suggested, Coffey and Atkinson (1996) Creswell (2002) Thomas (2006), that categories are reduced from 30 – 40 down to approximately 15 – 20

unless they can be reduced further to the point of becoming the overall themes of the research which was the case in this undertaking.

The next section sets out the emerging themes following the processes of data coding and categorisation providing both the reduction of categories into themes and the challenges of the process.

3.14   Emerging Themes

The outcome of an inductive analytical process is the creation of a conceptual model or framework which summarises the data collected via semi-structured interviews and conveys the key themes and processes (Thomas 2006). From the original 275 codes 36 categories were identified, the merging together of closely related categories thus identified six main themes, see conceptual model figure 3.2. Thomas (2006) states the reduction process, where themes are derived from categories, should number no less than three themes and no more than eight. With six themes identified a conceptual model has been created via the conducting of the general inductive approach (Thomas 2006).

This section demonstrates how the six themes and sub-themes (categories) emerged following the process of data categorisation. This is also demonstrated diagrammatically in figure 3.2. The six themes are:

1. The Post-Acquisition Organisational Relationship
2. Post-Acquisition Expectations
3. Impact upon Independence and Autonomy
4. Participation in Post-Acquisition Information Systems Development
5. Acquiring Organisation's Willingness to Support
6. Post-Acquisition Information Systems Rationalisation and Collaboration

The process of deriving themes from categories can be complex as some categories group together more easily/obviously than others. In addition, there are a number of cases where a category could easily be considered to fit with two or more of the six themes depending upon the context of the discussions. For example, the

category 'Large Organisation Dominance' which is placed with theme one (The Post-Acquisition Organisational Relationship) could have been part of theme two as its dominant position/size could be used to set the 'Post-Acquisition Expectations' of one or both organisations. Similarly, it could be argued that the use of this category could be intrinsic in the setting of expectations in relation to theme three 'Impact upon Independence and Autonomy' or even theme four relating to the level of future involvement the acquired organisation will be afforded in the systems decisions which will affect them 'Participation in Post-Acquisition Information Systems Development'.

Where this has occurred it has been necessary to revisit the codes, the transcribed narrative and on occasions the original recordings to establish the context behind the interviewee's comments in order to establish the most appropriate theme to which the category should reside.

Figure 3.2: Conceptual Model of Research Findings

Large Organisational Dominance
System Sharing
Large-Scale In-House Information Systems
Industry and Non-Industry Owners
Information Systems Strategic Drivers
Information Systems Adoption

Intellectual Property
Information Systems Compliance
External Pressure
Parent Organisation Aims
Reliance on Large Organisations

Information Systems Strategy Variation
Culture Control
Large Organisations Lack Flexibility
Partnerships
Small Organisation's Information Systems Needs
Technology Gap/Poor Quality Information Systems

Small Organisations Benefit
Information Systems Change
Poor Information Systems Fit
Increased Information systems Complexity
Changing Business Processes
Small Organisations Buy Rather than Develop Systems

Core/Legacy Systems
Product Systems Demands
Information Systems Survival and Reliance
New Product Development Implications
Business Impact

External Information Systems Providers
Global Information Systems Standards
Boundary Spanning Integration
Business Partner Information Sharing/Information Sharing
Information Systems Security
Relationship and Collaboration Implications

Post-Acquisition Organisational Relationship

Post-Acquisition Expectations

Impact Upon Independence and Autonomy

Participation in Post Acquisition Information Systems Development

Acquiring Organisations Willingness to Support

Post-Acquisition Systems Rationalisation and Collaboration

Information Systems Development Post Acquisition Activity

This section has explained the data analytical process which followed a general inductive approach in line with the neo-empiricist theoretical perspective.

In order to explore and gain insight and understanding of different Information Systems development environments post-acquisition, theme one, investigating the nature of the relationships between different acquiring and acquired organisations personifies this work. It is important to know whether the acquiring organisation is in the same industry or not. This is because it will significantly change the relationship with their acquisition in relation to the Information Systems development environment when they are based in a different industry or sector. Where they are in the same sector the research demonstrates the acquiring organisation will be larger and dominant in decision making and have different long-term aims for their acquisition. This in turn creates a different form of relationship. In addition, where the two organisations are in the same sector the acquiring organisation will more likely possess an in-house superior Information System capability to that of their acquisition and will expect them to adopt systems at the right point in time.

Theme two is a continuum of theme one, where following acquisition both parties will have expectations of each other. These expectations, which differ from acquisition to acquisition, will also formulate the depth and direct of the future relationship. In the cases studied smaller acquired organisations demonstrate an acceptance of reliance upon their new parents for Information System resources and are mostly compliant as part of the process as the industry accepts that expectations are driven externally as well as internally.

Post-acquisition expectations and the resulting relationship will have implications for the levels of independence and autonomy for the acquired organisation, the focus of theme three. The level to which this is affected depends upon whether the acquiring organisation is part of the same industry or not and the strategic vision they set out for the organisation. The level of independence and autonomy has proved to be dependent upon the level of Information Systems resources which the acquired organisation possesses which is generally poor and so to plug the technology gap the impact is greater.

Where the parent organisation is not an industry member there is the greatest potential for independence and autonomy which has led to the generation of innovative Information Systems development environment models encompassing partnering and collaboration.

Having identified firstly, the factors which affect the levels of autonomy of acquired organisations in this industry and secondly, that smaller acquired organisations are more reliant upon their parents for Information Systems resources. Theme four considers the levels of participation afforded to the acquired organisation by their owners and identifies that where the acquisition endures, this level of participation can be cyclical as management and organisation culture changes. This can be following an industry or corporate crisis.

Participation is essential if the acquirers are to provide systems resources and work with their acquisitions to learn about their needs and how their operations, and so systems requirements, differ from those of their own to create a working environment and support them through the process of change which is vital for the success and post-acquisition longevity.

Establishing and formally recognising the willingness of the parent organisation to support their acquisition, theme five, is vital for acquisition success and leads on from the previous theme of participation. Support has been identified as a key attribute of long-tern acquisition success as this industry demonstrates high levels of Information Systems support and resourcing is drive by new product development cycles. However, the support must be mindful of core and legacy systems which must remain in place so as not to disadvantage other historical operations of the business.

The sixth theme considers the process of Information Systems rationalisation and collaboration. Whilst seeking efficiencies (rationalisation) in practice the research has demonstrated the opposite. Where parent organisations do not possess an Information Systems solution for their acquisition greater independence is afforded which can lead to a loss of autonomy as they partner and collaborate with other organisations and have to abide by their conditions of use. However, where

acquisitions have been made by larger same industry organisations, the organisation acquired may become one of many strategic business units which is required to work with as the acquisition matures thus requiring increasing level of Information systems resources to facilitate collaboration and information sharing. As these relationship endure the imposition of common systems will lead to rationalism.

The following three chapters (four, five and six) provide detailed analysis and discussion of the data collected from each of the three participating organisations in order to demonstrate how the six themes emerged. Following this process chapter eight provides a cross-case summary of the findings demonstrating the contribution made by this thesis.

Chapter 4: Analysis: Case Study Organisation ONE

4.1 Introduction

The methodological approach taken, as set out in chapter three, is the multiple case study involving three organisations. The previous chapter also demonstrated the analytical approach taken to identify six themes from the data collected via semi-structured interviews in the three organisations.

The purpose of this chapter is to provide greater detail and evidence, from the semi-structured interviews conducted with organisations ONE, as to how each of the six themes emerged. This is then supported by conducting the same process with the data gathered from organisation TWO [chapter five] which was compared to that of the first organisation and subsequently the same process was taken with the data collected from organisation THREE [chapter six]. This analytical approach enriches the findings by either confirming or adding new evidence from the different contexts in which the organisations operate, which is outlined in the following section, enabling a cross-case level of analysis and evaluation resulting in a model representing all three participating organisations, which is provided in the seventh and final chapter.

In order to demonstrate the rigor of the analysis, as well as providing evidence, the analysis of the data collected considers the findings in relation to existing research and the model of Haspeslagh and Jamieson (1990) identified in chapter two (section 2.10), where they identify four approaches of Holding, Preservation, Symbiosis and Absorption to functional merger and acquisition based upon the two principles of Organisational Autonomy and Strategic Independence. This is a key part of this research which arose from the review of literature. In addition, the evidence from each theme will be considered in terms of its impact, positive or negative, and practical implications for those involved as Information Systems are deemed social as well as technical and it the opinions and observations of those involved which is important to this research (Buchanan and Huczynshi 2008; Baxter and Sommerville 2011; Daft 2016).

The themes identified, as discussed in chapter three, are:

1. The Post-Acquisition Organisational Relationship
2. Post-Acquisition Expectations
3. Impact upon Independence and Autonomy
4. Participation in Post-Acquisition Information Systems Development
5. Acquiring Organisations Willingness to Support
6. Post-Acquisition Information Systems Rationalisation and Collaboration

Additional explanation for each of the themes will be provided in this chapter only as the themes are applied equally in the following two chapters for case organisations two and three. In order to maintain as much authenticity as possible the interviewee's actual words, phrases and references, are used with only minor additional inclusions where it is felt necessary to aid meaning to the reader. Common terms used by interviewees are 'IT' when referring to Information Technology and 'IS' when referring to Information Systems. All interviewee names have been changed and where interviewee's references and examples are to organisational specific Information Systems, products and other organisations, names, these have been changed to again, maintain their anonymity.

The following section provides a brief introduction to the first organisation which took part in this research.

4.2   Organisation ONE

Organisation ONE is classed as a small volume engineering manufacturer and distributor of high quality goods for the prestige end of the automotive market and is the smallest of the three organisations which have taken part in this research. Although established for over a century the organisation has had a turbulent past in terms of ownership and profitability and was acquired by a global manufacturing and distribution organisation at the end of the last century (during the interviews references to their previous owners were made which are relevant to this research. The previous owner is referred to as Asquith). This led to high levels of investment

prior to a majority sell off to an overseas private equity consortium, including investment banks and venture capitalists in 2007 and a subsequent new, but small, stake being taken by another same industry manufacturer but of global size in 2014 as part of a supplier arrangement. This organisation (minority owner) is referred to as Eden Ltd. This is a non-typical and complex ownership profile or model for the industry which is completely different to the ownership profiles of organisations TWO and THREE. This research shows that ownership profiles have a major impact upon the future relationships between acquired organisations and their owners which is demonstrated by the cross-case analysis in chapter eight.

The organisation has a long history of acquisition experience and at the time of the research revenues were at their peak, in excess of £500 million, although profitability still remains weak for the sector due to the levels of research and development being undertaken. The organisation directly employs around 2,000 people across its various divisions and sites. It is now viewed as a success story as all financial indicators and industry Key Performance Indicators (KPI's) are continuing to move in the right direction and the organisation is no longer under threat for its survival. In total three interviews were conducted in this organisation, the interviewees are referred to as Peter, Nigel and Oliver.

4.3 Theme Analysis

4.3.1 Theme ONE: The Post-Acquisition Organisational Relationship

This theme is formed from the categories identified in figure 4.1 as set out in chapter three.

Figure 4.1: The Post-Acquisition Organisational Relationship
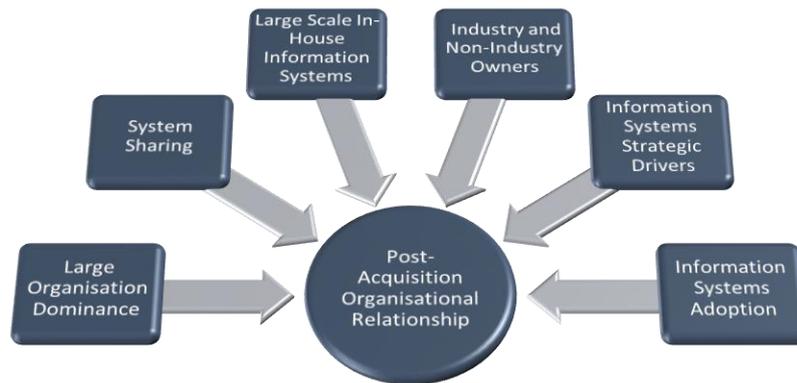
The Post-Acquisition Organisational Relationship theme was derived from the merging of six categories. These categories are: Large Organisation Dominance, System Sharing, Large Scale In-House Information Systems, Industry and Non-Industry Owners, Information Systems Strategic Drivers and Information System Adoption.

The primary research data collected identified a range of factors which summarise the post-acquisition Information Systems relationship between the acquiring (parent) and acquired organisations. The data/evidence demonstrated an overwhelming dominance [Large Organisation Dominance] by the parent organisation in cases where there was a disparity of organisational size. This manifested itself because of their levels of resources, for instance ready to replace systems, their expertise as well as their decision making authority and financial strength. Where this has been the case and where the parent is a member of the automotive sector, they possess their own Enterprise-wide (ERP) Information Systems [Large Scale In-House Information Systems] which, in most cases, they will either expect their acquisition to implement or simply impose [Information Systems

Adoption] upon them at some point in time depending upon their strategy [Information Systems Strategic Drivers].

However, this inter-organisational relationship was completely different where the post-acquisition ownership profile is more complex being made up of several parties, of differing size and where new owners are not specific to the automotive industry [Industry and Non-Industry Owners] and so possess different levels of resources, expertise and systems etc. which has resulted in a more flexible and less dominant relationship in a number of systems related decisions [Systems Sharing].

The analysis of the data collected identifies that the theme: Post-Acquisition Organisational Relationship is significantly affected by the context of the owner/acquirer's profile and the impact this has upon future strategy, decision making, investment, autonomy and flexibility. As such this is a major factor in the exploring of and developing an understanding of the Post-Acquisition Information Systems Development Environment.

In this case organisation, the constitution is both complex and fragmented in terms of the number of different owners and their mix of mainly non-industry background but with one exception who is a major manufacturer from the same industry.

This profile is demonstrated to impact the majority of decision making situations and has provided organisation ONE with freedom and flexibility to develop their own Information Systems strategic alliances pursuing a partnership model where they feel this is the most suitable approach. As such, there is a lack of large organisational dominance and insistence that large scale in-house systems are shared or adopted. However, the relationship has proved to be more complex where business activities and processes become shared and so relevant Information systems also have to be shared, demonstrating that large same industry organisations dominate the relationship with the acceptance of the smaller organisations.

The size of the acquisition is identified as a further important factor affecting the nature of the organisational relationship. On two occasions, but for different reasons, organisation ONE has been taken over but without any instance to adopt parental systems.

In relation to the acquisition model of Haspeslagh and Jamieson (1990), the research and analysis demonstrates the complexity of the post-acquisition organisational relationship as evidence, activities and decisions made, pertain to several different positions of the quadrant, symbiosis, preservation and absorption demonstrating the nature of the relationship between the acquiring and acquired organisation is neither singular nor static but is dynamic.

The following quote by Peter demonstrates that the relationship between the organisation and their owners is complex due to the number of current owners (who are from both the same and different industries/sectors, including automotive manufacturing and finance and investment) impacting the theme of differing strategic drivers. This ownership profile, as set out in the previous section, identifies differences between the organisation and its owners suggesting a different set of outcomes with respect to the work of Wijnhoven (2006) Baker and Neiderman (2014) where there has been more opportunity for joint Information System development. The implication of having a number of owners who are not in the same industry is that they are not in a position to provide or impose their existing Information Systems, but rather should look to provide direction, advice and resources (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006). This would suggest strategic independence may be low but does not yet answer the question as to whether organisational autonomy is high or low in this relationship or whether the consequences of this complex ownership profile is good or bad for the organisation (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006).

> *"Our relationship with our owners is very complex as it is a mix of private equity and other organisations. At this point in time we have the original owners/investors who are a number of investment banks from overseas and later on a capital venture group joined in with around a 30% stake. Since then another major manufacturer [Eden Ltd] has purchased a small stake."* Peter

Peter goes on to identify the implications of this ownership profile and the importance of it for the Information Systems function, as this case study demonstrates the majority owners cannot command a large organisational

dominance as they do not possess a large scale in-house Information System which they can require their new acquisition to share or be absorbed into:

> "The Information Systems part of the deal between two organisations can, in an acquisition, be the deal breaker as there can often be a lot of issues between the parent and the organisation itself. But in this case, with the exception of Eden Ltd, [large scale manufacturer] the owners have nothing to offer us, which is great in that they cannot make a load of systems demands upon us forcing unnecessary change. The relationship is more about supporting the business first, without the products to sell we don't need the systems."

Although the majority of the organisation's owners have little to offer in the form of Information Systems as they are not from the same industry, there is a suggestion that this is a positive attribute of their relationship because it is not likely that they would be forced to adopt parent preferred systems, which they may see as potentially problematic, thus avoiding any negative socio-technical implications identified with Information Systems change and change management (Baker and Sommerville 2011; Daft 2016). Given only the minority owner (Eden Ltd) is from the same industry and that they and this organisation are of significantly different sizes suggests the relationship at this point post-acquisition, is and should be preservation of systems where the organisation maintains high levels of autonomy. This is because large organisation developed Information Systems can be problematic for small organisations such as organisation ONE, this will be discussed in more detail later in the analysis (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006).

However, the following quotation suggests that such a hands-off approach from the parents can have serious implications:

> "When taking us over, Information Systems should have been a bigger consideration earlier on because we did not have agreements in place with our previous owners with regards to the systems which supported product development. This only really came to light after the acquisition, it put us way back in an industry with such long lead times and so we were much slower off the mark in terms of NPD than we should have been, that really hurt us. In terms of technology and the systems we possessed we were being left well behind prior to the latest acquisition but when Eden started to buy into the company we had the opportunity to dip into their Information

Systems capabilities and technology platforms. Some of the dipping-in was mandatory and as they supply a series of key components for us, they get a great deal of say in what we do systems wise. Peter

This suggests Information Systems capabilities are an essential part of this industry and a lack of prior consideration did significantly suppress new product development leaving the company potentially vulnerable as competitors took a lead in the market place. In addition, it is evident that only Eden Ltd (the minority but same industry owner), a producer of similar products can support the organisation with Information Systems hard and software. Also the Information Systems capability analysis took place post–acquisition, this suggests most systems in place were viewed as technical and not necessarily as business supporting (Hughes and Wood-Harper 2000).

Peter also identifies the mandatory aspect of the relationship where the Eden Ltd large scale in-house systems have to be adopted to enable the supply of key product components. This is a scenario where the large-scale but minority shareholder holds a disproportionate say in relation to Information Systems decision making and how they will work and function, in particular operationally. This is a key characteristic of the symbiosis strategy where strategic independence is contradictorily high as a significant level of systems need to be transferred whilst maintaining autonomy (Haspeslagh and Jamieson 1990; Levina and Vaast 2005; Wijnhoven et al 2006; Lindgren, Andersson and Henfridsson 2008). However, the organisation did not have a previous system which they were forced to relinquish in favour of that of Eden Ltd as such the nature of the situation was more resource provision as opposed to resource replacement.

The ownership position and relationship explained by Peter is supported and further detailed by his colleague Nigel who acknowledges the uniqueness and complexity of the ownership relationship and again suggests a positive atmosphere because the new owners, mostly, are not in a position to demand the in-house systems sharing or adoption which could be seen internally as problematic. He also refers to a previous take-over where again the organisation maintained autonomy suggesting the nature of the relationship may be driven more by the attributes of

this organisation as opposed to the ones making the acquisition. In turn this suggests a consideration of Information Systems strategy pre-acquisition (Da Silva 2014; Tanriverdi and Uysal 2015).

> *"I think we are very unique in the industry… we don't have this big guardian parent company breathing down our neck and forcing systems on us. Although it was pretty much the same situation here when Asquith took over previously, they decided to leave us alone especially in the very important Information Systems necessary for PM and PLC (Product Manufacture and Product Life-cycle) except where it was necessary in order to make the business function."*

> *"The majority owners are really hands off us and are invisible, we have a lot of space. As a director they could be really beating down on me/us but they are invisible and don't make any insistent that we have to adopt certain systems and processes. We are left alone to make our own decisions. Eden Ltd is a bit different, they own a small share but supply major parts of the product so there is some need to adopt their systems, but that is essential."*

This creates an argument for the preservation position autonomy being maintained with the exception of specific areas of interdependencies where systems sharing/adoption is essential and accepted (Haspeslagh and Jamieson 1990; Levina and Vaast 2005; Wijnhoven et al 2006; Lindgren, Andersson and Henfridsson 2008).

This continued level of autonomy and independence characterised by the high level of local decision making which is occurring, suggests that within the organisation is believed to be a high level competency and that systems professionals can specify and articulate their requirements themselves without interference leaving the organisation to set much of its own systems strategic drivers (Hughes and Wood-Harper 2000).

Nigel continues to identify the benefits of their relationship with the owners in more detail citing greater systems exposure and working diversity as benefits:

> *"This type of relationship really is great and it suits a small organisation like ours. The work is more diverse because of our size so you get to see the full systems picture in relation to the business. It's a crazy place but a lot more interesting and we really get to feel far more a part of the process and the real business rather than just being seen as the techy blokes. Larger systems mean you become more a part of the system and that won't work here so we're glad they are not forcing that kind of change."*

Nigel makes the link between the systems and the business processes emphasising the benefits of being able to interact with both the technical and social sides of the organisation (Walker and Guest 1952; Buchanan and Huczynski 2008). He also notes the nature of the relationship suits them as a small organisation where decisions, such as the owners pursuing a dominant strategy of imposing a new Information Systems, In-house developed or otherwise, can have an immeasurable and negative impact upon those affected (Baxter and Sommerville 2011).

Nigel refers to the role played by their minority shareholder [Eden Ltd] as crucial because of the high level of technology and systems required to test and manufacture in this industry. Nigel also highlights the extensive partnership model which the company operates with other manufacturing organisations, which saves the organisation having to purchase and implement a significant number of essential Information Systems. The flexibility afforded by this systems model, made possible by the fragmented ownership profile and a lack of significant levels of in-house developed systems for sharing of adoption, enables more strategic thinking and greater consideration of the socio-technical implications before implementation or systems (Baxter and Sommerville 2011; Koukoulaki 2014; Daft 2016). These include the emergent properties which only appear post implementation which may be dysfunctional, the situation described as non-determinism where once implemented the system does not provide the same benefits due to organisational differences and the behaviours of those who are subject to the system changes, which are critical for success, cannot be known until after implementation. As such it is likely to lead to greater levels of joint optimisation and a leaner systems resource (Baxter and Sommerville 2011; Koukoulaki 2014; Daft 2016):

> *"Having a large automotive producer somewhere in the ownership profile is ever more essential if you want to produce in better volumes although our partnership model with the motor sports industry is much more flexible plugging a lot of Information Systems gaps."*

Allowing this strategy of a flexible partnership model of systems provision requires a *'hands-off'* approach by owners associated with the preservation position (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman

2014). This is also a positive approach given the majority of the new owners possess no Information Systems resources or core competencies (Haspeslagh and Jamieson 1990: Wijnhoven 2006).

However, Nigel notes the partnership model of systems sharing and adoption does come with some constraints as both parties have differing overarching strategic drivers/goals and hence priorities, as even though they are in the same industry their strategic direction is different. The reference to new systems plugging gaps in their provision identifies a positive readiness to accept systems change, an essential element for success (Walczuch et al 2007, Kwanhk and Lee 2008, Strong and Volkoff 2010). The partners will go to further extremes with Information Systems development than is really required at the organisation:

> *"The relationship with our partners needs to be watched at times as our goals and businesses are quite different, they're in a very different market and require system to do different things. They are interested purely in performance and we have to sell. They want the best systems. That is more important to them than [systems which support] building cars efficiently."*

Finally, Oliver also confirms the *'hands-off'* approach towards the Information systems function of the new owners, but does add one notable important decision:

> *"The owners have little to do with the systems function but they obviously understand the importance of Information Systems otherwise they wouldn't have insisted on the buying out of Acquas as a condition of acquiring us."*

Acquas is the organisation's legacy core Information Systems platform which underpins all core business processes which was developed by them in conjunction with a private development company.

Again confirming the 'hands-off' nature of the relationship with the majority of the owners, the decision to insist upon the purchase of Acquas again demonstrates attributes of the preservation positon where the strategic decision was made by the owners (and made a condition of purchase) and future autonomy was set to remain high (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). This decision also reduces the level of both social and technical disruption associated with the process of acquisition by reducing the high level of systems change which avoids the emergence of potentially disruptive properties, the non-

determinism of expected benefits and the impact of subject behaviours towards new systems as set our earlier (Baxter and Sommerville 2011; Koukoulaki 2014; Daft 2016). This decision was taken because, as non-industry members, they possessed no relevant systems resources themselves, In addition, it may have been taken as a result of having gained an understanding of the technical and social aspects of the organisation in order to reduce resistance to change (Daft 2016).

In summary the analysis of data collected demonstrates the importance of exploring the nature of the post-acquisition organisation relationship as existing complexities, such as multi-layered ownership profiles, impact upon the levels to which an acquisition can be supported with systems. This opens up a range of different Information Systems models for the future, such as partnering which aid flexibility and efficient use of resources, however, differing strategic drivers can frustrate the partnership relations.

Size of the acquisition has also been found to impact the nature of the relationship, where smaller acquisitions, as suggested, can afford greater levels of flexibility as larger in-house systems lack suitability or simply cannot be made to function.

Finally, the analysis has identified that the relationship between an acquiring and acquired organisation is dynamic and can exist on several levels at the same point time for different reasons, particularly where the constitution of the ownership profile is complex. As such acquired organisations who are in a similar position to that of organisation ONE may well be afforded greater flexibility in some aspects of the relationship. They will, however, have to manage the more complex and dynamic expectations and requirement of different owners in other areas of the post-acquisition relationship.

4.3.2 Theme TWO: Post-Acquisition Expectations

This theme is formed from the categories identified in figure 4.2 as set out in chapter three.

Figure 4.2: The Post-Acquisition Expectations
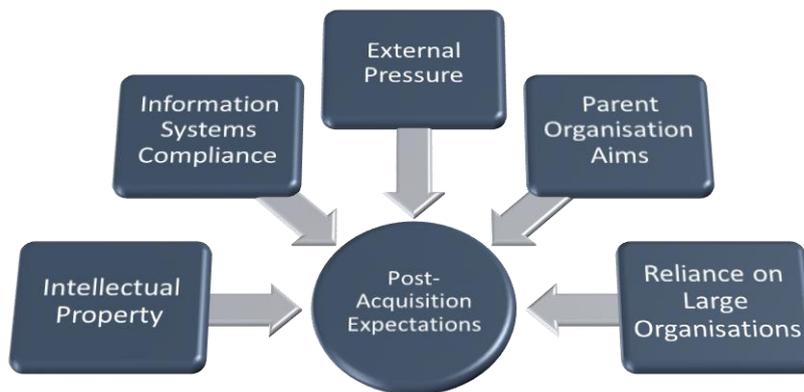
The second theme; Post-Acquisition Expectations was derived from the merging of five categories. These categories are: Intellectual Property, Information Systems Compliance, External Pressure, Parent Organisation Aims and Reliance on Large Organisations.

The research identified several factors or areas which set explicit expectations between the acquiring and acquired organisations post-acquisition. Firstly, there are the expectations set externally [External Pressure], for example, the global market for more sophisticated higher quality products and political/legislative expectations in relation to safety and environmental awareness. The achievement of such expectations is dependent upon the development and provision of new Information Systems [Intellectual Property] which smaller organisations cannot resource internally. The effect of this are the expectations that larger organisations will seek to acquire them and also either provide them with, or support them to develop superior Information Systems resources [Reliance on Large Organisations].

As such Information Systems disruption is also an expectation as is a relationship of reliance upon the parent organisation who will also present the acquired

organisation with their own set of expectations [Parent Organisation Aims] which will hold Information Systems implications for the future. The provision of Information Systems resources, which is often considered to be intellectual property, by whichever means creates the expectation of technological, user and security compliance [Information Systems Compliance].

The analysis of data collected in relation to the theme of Post-Acquisition Expectations demonstrates the complexity of the expectations from the perspectives of both the acquiring (parent) and acquired organisations.

As with theme one, the evidence confirms the dynamic nature of the theme and suggests that a range of external variables affect the expectations and these can change over time as the industry moves forward and the inter-organisational relationships mature. These variables have, in this case, again demonstrated that different Information Systems strategic options can be in play. Examples of preservation, symbiosis and absorption are all evident either at the same time or take over from each other as the acquisition relationship matures over time.

The category, Industry and Non-Industry owners from theme one has a large impact upon this theme of expectations. Where there is a same industry acquisition it is naïve to assume the acquiring organisation will possess an Information Systems capability which they will expect their acquisition to adopt and be absorbed. For organisation ONE the majority of their owners have no such resource and this has created an environment of flexibility and independence in relation to the system strategy. This is a key finding and contribution of this research as it impacts to entire future relationship between an organisation and its owners. This relationship is compared and contrasted with the relationships of organisations TWO and THREE with their owners in the following chapters.

The analysis demonstrates, with examples, that intellectual property is indeed mostly the property of the larger organisations or partners within the industry and it is essential this is retained and protected. Where relationships are developed over time, from transactional to research and developmental there is a need to be fully compliant with the systems owners requirements, for security and competitive

reasons as there are external pressures to move the industry forward which means organisations like this one need to adopt and accept change which they are embracing positively having suffered from a lack of up-to-date systems in the past when not having a large scale producer as part of their ownership profile to rely upon.

Peter sets out the position which underpins the post-acquisition expectations of the organisation relating to two particular events. Firstly, the parental pressure to purchase the Acquas core Information System platform to ensure preservation of its intellectual property Haspeslagh and Jamieson (1990) and second, the adoption of and compliance with Eden systems in order to facilitate transactions and operation processes as the organisation introduces Eden technologies into their products. The latter could be considered to be evidence of an absorption strategy although as this only relates to essential systems it is would be more symbiotic in nature where independence and autonomy still remain high (Haspeslagh and Jamieson 1990).

> *"In terms of expectations and what has had to change since the current ownership profile has settled down there has been one major undertaking by the owners jointly, that was the purchase of Acquas. But mostly it has been necessary systems adoption from Eden Ltd for transactional and product development reasons."*

Peter refers to an Information Systems hiatus, a resource gap lacking an Information Systems strategy, for around seven years between being sold off from Asquith, the previous acquirer and Eden Ltd becoming part of the new ownership profile, something which is identified as detrimental if acquisitions are to be successful (Hayes et al 2005; Wang et al 2005; Li et al 2008). This period demonstrates a reliance upon larger organisations for systems resources, although the adoption of systems will create the implication that where systems are already developed and are subsequently implemented, their design and functionality will direct the organisation's future systems strategy to some degree reducing the acquired organisation's independence and autonomy (Haspeslagh and Jamieson 1990; Wijnhoven 2006).

> *"We don't have a huge budget for looking at future technology because we are a very small company in this industry and we had been reliant upon a big company previously for resources. When Asquith pulled out in 2007 there was a Systems gap until Eden Ltd took a stake (2014) in the company we had found ourselves in the technology backwater."*

As will be identified later in the chapter this situation contributed to a lack of new product development post-recession, thus slowing the organisations progress and the lack of acceptable systems planning has been highlighted for many years (Davenport 2000).

Now, the security of having access to Eden Ltd systems, where some adoption and compliance is mandatory in order to facility business between the two organisations, is enabling the organisation to catch up with industry standards; highlighting the reliance upon large organisational systems and intellectual property in order to not fall behind the competition. This also suggests the need for at least part of the ownership profile to be from the same industry.

This position and level of expectation is further endorse by Peter, the following quote again identifies that superior systems and intellectual property resides with the larger parent organisations and that there is an expectation, or external pressure, that systems are adopted where necessary. However, this expectation is seen as a positive requirement and so compliance is not resisted. As such there is again evidence of a symbiosis rather than absorption strategy.

> *"We have been required to take on board a number of Information Systems but others have been optional. The systems which underpin development and production is a good example of this where all of the development and architecture is state-of-the-art and we have got agreements with Eden Ltd where we can opt to tap into their powertrain systems capabilities. Now we are truly catching up with the rest of the world, this has dragged us into the 21st century thankfully!"*

The expectations of systems adoption are also identified as being part of a longer-term and what will become a less transactional relationship between Eden Ltd and The organisation where reliance upon the larger owner will increase as they set out future aims which will require greater systems compliance in order to access greater levels of intellectual property (Information Systems resources). As detailed

in the following quotation from Peter, the expectation and intention is that the relationship will not simply be about component supply requiring transaction supporting systems but will also be about joint design and development. This requires the adoption of Eden Ltd Knowledge Worker Information Systems, which again the organisation are happy to take on board and over time this would increasingly resemble to absorption strategy (Haspeslagh and Jamieson 1990). It is again acknowledged that large organisations such as Eden Ltd possess industry leading standard systems and so the adoption is viewed as very positive.

> *"Eden's input is relatively small currently, although several key important parts are Eden e.g. the full electrical architecture and the instrumentation… But with future planned developments… there will be a lot of joint venture work. Hence this is another reason for the early investment in gaining access to their systems to support the work otherwise working together would simply not be possible."*

Nigel makes comparisons between the expectations of different acquirers based upon their aims and strategies for their acquisitions. He compares Eden's approach with that of Asquith, a previous owner' who acquired several other manufacturers throughout the 1990s and early 2000s. In the first example Nigel refers to a situation where a same industry owner set out large scale aims for their acquisition and required them to take on board large scale systems adoption, the absorption strategy (Haspeslagh and Jamieson 1990).

> *"The relationship and the expectations we have with our main partner but minority owner Eden is very different to that which we had with Asquith. Eden are developing a relationship slowly whereas Asquith bought us lock, stock and barrel. Normally, in this case, you would expect to be bombarded with requirements to adopt systems and processes but again for us the Asquith situation was very different to what you would have expected."*

> *"Asquith made a lot of acquisitions and took a cleaver and different approach for each business which they acquired with regards to Information Systems strategy. For one of their larger acquisitions, the intention from the outset was to combine a lot of the key architecture of the products so they were forced to implement Asquith's Information Systems capabilities from the outset."*

Although the absorption strategy can be viewed as a negative approach, stripping an organisation of its culture, ways of working and identity by *'ripping and*

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replacing' its core processes Tanriverdi and Uysal (2015 p147) as systems are considered to be social as well as technical entities (Baxter and Sommerville 2011; Koukoulaki 2014; Daft 2016). In this case, the organisation, under acquisition had previously been owned by a fellow manufacturer and so the Information Systems intellectual property was withheld from sale. As such the organisation did not possess a systems resource and so a strategy of absorption was the only option.

> *"When Asquith acquired Brookes it was from another manufacturer [Industrial Group Ltd] and so there was no chance they would let their systems be part of the deal. So Brookes had to give up all systems resources as part of the deal. The only real option they had was to take on board all of Asquith's Information Systems or stop building, which wasn't an option."*

Nigel then identifies a completely different strategy when Asquith acquired organisation ONE, where this time the parental aims and so systems strategy is preservation (Haspeslagh and Jamieson 1990). Comparing that to the current systems relationship they have with their new but minority owner, Eden where the developing relationship is becoming more symbiotic as time passes and more business activities are pursued jointly.

> *"Being a fraction of the size of most of their acquisitions we were an anomaly and Asquith hadn't a clue as to what to do with us. They simply didn't understand low volume manufacturer and also struggled with the uniqueness of our product at the side of their mass manufacturer approach. So they did not force any of their core Information Systems onto us."*

> *"In contrast, with Eden Ltd it has all been about putting just enough systems in place in order to be able to do business with them, at the moment, and meet their requirements for secure data exchange. So it's not over complicated and it will grow over time, but everyone accepts that with any business deal like these there will be a requirement that affect the information systems."*

Oliver identifies a different dimension which aids an understanding of the very positive acceptance of other organisation's Information Systems capabilities by this and similar organisations:

> *"You've also got to appreciate that if you want to attract more and better people into the company then you've got to have the best systems and processes to attract them. As this business has grown so much the uplift in people has been huge and with the parent's plans to double production again we need more people."*

> *"There is the plan to design, test and have ready for manufacture a new product each year for the next five or six years and without the best leading Information Systems and processes you just can't achieve that level of progress and you can't attract the people you need to achieve it either."*

Driven by the essential requirement of growth, the organisation needs to significantly increase personnel at all levels and the knowledge worker level in particular. Without the right systems they will not be able to attract the right people necessary to achieve their business aims. Oliver continues to confirm the case for the organisation's very positive acceptance of other organisation's Information Systems because of their lack of capabilities. The adoption of Information Systems on a needs basis system-by-system is also worthy of notation as this incremental approach may well be a significant factor in the positive attitude towards systems adoption (Levina and Vaast 2005; Alaranta and Henningsson 2008; Lindgren, Andersson and Henfridsson 2008; Yao, Dresner and Palmer 2009)

> *"The relationship between us and the partners with whom we share or adopt systems is very good and we have really improved our capability in line with the ambitions plans set out for us by the owners. The relationship is we are told what systems we have to adopt, but as I said they are industry leading which we couldn't afford to develop ourselves. We have tried working with Microsoft and others on new systems but that was a waste of time, effort and money, they just don't understand our business or our volumes and uniqueness."*

The organisation is still relatively small when compared to previous owners Asquith and current minority owners Eden. However, the small scale and incremental systems adoption had potentially aided the smooth Information Systems adoption, which are identified as important factors for success (Skok and Legge 2002; Hayes et al 2005). This is particularly relevant where almost all of the adaption has been on the part of the acquired organisation (Li et al 2008).

In summary, this theme has uncovered the impact upon the post-acquisition organisational relationship of having an ownership profile where there is not a majority owner from the same industry. The analysis of data collected provides evidence of the dynamic nature of this case organisation because of its unique ownership profile. This dynamism manifests itself with the following of different systems strategies; preservation, symbiosis and absorption to meet the external

variables and pressures and the requirement of both parents and partners in order to support the sharing and protecting of Information Systems and intellectual property. The analysis also suggests that in order to meet the needs of the ongoing market and external environmental changes of the future, such organisations are required to have a large scale same industry parent as part of their ownership profile in order to share resources, collaboration opportunities and the Information Systems necessary to support them.

4.3.3 Theme THREE: Impact upon Independence and Autonomy

This theme is formed from the seven categories identified in figure 4.3 as set out in chapter three.

Figure 4.3: Impact upon Independence and Autonomy

The third theme; Impact upon Independence and Autonomy was derived from the merging of seven categories. These categories are: Information Systems Strategy Variation, Culture Control, Large Organisations Lack Flexibility, Partnerships, Small Organisation Information System's Needs, Technology Gap and Poor Quality Information Systems.

All three organisations and each case interview referred to factors which impacted the levels of independence and autonomy of their acquired organisations post-acquisition. As the research has explored significant periods post-acquisition the level and direction of the impact has varied. Closely linked to the post-acquisition

organisational relationship – theme ONE a number of new and more diverse categories are brought together to form theme THREE.

All three participating organisations have been the subject of more than one acquisition which enabled them to put their experiences into greater perspective. In addition, each organisation has been the subject of acquisition by 'automotive industry giants' and become part of a conglomerate business operation where the parent organisation has, by design, set out different strategies for different acquired organisations (strategic business units). Different strategies [Information Systems Strategy Variation] has varied the levels of independence and autonomy in each case.

The data gathered emphasised the cultural differences between the mode of operation and culture between the typically larger acquiring organisations and that of the smaller acquired organisations, a difference which manifests itself in the characteristics of the Information Systems themselves [culture Control] where due to the volume differences large organisations and their Information Systems lack suitable levels of flexibility [Large Organisations Lack Flexibility] as required by their smaller acquisitions [Small Organisation Information Systems Needs].

Even where Information Systems resources are provided on a more flexible basis, for example business partnering [Partnerships], there is still an impact upon independence and autonomy. However, there is clear acknowledgement that due to the outdated technological resources such organisations possessed pre-acquisition [Poor Quality Information Systems] there is acceptance that larger organisations, in the main, have to be the provider of future technological Information Systems [Technology Gap] for survival even so there is a the organisational freedom impact.

When developing their theoretical model, Haspeslagh and Jamieson (1990) along with the later work of McKiernan and Merali (1995) identified a series of criterion with which to contextualise strategic independence and organisational autonomy. Their work has been adapted and applied to more recent studies including Wijnhoven (2006) and Baker and Neiderman (2014). In order to assess the impact

upon independence and autonomy in this research, it has been necessary to consider what was anticipated or what was the expectations of the parties involved, in particular those of the acquired organisation hence this was the focus of theme two.

Organisation ONE had previously enjoyed high levels of both systems independence and autonomy under previous ownership and understood the lack of systems provision which the new owners would have available. As such, higher levels of independence and autonomy would be expected but there was also a realisation that without systems adoption from elsewhere the organisation would clearly be disadvantaged against competitors. Also, any adoption would lead to a reduction of independence and autonomy and this was acceptable in order to create value Haspeslagh and Jamieson (1990) Baker and Neiderman (2014), not primarily through Information Systems technology transfer but rather via business development (Haspeslagh and Jamieson 1990; King et al 2004; Wijnhoven et al 2006; Mouawad 2011; Sarrazin and West 2011).

The analysis of data collected, which has created the third theme, confirms the organisation's historically high levels of independence and autonomy in relation to its Information systems provision. However, the organisation is very aware of their technological gap, which is growing, and poor quality systems which are inhibiting the organisation from attaining the owner's goal of business growth, hence their strategy of both adopting systems and developing systems partnerships (discussed later in this chapter).

There is acknowledgement, within the organisation, that Information Systems are a means of controlling aspects of organisational culture as they define operating and managerial processes and so any systems change will change larger aspects of the organisation's ways of working (Wenger et al 2002; Alaranta and Parvinen 2005; Clark, Gioia, Ketchen and Thomas 2010; Klaus and Blanton 2010). This is not only accepted, as identified throughout the interview process, but embraced as a small organisation they recognise their Information Systems needs for the future survival. Their somewhat, unique partnering agreements aid flexibility in terms of some level of control about which systems are shared or adopted and this enables the

organisation to relinquish levels of systems independence and autonomy on a more gradual basis. However, as external pressure grows for the adoption of systems which are industry standard the organisation accepts they will lack the flexibility currently enjoyed, alternatively the number of organisations who could potentially partner with them in the future could be limited. Again there is a large scale positive acceptance of this as this will support the organisation to achieve its growth objectives and survival.

Peter identifies, in the following quotation, that the longevity of the organisation's Information Systems has deeply entrenched them within the organisation's culture as they have shaped everything they do , in effect creating their own culture control mechanism supporting their independence (Handley et al 2006; Kappos and Rivard 2008; Peng et al 2010; Baxter and Sommerville 2011; Tanriverdi and Uysal 2015). He also reaffirms the distance they have with their owners who are mainly non-industrial companies with the exception of Eden Ltd. Again Peter reaffirms the importance and essential nature of having to implement specific systems as part of the production process suggesting mixed levels of independence and autonomy.

> *"Our Systems have been in place for so many years I suppose they have become part of everything we do and we are almost totally independent or autonomous of our owners. Again the notable exception is Eden because of the supplier arrangement we have with them which is essential to operate - no parts means no production."*

Although there are compliance requirements with partners and Eden Ltd the autonomy to work with partners and gain access to a number of their systems does come with some loss of independence and autonomy, although it is an accepted part of the relationship (Haspeslagh and Jamieson 1990). The need to adhere to other's standards, processes and requirements, for example in the area of Information Systems security does externally structure internal decision making. However, this is not to the point where cross-cultural friction is created between the organisation and its business partners (Meissonier et al 2013). The system-by-system adoption is by choice, again avoiding potential friction and cultural clash whilst enabling the organisation to plug technical gaps because of their relatively poos systems provision by modern standards (Kappos and Rivard 2008; Meissonier

2013). This avoidance of cultural clash is also promoted as the systems are both developed locally and implemented locally thus avoiding any differences of systems development epistemological positions (Kappos and Rivard 2005). Also the organisation are almost exclusively gaining systems and functionality they did not previously possess and as such there was little sunk costs to lose and a great deal of potential to gain.

> *"There are a number of Systems agreements both with Eden and some of our other partners, which allow us to tap into their organisational technologies. The first thing we have to do is comply with their Information Systems security code of conduct, as sharing of systems and information systems capabilities means they are releasing their important intellectual property and capabilities to us, but this gives us the best of all worlds as today even the smallest of organisations requires the same systems access as the larger players in order to survive and grow."*

Peter continues to identify examples of internally derived Information Systems, from both Eden and other selected partners, which are essential to the functioning of the organisation, both in terms of primary and secondary business functions. This significantly balances the level of organisational autonomy and strategic independence. However, the adoption or resources is essential as their current provision (Aquas) is aging and lacking the breadth of capability required in the industry today which will restrict the organisations capacity for growth which is essential. These systems in place, at the time of acquisition, were not futureproof and the intended way forward would be to adopt systems resources as opposed to maintaining autonomy and independence on the grounds of speed and investment opportunity costs.

This variation of systems strategy would still be in line with that of symbiosis, although a rebalanced version. However, depending upon the level of adoption of systems from one of the organisation's owners or their current or new systems partners, some areas of the systems landscape could in reality be strategically absorbed as the Information Systems model changes to support the organisation (Haspeslagh and Jamieson 1990, Wijnhoven et al 2006; Baker and Neiderman 2014).

Assessing this in relation to the earlier acknowledgement that the systems within the organisation are an integral part of everything they do and taking into the account that systems are proven to be social and not merely technical artefacts, would suggest potential cultural change when such systems are replaced (Kappos and Rivard 2008; Peng et al 2010; Baxter and Sommerville 2011; Tanriverdi and Uysal 2015).

> *"We still have some of our own separate systems, for example there is an electronic scheduling system which still works with other suppliers. Also more of our front-end systems such as OCS (Outside Communication Systems) and PCS (Purchaser Communication Systems) which support the purchase and sales ledgers. But taking us forward as we grow these will not meet the requirements of modern EDIs [Electronic Data Interchanges] because of their age, compatibility, capacity and so on, so we may have to adopt more external systems. This would be less expensive and faster than trying to do the development ourselves."*

In this quotation, Nigel also highlights the acceptance of this form of growing relationship with partners and suppliers and again the loss of strategic independence and organisational autonomy is viewed with a positivity. This again relates to earlier acknowledgements about the previous and current gaps in the organisation's Information Systems provision and the willingness to accept what are viewed as industry leading systems capabilities in a timely and cost-effective manner. There is an acknowledgement of change which is welcomed, or at least accepted as inevitable but Nigel makes no reference to changing the organisations ways of working constitutes cultural implications (Kappos and Rivard 2008; Peng et al 2010; Baxter and Sommerville 2011; Tanriverdi and Uysal 2015).

> *"We like this arrangement as Eden and our other partners are very successful and have solutions that work…they are considered to be best in class. There is simply no point rocking the boat and trying to reinvent the wheel. We are really grateful to have this relationship with Eden and we are grateful to have access to their technology and systems, it is not a problem at all from our perspective. It gives us good exposure to the technology and systems out there and what they can do for us. We will have to adapt what we do and how we do it but that is all part of moving forward and as we growth we will have to change anyway."*

Furthermore, Nigel identifies how the necessary adoption of others' systems, which are viewed as industry standard, will actually support and enhance the organisation's exposure and ability to grow, thus meeting its business objectives. However, Nigel continues and notes that large industry standard systems lack flexibility.

> *"We had to implement another information system from Eden called DTTS which is another secure data exchange system very common in the engineering industries throughout Europe. This system is becoming more valuable as companies further integrate and develop manufacturing capabilities across the continent. It is used by all of the LSMs (Large Scale Manufacturers) to support larger collaborations and we now have access to it. From the organisation's point of view it is great to have this exposure, it makes us more visible to other industry key players and we would not have gained this opportunity had we not have had the relationship with Eden. There is a lot of gratitude here for that even though it is quite restrictive in the way it works, but it has to work for everyone – so be it!"*

There is further endorsement of this position with the organisation from Oliver. Oliver again refers to the autonomy and independence with a number of systems, that is, those which are the larger and more strategically important as identified before. However, again the situation is viewed with positivity and acknowledgement that the systems they are adopting from both the minority owners and other strategic business partners are of the industry's leading standard. In addition, where there is a need for process changes which may have a cultural impact, this is seen in a positive light because of the potential opportunities this bring for the business and so is enhancing business value as opposed to destroying it by retaining dependence on poor quality Information System creating a widening technology gap (King et al 2004; Haleblian et al 2009; Sarrazin and West 2011; Alaranta and Mathiassen 2014; Tanriverdi and Uysal 2015). Oliver continues:

> *"In some cases we have to adopt information systems which enable the business to function but we can't do anything about those systems and why would we, they are Eden and we want their kit and besides their systems are very good. They cost a heck of a lot more than we could afford and they work extremely well and are reliable. People appreciate this as it was not always like that for us and we need the Eden components which are a major part of the product. Alternatively, we have to look elsewhere and it would be exactly the same situation with any other provider."*

In summary, the organisation still enjoys high levels of independence and autonomy although in order to close their technological gap and enhance their relatively poor quality Information Systems resource they are sharing or adopting systems from their minority, same industry owner and from a growing group of selected partners. This process enables the organisation to maintain significant levels of independence, autonomy and cultural control. However, in the future it is accepted that as the sector moves increasingly towards industry-wide spanning Information Systems, to support greater collaborations, flexibility will be reduced and more control and independence will be relinquished. Although this is viewed positively as it will support the organisation to achieve its goal of growth.

4.3.4 Theme FOUR: Participation in Post-Acquisition Information Systems Development

This theme is formed from the six categories identified in figure 4.4 as set out in chapter three.

Figure 4.4: Participation in Post-Acquisition Information Systems Development
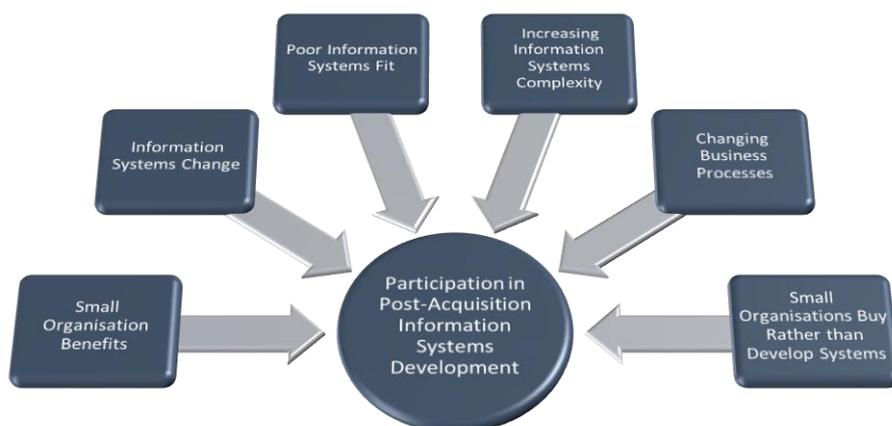
The fourth theme; Participation in Post-Acquisition Information Systems Development was derived from the merging of six categories. These categories are: Small Organisation Benefits, Information Systems Change, Poor Information

Systems Fit, Increasing Information Systems Complexity, Changing Business Processes, Small Organisations Buy Rather than Develop Systems.

Theme TWO highlighted a range of internal and external post-acquisition expectations which create change implications for Information Systems development environments. Here theme FOUR brings together a number categories which address the level of participation which acquired organisations are afforded in the decision making process as well as their approaches to Information Systems change and levels of acceptance of the process to which they are subjected.

It was found that expectations and parent organisational aims drive changes at all levels of organisational life [Changing Business Processes] and in turn changing processes will require changes to systems provision [Information Systems Change] and as technology progresses along with evermore sophisticated product requirements systems will become increasingly powerful [Increasing Information Systems Complexity]. The data identified a high level of acceptance on the part of the acquired organisations for systems change as it was essential for survival they implement more up-to-date Information Systems [Small Organisations Benefit]. However, even though the systems change was essential there was acknowledgement that this had created led to the imposition of systems which did not fit seamlessly with their remaining core Information Systems or address some of their product specific needs [Poor Information Systems Fit]. In the case where the parent organisation was non-industry specific and so had no industry specific systems to offer, it was identified that acquired organisations gain greater levels of participations and prefer to purchase off-the-shelf systems as they lack financial resources to develop systems and it is also much quicker to implement [Small Organisations Buy not Develop Information Systems].

The analysis which has led to the creation of this theme identifies evidence of high levels of participation in decision making and the setting of the Information System's strategy by the organisation. A number of factors identified specifically relate to the organisation's size. Being a small producer and due to the lack of time and resources available they prefer to buy or obtain systems as opposed to

developing in-house or with the larger systems providers who are claimed to not understand businesses of this size and nature very well. As such the organisation has been very creative in developing a multi-layered strategy involving systems ownership, systems adoption and systems sharing via a partnership model.

This approach has enabled cost effective rapid progress in the pursuit of bringing their Information Systems capability up-to-date (a feature of previous themes), whilst also providing the organisation with the flexibility to accept systems where they see a clear advantage and not to adopt systems where they see no advantage or a problematic integration which outweighs the potential benefits.

As established earlier in this chapter, the organisation has a complex ownership profile mostly made up of financiers and investment banks who have no systems capabilities relevant to the organisation. The exception being the minority shareholder Eden Ltd. Peter's comments below provides evidence which demonstrates their *'hands-off'* nature with regards to the organisation's Information Systems development. This is an example of the holding position where other than to provide the organisation with resources such as finance, they will have no relevant systems with which to integrate or impose (Haspeslagh and Jamieson 1990):

> *"Our relationship with our owners is complex with a mixture of private equity and other organisations mostly not sector related so they cannot offer us much in respect of our Information Systems. The only owner who can is Eden Ltd and the investment banks don't have any immediate impact upon the business in terms of the Information Systems we need."*

However, Peter goes on to explain, from their perspective and their lack of relevant systems knowledge, how they identified the organisations huge reliance upon the Acquas technological platform as being excessively high risk, something not recognised early enough by many acquiring organisations (McManus and Wood-Harper 2007). Their reaction was to order the organisation to acquire the Acquas business and consolidate it within their structure as they were in no position to support the organisation should Acquas be taken over or cease to exist. This decision of 'buy' rather than 'develop' also suits smaller organisations. Risk reduction is another feature of the holding position, although the new owners were

in no position to reduce risk internally, they were able to provide the financial resources to enable the organisation to take action (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006). This decision also reduced the level of uncertainty, change management and organisational disruption at the time of acquisition (Baxter and Sommerville 2011; Daft 2016).

> *"When the financiers and the banks took over they did understand the huge risk they were taking on with our Information Systems situation and instructed us to take action. Acquas had developed in-house over the years and we own the system saving us tens of millions in license fees. Acquas was deemed the biggest risk to the business for continuity and risk reduction they wanted us to go more mainstream in terms of IS ERP solutions/provider so that if they wanted to sell us on in the future, we will look a lot more attractive with an up-to-date mainstream ERP solution in place. But systems like SAP would be too big for us and it lacks the flexibility we need as a small volume producer and the development time would be too long – we prefer to buy system-by-system, that's how small organisations benefit."*

> *"So due to the level of dependency we have upon Acquas and the risk that as a small independent technology company they could sell out, be taken over quite easily, go bust or simply pack it all in, a condition of investment was that we also had to purchase the Acquas business too to reduce risk."*

This situation is also cited by Oliver:

> *"There is no interest from the owners because of their business, they are mainly financiers and have no IS expertise. The only thing I would add was their insistence that we bring Acquas totally in-house. I think because of their lack of ability to provide an IS solution they saw this as a horrendous risk should the developers go out of business, we would also come to a halt.*

This position of high levels of autonomy and independence in terms of participation in the development of their Information Systems landscape changed somewhat when Eden Ltd took a small stake in the organisation's ownership profile. However, the systems integration or adoption required was essential to facilitate the transactional relationship which held many benefits for the development of new products. Whilst preserving key systems the need to integrate and adopt on a small scale is typical of the symbiosis position which, in its earliest phase, echoes preservation (Haspeslagh and Jamieson 1990; Wijnhoven 2006; Baker and Neiderman 2014). Maintaining autonomy is vital to avoid value destruction

although as the relationship becomes more collaborative over time, the complexity of the systems may require more wholesale change and adoption/absorption (Suchman 2002; Levina and Vaast 2005; Clark et al 2010; Vieru and Rivard 2014).

> *"Eden were very prescriptive about what we use but they would never have expected us to take up SAP in full because of the time and cost and Eden Ltd don't own sufficient equity to insist we change the ERP, just the systems we need to do business. Should they [Eden Ltd] increase their share of us then they may insist upon full scale change. This is also likely to be the case as we progress the relationship from components to joint development, it's inevitable."*

The progression of the owner/business partner relationship is also referred to by Oliver, noting the implications this would have for the adoption of more of Eden's systems and also for the potential need to reduce other shared systems where there could be a potential conflict of interest regarding systems intellectual property.

> *"In the future if Eden Ltd increase their position in us, which I think is ultimately likely, as we're working closely with them on other projects, then I would expect we would adopt more and more of their systems. I expect more of the design systems could be rationalised and some of the other partner systems may have to be replaced as I'm not sure the some of the would like to see any of their intellectual property falling into Eden's hands when they are competing against each other in a range of different activities."*

Nigel also cites the Acquas situation and examples of independence and autonomy under the current ownership profile, as they continue to make crucial strategic decisions in relation to how they develop and maintain their Information Systems capabilities. Referring to an example where the organisation attempted to work with a large scale systems developer, but due to their small scale and related requirements, the project was abandoned in favour of the partnering model identified earlier:

> *"From a technical side they let us get on with what we've got and we do. By that I mean we like additional systems which are out of the box and that we can just configure, we don't have the resources to start redesigning and programming in a big way. The bigger boys can but that can be to their detriment as they always end up over complicating systems, they lose*

standardisation and you become so reliant on programmers to sort problems."

This relationship does resemble the holding position which is not depicted by a total absence of responsibility by the owners, rather they lack the possession of relevant systems to provide, however, the owners are providing support in the form of financial resources to enable the organisations to develop its own systems environment (Haspeslagh and Jamieson 1990; Wijnhoven 2006; Baker and Neiderman 2014).

Once again Nigel refers to the lack of comprehension on the part of large systems developers to enable them to work successfully together in order to develop future systems, hence their preference to buy or share, rather than develop, off-the-shelf solutions. This supports the argument that the Information Systems development environment and the business processes are a complex phenomenon requiring greater understanding (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008).

> *"We purchased Acquas which was the best decision. [Previously] We had a disastrous attempt, to develop a package with Microsoft but it just didn't work out at all. So we made the decision here that between the two major systems parts of the business we have two totally different IS approaches, this works best for us. In one part of the business we own our own bespoke ERP solution and on the other we usually go for an out-of-the-box system which we can then configure as little as possible so that it can be third party maintained, so we have far more control and security in terms of maintenance. It is the best of most worlds because the big developers don't really get low volume issues and we are not software designers and programmers."*

Although the decision to purchase Acquas was made by the new owners it was a decision which maintained the autonomy of the organisation as it preserved the systems status quo (Haspeslagh and Jamieson 1990; Wijnhoven 2006; Baker and Neiderman 2014). The ability to set out their own Information Systems strategy demonstrates a high level of participation in the development of their systems future maintaining both independence and autonomy, features of the symbiosis position (Haspeslagh and Jamieson 1990; Wijnhoven 2006).

Oliver refers to their high levels of autonomy and independence to have created their own approach to Information Systems progression. Working with partner organisations and consultants without the need for permission from their owners.

> *"Our partnership model/approach works really well for us with a number of other manufacturers, designers and consultants, we don't have big resources or a big owner about to lavish us with systems or money, so we have had to find a way of making progress and we have. We keep a lot of autonomy and decision making ability. So long as we can demonstrate improvement and efficiencies the owners leave us to it, this is a real benefit to a small organisation like ours."*

Considering the business relevant but minority owners – Eden Ltd, Oliver also refers to their approach of providing access to the essential systems necessary to conduct business between the two organisations and their not wishing to go beyond that position currently for information security reasons. He also makes reference to the different scales of the two companies operations and that Eden systems, were they to be pushed more upon the organisation could be too complex and too restricting for their needs thus losing some of their agility. Again this is an example of the symbiosis strategy although it could be argued that a number of systems have had to be adopted, that is the absorption strategy in order to facilitate business transactions between the two organisations. However, this has been on a co-existence basis and only essential systems have been adopted (Haspeslagh and Jamieson 1990; Cross and Parker 2004; Levina and Vaast 2005; Wijnhoven 2006; Lyytinen and Heo 2007; Baker and Neiderman 2014).

> *"Eden approach has not been to integrate information systems with us with the exception of having to use the essential systems to enable business to be done. The term they use describe where to draw the systems boundary, is that we are technical partners and they are still very highly protective of their data. So that is perhaps the reason for only requiring the essential systems to be used and it works for us as most of their information systems are designed and geared up for an organisation much bigger than us with vastly different volumes. They are much more complicated and need more structure to their systems to ensure consistency and consistent working practices."*

As a result of this analysis it has become clear that the organisation desires to increase their systems capabilities via several different means (development,

partnering/sharing, absorption and preservation) with different parties and they have been afforded the autonomy and independence to participate to a high degree. Their readiness to change is evident and the evidence goes a long way to identifying not just their desire but the factors behind that desire and readiness. This identification of the *'why'* factors is crucial to the better understanding of the post-acquisition Information Systems success (Hee Woong and Ateyi 2009).

4.3.5 Theme FIVE: Acquiring Organisations Willingness to Support

This theme is formed from the five categories identified in figure 4.5 as set out in chapter three.

Figure 4.5: Acquiring Organisation's Willingness to Support

The fifth and penultimate theme; Acquiring Organisation's Willingness to Support was derived from the merging of five categories. These categories are: Core/Legacy Systems, Product Systems Demands, Information Systems Survival and Reliance, New Product Development Implications and Business Impact.

Understanding the acquiring organisations level of willingness to support the Information Systems function provides a greater level of understanding of the relationship between the two organisations. Although it may seem obvious, in all three organisation case studies each purchase was driven by brand acquisition and

not made on the basis of acquiring a substantial Information Systems resource or advantage hence support would be a major concern and potential investment. Even so the research identified a high level of willingness to support the three organisations taking part, although in very different ways, mainly because of their different Information Systems circumstances.

The data collected discovered that each of the three organisations had completely different situations each requiring their new owners to make significant steps to support their acquisitions Information Systems and business futures [Business Impact]. This was in relation to existing systems which need to remain [Core/Legacy Systems] as well as future systems which are driven in this industry by the cycle of product development [New Product Development Implications] and [Product Systems Demands]. However, the long-term nature of this exploration has highlighted that as new products are developed this does create a greater reliance upon the parent organisation for survival which can present risk and implications for future strategic business decision making [Information Systems Survival and Reliance].

The analysis of the data collected has revealed that core/legacy operational systems remain untouched and not replaced in line with the position of preservation (Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995; Wijnhoven 2006). Also the owners demonstrate a high level of willingness to support the organisation's systems development on two levels, in order to bring their aging resources up-to-date facilitating both new product development and greater efficiencies in manufacturing processes. Firstly, Eden Ltd who are in the same industry are willing to provide access and infrastructure to support the business level transactions between the two organisations. Although, the conditions for supply and access are set entirely by Eden (the parent) there is clear recognition as to why this, rightly, is the situation due to security, brand and customer protection and intellectual property preservation (McKiernan's and Merali 1995; Verhoest et al 2004).

Additional systems adoption, mainly with systems partners, are taken on board on a selective basis with the purpose of enhancing the organisations systems

capabilities which, although creating a level of reliance, is essential for their survival as new product development determines the requirement for further innovations in Information Systems capabilities.

Although the organisation in operating an innovative system model, with minority owners and chosen partners, the nature of the industry means that should there be a significant change in the profile of ownership, then a number of these relationships would be in jeopardy. For example, were the minority same industry owner to take a more significant stake in the organisation, some partnership arrangements would be have to relinquished in order to protect intellectual property and data security, which could lead the organisations systems strategy to change from a combination of preservation and symbiosis to absorption in order to survive (Haspeslagh and Jamieson 1990; Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007 and Alaranta and Henningsson 2008; Mouawad 2011)..

In the following quotation Peter states there are a number of partnership agreements in place which enable the organisation to access systems (hard and software) functionality with both Eden Ltd and selected others. This situation is seen as a business partnership customer agreement. There is clear acknowledgement that this is the way they and the partners choose to operate, the relationship is viewed as positive and mutually beneficial with no political agenda (Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995). The organisation is also happy to adhere to security requirements as required and are supported with the installation of systems infrastructure. Core systems are preserved, not replaced, the additional systems which are being shared or adopted demonstrate a symbiotic relationship for the purpose of enhancing the organisations Information Systems capability as new product development is a systems development driver in itself (Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995; Wijnhoven 2006; Baker and Neiderman 2014).

> *"There are a number of systems agreements in place that enable us to tap into Eden systems for mutual benefit. They are part of our ownership profile but in the main it is a business supplier customer relationship. With our profile of ownership we have to work with a lot of partners who are not directly in the same business, so 'business partners' is a better expression for*

*us than 'the owners'. We have to comply with their security code of conduct
to be allowed to share, it's not politics it is way it is done and we both
benefit. As our products become ever more sophisticated so do the systems
we need to build them, everything evolves."*

However, Peter also identifies, with the example below, that as well as
implementing other organisation's systems there is a great deal of adhering to their
processes and methods especially where security is concerned, but again this is
very much accepted as custom and practice as, in this industry, sensitive data is
constantly being transferred. As the products become more sophisticated, without
a high level of formalised processes and security there could be a large negative
business impact if not followed. Again there is a return to an earlier theme where
the organisation is reliant upon larger and other organisations for its systems
capability for its survival as new products and new methods of efficient production,
which it has to produce, drives the need for new systems. Whilst there is a high
level of adherence by the organisation this is still an example of symbiosis as
opposed to absorption as the organisation to what have become industry standards
ways of operating (Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995).

> *"These information systems are very complicated and multi-layered so that
> the full data per assembly is never shipped in one systems. It is a series of
> systems which only brings all the necessary programming and coding
> together once all parts of the assembly are complete. It's all very much
> formalised and very structured and it has to be to protect both their and our
> brands and our customers and in this industry there is no deviation from that
> information process – it is that or nothing!"*

This position is supported by Nigel who is also upbeat about the nature of the
relationship. Again there is positive acknowledgement about the systems model the
organisation has developed and the requirements they have to meet with business
partners who supply architecture and access to their systems (Hayes et al 2005;
Wang et al 2005). Although the owners are happy with the situation currently, Nigel
identifies that there will need to be a substantial increase in systems access and
change going forward as the organisation grows and the nature of major parts of
their product portfolio evolves. However, there is no suggestion that there is a
potential point where the owners of the business may change their position. The
watershed events of new products and new sites provides the organisation with the

options to further develop their existing Information Systems model or develop a totally new model. However, if they are to develop deeper relations with the larger manufacturers, then they could be required to enter into tighter relationships where the characteristics of the relationship become more aligned with the absorption strategy rather than that of symbiosis (Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995; Wijnhoven 2006).

> *"Our owners have provided the resources which have enabled us to grow from what was a basic cottage industry position to what we are today. Our new systems are modern and scalable way beyond what we perceive we will need because big for us is still not big numbers for the industry."*

> *"In the future there will be more serious implications and much more investment in systems needed. Firstly, as we increase our volumes we need to look at new materials and this will mean new partners and new relationships with Information Systems. Now that may be a mirror of the relationship with currently have or it may have to be something more radically different. Secondly, we are adding additional products and sites with virtually nothing shared so we could very well chose to go for a whole new Information Systems solution as it can be independent with this site and the owners are really ok with the situation, we are allowed to make the best decisions we can for maximum business benefit."*

However, a new dimension of thinking is provided by Nigel which may shed light upon the owner's attitude and approach towards the organisation in relation to Information Systems provision. Nigel suggests they may not be long-term owners and as such a model which involves a lower level of investment and greater sharing with partners may be acceptable given their possible short or medium term aspirations. In addition this approach avoids a number of potential difficulties given the majority owners are not from the same industry. A more symbiotic and less absorption Information Systems strategy makes the organisation more saleable in this industry (King et al 2004; Alaranta and Parvinen 2005; Rai and Tang 2010).

> *"The owners being mainly financiers, I don't think they will be looking at us for the long term and there has not been any requirements for us to provide IS long-term development plans. It is more about what works now and for say the life-cycle of each new product. They have a track record of buying manufacturers throwing loads of money at them to refresh the product ranges and then selling the business on, it seems to be their philosophy."*

Oliver concurs with Peter and Nigel that the nature of the industry means there is acceptance that the larger suppliers/manufacturers hold the balance of power in any such systems supply and access relationship. Oliver also highlights again the positive attitude of the organisation towards acquiring access to others systems because of their leading edge nature where, previously the organisations was being left behind. Oliver states the supportive nature of the owners to provide resources but also, suggests this model of Information Systems access could be influenced by the owner's commitments to the organisation not necessarily being long-term. Any change in their system strategy driven by a change in the ownership profile would come with a potentially high degree of business impact as the organisation becomes increasingly reliant upon the systems they have access to (McKiernan's and Merali 1995; McManus and Wood-Harper 2007).

> *"The bigger manufacturers call the tune, if you want their components then you have to adopt their ways and Information Systems and communication processes. But it's accepted and we know we need their partnership and everyone is happy to come up-to-date. We were feeling as though they were in the dark-ages systems wise, our situation was getting embarrassing and they are very supportive of providing the resources and the necessary support. But we don't know what their longer-term intentions are."*

In summary, the organisation has significant levels of support from the owners either in the provision of financial resources and the independence and autonomy to develop their own Information Systems capability through a model of partnerships and also via the provision of systems and architecture from their minority, same industry, owner Eden Ltd.

In the future this model will enable further systems capability to be developed which is essential as systems requirements, in this industry, are driven by new product development, which in itself is the goal of the majority of the owners. Although this creates a high level of external reliance it is essential for the organisations future survival although any change in the complex ownership structure of the organisation is likely to put this systems model at risk resulting in a potentially critical business impact which may require an absorption strategy to

replace the combined model of preservation and symbiosis in relation to their Information Systems.

4.3.6 Theme SIX: Post-Acquisition Information Systems Rationalisation and Collaboration

The final theme is formed from the seven categories identified in figure 4.6 as set out in chapter three.

Figure 4.6: Post-Acquisition Information Systems Rationalisation and Collaboration
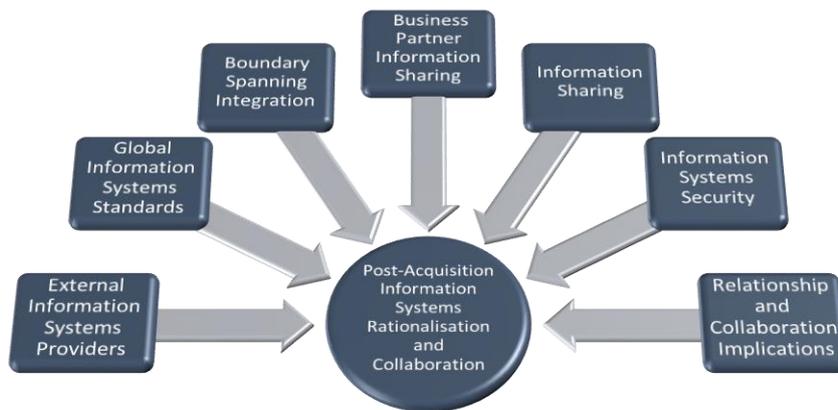
The sixth and final theme; Post-Acquisition Information Systems Rationalisation and Collaboration was derived from the merging of seven categories. These categories are: External Information Systems Providers, Global Information Systems Standards, Boundary Spanning Integration, Business Partner Information Sharing, Information Sharing, Information Systems Security and Relationship and Collaboration Implications.

The subject of Information Systems rationalisation and collaboration is the final theme which emerged from the data and provide something of a paradox where the principle of rationalisation is to reduce Information Systems by volume and pursue economics of scale in operation, it was identified that collaborations in the industry mostly leads to the proliferation of systems.

As the industry moves forward and there is a need to both enhance and speed-up the development of new products collaborations, either within the industry or with external partners, will increase resulting in greater Information System requirements and sharing [Boundary Spanning Integration] and [Information Sharing]. Although sharing will generate economies of scale in systems usage it can come with significant limitations, for example because of intellectual property, competitive advantages and security [Information Systems Security] especially where the systems are owned externally. This can make the process of partnering in new product development problematic [Relationship and Collaboration Implications].

New ownership, post-acquisition and external collaborations requires greater sharing of information [Business Partner Information Sharing] leading to a need to ensure Information Systems can communicate across multiple platforms and organisations internationally creating additional complexity in development [Global Information Systems Standards] which is proving to be a challenge for the Information Systems development industry who lack an understanding of how the automotive sector function [External Information Systems Providers].

The analysis presented for the final theme, Post-Acquisition Information Systems Rationalisation and Collaboration, demonstrates the high level of autonomy and independence organisation ONE enjoys. This is characterised by their decision making power in the selection process of external partners who they choose to collaborate with in pursuit of attaining access to global standards and leading edge Information Systems in order to accomplish their organisational goals.

The flexibility, although mainly determined on a project-by-project and system-by-system basis, is not exclusive and a number of requirements by have to be met by the organisation in order to collaborate with external companies, including their minority same industry owner (Eden Ltd). Examples include the levels to which systems which span boundaries may be shared, security level access for systems usage and business partner information sharing levels.

Again this analysis highlights elements of several of the strategies identified of Haspeslagh and Jamieson's (1990) as examples of preservation are identified and situations where absorption could have been an alternative approach. Much of the discussion confirms the strategic approach to be symbiosis as the evidence demonstrates the organisation's high level of involvement in the decisions they take.

Peter refers back to the systems arrangements they have with a number of external business partners which require Information Systems to span boundaries (Sumi and Tsuruoka (2002) Yoo, Lyytinen and Heo (2007) Vieru and Rivard (2015) and share information (Davenport 2000; Soja 2010; Da Silva et al 2014). Security of data is the major concern but there is a culture of sharing large levels of information and both parties benefit from the relationship and collaborations. This relationship approach is maintaining the symbiotic strategy where organisational independence and autonomy are high even though it is the owner/partner who are setting out the essential requirements to meet prior to systems and information sharing (Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995; Wijnhoven 2006).

> *"We have a number of arrangements with partners and Eden Ltd which allow us to span boundaries and share intellectual property and capabilities. Security is a major hurdle but once compliance has been assured our partners are really willing to share a great deal with us. It is all about sharing information, collaboration is essential in a global industry."*

Duplication is recognised but accepted because of the nature of industrial operations, however, the impact of this is offset as such systems are easy to learn and as a small organisation the impact is assessed to be minimal.

> *"There is some duplication avoided and some created. If you refer back to the EDI scenario with Eden, this is another system over the provision we already have, but it is essential or there would be no business relationship. For us there is very little extra work in having the additional systems, they are very easy to learn and we are relatively a small organisation so the impact is minimal."*

Information Systems duplication has conversely grown as a result of the partnership model and supplier relationship with Eden Ltd which is not suggested to be best practice (McKiernan and Merali 1995; Mouawad 2011; Schnurman 2013). However,

the primary objectives of these relationships are not about systems cost saving or integration but about effectively supporting business development and growth and the organisations was starting from such a low systems resource base and complete systems integraiton with Eden Ltd and other business partners is not possible (Origitano 2006; Tanriverdi and Uysal 2015).

This lack of integration or duplication reduction can be referred to as systems co-existence (Wijnhoven, Spil, Stegwee and Fa 2006; Baker and Neiderman 2014). This could be related to the preservation strategy where legacy or existing systems are maintained and not replaced, King et al (2004) Rai and Tang (2010) Tanriverdi and Uysal (2015) however, the coexistence with externally shared systems spanning traditional boundaries in order to share information of a global standard is evidence of progress more associated with the symbiosis strategy (Haspeslagh and Jamieson 1990; Wijnhoven 2006; Baker and Neiderman 2014).

The lack of integration with parent Information systems, in this case study, post-acquisition has created a very flexible situation where the organisation can work with many business partners at strategic, managerial, knowledge and operational levels. However, this complex Information Systems model may make future acquisition/ownership decisions more difficult as it potentially bring competing organisations together who do not wish to share intellectual property (Sarrazin and West 2011, Tanriverdi and Uysal 2011).

Peter goes on to compare their current situation with that of their time under the ownership of Asquith where they were left-alone, the Holding position, where the owners had no intention of integrating functional capabilities or seeking to create greater levels of value via anything other than adding financial resources in order to reduce risk and providing some low level general management capability (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006). Peter recalls, some systems were required to boundary span for the purpose of reporting and project collaboration (Wijnhoven 2006; Baker and Neiderman 2014). However, it is also identified that boundary spanning systems held serious implications for the company when they were sold by their previous owner requiring several agreements having to be drawn up in order not to leave the organisation without

systems access and unable to function destroying the value of the sale. This would also have the implication of limiting the potential acquiring audience to same industry competitors who could offer the organisation an Information Systems solution as part of an absorption strategy Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995; Wijnhoven 2006).

> *"Whilst under the ownership of Asquith although they left us alone we did have to implement their Group Data Management System (GDMS) to facilitate finance/treasury reporting and teams of engineers to work collaboratively in context together. For us it was more light touch as opposed to others who had to roll over 100%."*

> *"The problem came when Asquith divested us knowing that ultimately we would have to partner with other manufacturers eventually and the information we were sharing through GDMS would be sensitive and so we were made to remove ourselves from Asquith systems dependency under a series of short-term agreements."*

Peter provides examples of how the partnership model requires boundary spanning Information Systems for real-time contextualised product development which is a formal part of the pre-working negotiation process:

> *"Working with partners and Eden has meant a lot of boundary spanning systems which have to integrate with our core systems with a high degree of security as this, on some projects, requires our people working from their [the systems partners] sites. Almost our own little enclave and they are directly connected to our PDM system with our central engineering teams."*

> *"It is the only way to work as development, design and engineering has to be done in context, especially with such bespoke products. If we outsource manufacture of different components then the different elements have to come together perfectly even when they come from different partners. The only way we can achieve this with as few errors as possible is to ensure all partners communicate through a single system in real time otherwise we would simply be wasting money and the time to market would be lost."*

This high level of vertical but mostly horizontal cross-organisational Information Systems boundary spanning has been referred to by Levina and Vaast (2005) and in this case the organisation has indeed been able to learn and gain a great deal of knowledge from a number of business partners. Levina and Vaast (2005) refer to this approach as being increasingly complex and ultimately the organisation and their business partners will have differing overall objectives. This Information

System model has also greatly increased the organisations commercial awareness and capabilities and has been achieved without the potential stress and burnout as identified in previous literature, as such this is a model of Information systems resourcing could support organisations who find themselves in similar situations with similar variables, making this a contribution to practice (Carlisle 2004; Cross and Parker 2004).

Nigel identifies a further dimension to the levels of boundary spanning and information sharing. Systems and information sharing is considered on a project-by-project collaboration basis and it is noted that greater efficiency in both development time and costs are facilitated (Davenport 2000; Soja 2010; Da Silva et al 2014). In addition this approach enables partnerships to be created and terminated much more easily as desired. This approach maintains the organisations independence and autonomy to select who and if they wish to collaborate with which is again an example of the symbiosis strategy (Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995; Wijnhoven 2006). Although, flexibility and efficient systems development are not cited as key characteristics of the symbiosis strategy, Haspeslagh and Jamieson (1990) Wijnhoven et al (2006) it has proved so in this case study example, again, a contribution of this research.

> *"The benefit of information sharing is to see what is available, why design and manufacture a component if it's already there on the systems having been done by one of the businesses in the group. We don't rely on working with anyone collaboratively on a permanent basis, we work with partners but we are in control of those partnerships and we only join up systems-wise as we need to."*

Boundary spanning systems and information sharing is common place within the industry but Nigel notes differences in its nature for the organisation because of their unique model and relative small size. In addition he notes the implications of opening up access to information across too many boundaries can lead to over complication in processes such as design where potential progress could be hindered (Carrillo 1998; Sumi and Tsuruoka 2002; Yoo, Lyytinen and Heo 2007; Da Silva et al 2014; Vieru and Rivard 2015).

"We operate a great deal of systems spanning boundaries but not in the conventional sense. Take the VIS product which allows everyone across the business to be able to look at development products, down to component level. Everyone involved, with the right level of access, can see the component and are able to make comments and even make version amendments so efficiently."

"However, we as the senior team are supporting systems open to over 800 people in the main part of the business and every different group wants the system to work as they want it to. It was a mistake to open it up across so many boundaries but it is too late now as it has become the way we work."

Nigel's final comment demonstrates how the excess provision of systems and information access can lead to unintended implications, where many groups of stakeholders may wish to make revisions which can hinder progress and product decision making. However, now enabled it becomes part of the organisations custom and practice that is culture, in effect creating its own socio-technical implication (Buchanan and Huczynski 2008; Cheikhrouhou and Marmier 2010; Peng et al 2010; Baxter and Sommerville 2011; Daft 2016).

Oliver discusses the level of collaborations which require boundary spanning systems and high degrees of information sharing. He adds a further dimension to this mode of operation in that it is a way of creating better products and this is highly motivational to employees who are part of the process. Oliver also notes the different purposes of the boundary spanning and information sharing. Whereas with Eden the process is more transactional and operational and with other partners the sharing is more managerial and knowledge based.

Again this demonstrates how the organisation is in control of its Information Systems development environment as it decides upon not only who it selects to share systems and information with, but also on which levels be it transactional or more strategic in order to add value based upon characteristics such as the project size and duration, complexity and organisation fit and the potential for longer-term commitment (Strong and Volkoff 2010; Chakrvorty, Dulaney and Franza 2016).

"Referring to the smaller partners there is a huge level of information sharing but unlike Eden this is not so transactional, this is more about design and development. We decide who we want to work with based on what we

need to do at the time and the potential for the future. They [the partners] are enabling us to do some really super things and for our people, the designers and engineers it is really fascinating and exciting."

In summary, the discussion provides significant evidence that the organisation is subject to a strategy of symbiosis (Haspeslagh and Jamieson 1990; Wijnhoven 2006; Baker and Neiderman 2014). This is demonstrated by their high levels of ability to make decisions such as who they choose to partner with on a project-by-project basis and which systems they elect to share. The collaborative relationships undertake require many agreements to be adhered to on both sides, in particular those relating to information sharing, systems sharing and intellectual property rights.

However, this conclusion is based upon a high level view of the strategy's characteristics and having undertaken detailed analysis it is clear that at a practice level this strategy has been brought about by activities and decisions relating to the strategies of both preservation and adoption as well as other forms of systems development .Demonstrating the more complex nature of Information systems strategy in the automotive sector.

Although information and systems sharing is almost exclusively referred to as a positive experience there are potential unintended consequences where once access is granted it can become a facet of corporate culture and so difficult to restrict (Alaranta and Parvinen 2005; Cheikhrouhou and Marmier 2010).

4.4   Conclusions

Organisation ONE has a unique ownership profile within its industry with only a minority owner operating in the same sector. The majority owners understand the importance of Information Systems and recognise their inability to supply actual systems to the organisation. As such, the organisation holds almost all relevant decision making with regards to future systems development, with the majority of the owners simply providing investment support in pursuit of the business goals which they have set out for the   organisation.

With limited resources this organisation has undertaken a series of partnership agreements for Information Systems provision with organisations who operate within the industry but with different priorities. The collaborations provide access to a range of leading edge Information Systems but with some challenges as part of the relationship.

The analysis demonstrates the importance of exploring the nature of the post-acquisition organisation relationship as complexities, such as the multi-layered ownership profile identified in this case, impact upon the levels to which an acquisition can be supported with systems. However, this opens up the opportunity to create alternative systems models for the future. This case study has identified the partnering model of collaborations which are flexible, maintain significant levels of independence and autonomy and are highly efficient. However, this model can be restricted where the partnering organisations have differing strategic goals which can frustrate the relationship.

The comparative size of the acquired organisation impacts the nature of the post-acquisition relationship, where, in this case the small acquisition has been afforded greater levels of flexibility, on two occasions. In the first instance, because larger in-house systems lack suitability or simply cannot be made to function and more recently because the majority owners have no industry relevant systems to offer.

It has also been discovered that the relationship between an acquiring and acquired organisation is dynamic and can exist on several levels at the same point time for different reasons. In this case study because of the complex ownership profile. As such, acquired organisations, who are in a similar position to that of organisation ONE, may well be afforded greater flexibility in some aspects of the relationship, however, they will have to manage the more complex and dynamic expectations and requirement of different owners in other areas of the post-acquisition relationship. In this case greater independence requires the organisation to take on board greater responsibility for the strategic development of its own Information Systems development environment in pursuit of the targets set for them by their acquirers.

The dynamic nature of this case identifies itself with several of the systems strategies (Haspeslagh and Jamieson 1990). There are examples of practice which pertain to the strategies of preservation, absorption and mostly that of symbiosis in order to marry the internal strengths and weaknesses of the organisation with the challenges of the external variables in order to achieve the goals as set by the owners whilst supporting the sharing and protecting of Information Systems and intellectual property.

The analysis has also identified that in order to meet the needs of the market and external environmental changes of the future, organisations of this form will require the support of a large scale same industry parent as part of their ownership profile in order to share resources, collaboration opportunities and the core Information Systems necessary to survive.

The organisation maintains high levels of independence and autonomy although in order to close their technological gap and enhance their relatively poor quality Information Systems resource they are sharing or adopting systems from their minority, same industry owner and from a growing group of selected partners. This process enables the organisation to maintain significant levels of independence, autonomy and cultural control. However, in the future it is accepted that as the sector moves increasingly towards industry-wide spanning Information Systems to support larger collaborations, flexibility will be reduced and more control and independence will be relinquished. However, this is viewed positively as it will support the organisation to achieve its goal of growth.

For the organisation it is essential they increase their systems capabilities and are doing so with different strategies, such as more strategic collaborations with partners and transactional arrangements with their minority owners. Their readiness to change is evident and the evidence goes a long way to identifying not just their desire but the factors behind that desire and readiness. This identification of the *'why'* factors is crucial to the better understanding of the post-acquisition Information Systems success (Hee Woong and Ateyi 2009).

This case study has highlighted an organisation which has significant levels of support from the owners both in the provision of financial resources and the independence and autonomy to develop their own Information Systems capability through a model of partnerships and also via the provision of systems and architecture from their minority, same industry owner.

In the future this model will enable further systems capability to be developed which is essential as systems requirements are driven by new product development, which in itself is the goal of the majority of the owners. Whilst, this creates a high level of external reliance it is essential for the organisation's future survival. Although any change in the complex ownership structure of the organisation is likely to put this systems model at risk resulting in a potentially critical business impact which may require an absorption strategy to replace the combined model of preservation and symbiosis in relation to their Information Systems.

This analysis has provided significant evidence demonstrating the organisation is mostly subject to a strategy of symbiosis (Haspeslagh and Jamieson (1990) Wijnhoven (2006) which is mainly in line with the findings of Baker and Neiderman (2014) where the majority of organisational situations they researched fell clearly into either Absorption (leveraging the business model) or Symbiosis (reinventing the business model) approaches. However, there is evidence that this case organisation demonstrates strong characteristics of the preservation and absorption strategies but not because of conventional reasons (Haspeslagh and Jamieson 1990). This research, based on the study of case study organisation ONE, supports the validity of the Haspeslagh and Jamieson (1990) model, subsequently applied in the research of Wijnhoven et al (2006) and Baker and Neiderman (2014). However, it has identified that at a more detailed level of analysis, enabled by the undertaking of research from the theoretical perspective of neo-empiricism, there is evidence that more than a single category or approach is active at any one point in time. In this example preservation, symbiosis and absorption are all present driven by the complexity of the organisation's ownership profile, relative size and product specific complexities which is a key finding of this research study.

At the broader level of discussion the symbiotic strategic position is most dominant and is demonstrated by the high levels of autonomy and independence the organisation is given to make decisions, such as who they choose to partner with on a project-by-project basis and which systems they elect to share. The collaborative relationships undertaken by this organisation required many agreements to be adhered to on both sides, in particular those relating to information sharing, systems sharing and intellectual property rights.

Although information and systems sharing is almost exclusively referred to as a positive experience there are potential unintended consequences where once access is granted it can become a facet of corporate culture and so difficult to restrict (Alaranta and Parvinen 2005; Cheikhrouhou and Marmier 2010).

The following chapter presents evidence and analysis of data collected from organisation TWO which will be compared to the findings from organisation ONE. Again this will be challenged by theory. Chapter five will commence by outlining the different situational and historical context of organisation TWO demonstrating how its inclusion will add greater value to this research study and deepen academic and business knowledge of this phenomenon.

Chapter 5:   Analysis: Case Study Organisation TWO

5.1   Introduction

Following on from the analysis of organisation ONE in chapter four, this chapter provides an analysis of the research material collected from the second organisation taking part in this study which is also compared to that of organisation ONE. The purpose of this chapter is to provide further evidence in support of the six themes identified (as set out previously in chapter four) and to evaluate the data collected against literature and the framework of Haspeslagh and Jamieson (1990) as set out in chanter two.

All data was collected through three semi-structured interviews and the analysis will be summarised with concluding observations.

5.2   Organisation TWO

Organisation TWO is again a manufacturer and distributor of engineering goods for the prestige end of the automotive market although it is a much more mainstream provider than organisation ONE. This organisation is the largest of the three participating organisations and, similar to organisation ONE, has been the subject of several acquisitions throughout its history.

In its more recent history the organisation was acquired by two global engineering and distribution organisations before being divested around a decade ago, for the second time, to a third world-wide engineering and distribution organisation. However, the current owner's main business focus is not the same as the organisation under research. In comparison to organisation ONE, organisation TWO again has an owner, who is not in the same sector, although they are closer as manufacturers; but in contrast organisation TWO has been acquired by a single owner and so does not have the same level of complexity in its ownership profile. This organisation is referred to as Mantrale (for anonymity purposes) and is seeking

diversification also referred to as 'domain extension' (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

Organisation TWO has revenues of around £25 billion producing an income of around 4% with a total workforce of approximately 40,000 employees across its various divisions. As with the other organisations taking part in this research study, all relevant financial and industry led KPIs were positive and, in this case, the last acquisition was ten years prior to the point of data collection.

As was identified for organisation ONE, this organisation also has little in terms of an Information Systems relationship with its current owner. As with organisation ONE, much of the data collected has been gathered from long serving senior managers (see chapter three). They refer mostly to the decisions and actions of the previous owners which have underpinned their situation to this day and provides a detailed context in which to analyse this case.

5.3   Theme Analysis

5.3.1 Theme ONE: The Post-Acquisition Organisational Relationship

The analysis of the data collected has identified the necessity of considering an organisation's Information Systems history and how this has been affected by previous acquisitions. Whereas organisation ONE had previously been taken over and maintained both high levels of strategic independence and autonomy representing a mostly symbiotic relationship, organisation TWO had previously been absorbed and made to take on board systems which were not designed for its specific needs which they have been subsequently been required to preserve (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

Having such Information Systems embedded into core functions has proved irremovable as they underpin all operational processes, in common with the situation of organisation ONE. However, whereas organisation ONE's core systems had been developed over time and were bespoke to themselves, organisation TWO's were adopted from an acquirer with very different characteristics; for

example; size, operating processes, product complexity and volume and, which prove to be key factors.

The underpinning of core systems has had implications for future divestment and acquisition decisions in relation to organisation TWO. This is a further key finding of this research. Given the intellectual property derived from an organisation systems resource, this cannot be passed to a competing organisation along with divestment and subsequent acquisition. In practice this means; either the organisation may not be sold to a same industry competitor if the systems capability is to remain with the organisation, alternatively the organisation is sold within the same industry but without a systems resource. The latter would have the effect of destroying value and the ability to maintain production, at least in the early years post-acquisition unless a resource can be acquired.

Organisation TWO was acquired by a non-competitor to their previous owner but has remained with the absorbed core Information System resource. As such, there exists a range of both social and technical complexities which have combined to inhibit their progress to develop new external systems partnership at the same rate as organisation ONE.

In the first two quotations by Michael and Elizabeth, it is identified that the acquirer/acquired organisational relationship with regards to Information Systems is very weak despite them being more closely aligned in business terms than in the previous case study situation.

> *"We are in broadly the same industry but it is a small part of their overall operations and their products lack our levels of complexity. There really isn't a relationship between Mantrale and us in relation to the Information Systems function, it really is none existent, they are letting us get on with it and there is a lack of interference… They are happy to provide investment but systems wise we are very autonomous."* Michael

> *"I don't even know if they even have a systems strategy for us after all this time, we are allowed to get on with things… The decisions will we take are ours and there is no relevance or reason for our new owners to get involved, there is no opportunity for sharing systems or information with them which would provide either them or us with an advantage, we are simply too unalike, we do different things."* Elizabeth

There is an acknowledgement that despite organisation TWO being the largest taking part in this study, there is still a disparity between their size and that of their owner, an area not researched to date Henningsson et al (2018). So far the data suggests a holding Information Systems strategy where both strategic independence and the need for organisational autonomy are low (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006).

As identified by Haspeslagh and Jamieson (1990) Wijnhoven et al (2006) Baker and Neiderman (2014) the acquiring organisation has little or no intention of integrating functional capabilities or seeking to create greater levels of value via anything other than adding financial resources, potentially risk taking on the acquired organisations behalf and possibly providing some low level general management capability.

In contrast to Haspeslagh and Jamieson (1990), Wijnhoven et al (2006) claimed that for this approach to be suitable, the two organisations will be in the same industry and be of similar strength, which they are not, such that organisational or functional autonomy isn't necessary. As such, where both factors are low neither the acquired or acquiring organisation needs to retain their Information Systems and options such as third party support such as outsourcing may be the better strategy. This situation highlights the Information Systems implications of ownership from different industries, regardless of how closely related they may be, and the subsequent effects this has for large organisation dominance, systems sharing and supporting of Information Systems strategic support.

Further explanation for this lack of a systems relationship, provided by Michael, is the result of previous owners Information Systems investment and resource provision which still provides the systems foundations and architecture today across all major processes.

> *"The major IT and IS architecture [which is still in place] are from our days of being owned by Kenmar and they cannot easily be improved or changed, they have to stay, it is the proverbial oil tanker scenario and we have a good system which although it's not new. It works and we are skilled at*

maintaining it and its scalable which for us is very important. We also have the more independent systems talking to the main systems, which we are allowed to develop with who we like as systems and product features develop which is important."

This is a similar position to that of organisation ONE where the systems provision, which had developed over a long period, still provided the mainframe resource. However, whereas organisation ONE's systems were developed in-house with a small technical provider, organisation TWO's capabilities were the sole property of their previous large scale same industry owner as their previous systems strategy had been that of absorption. Under the new (current) owners that has become a strategy of preservation (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006). Or a move from a strategy of leveraging the systems model through consolidation to a conglomeration approach via coexistence (Baker and Neiderman 2014).

The suggested lack of an Information Systems strategy, provided earlier, may not be true as the decision taken pre-acquisition to retain the previous owner's systems solution as the core systems was clearly a planned strategy and was deemed essential for a successful acquisition outcome (Hayes et al 2005; Wang et al 2005; Li et al 2008). This is again a similar scenario to that of organisation ONE where the purchase of their sole systems provider, in order to maintain the Information Systems resource, was an essential part of the acquisition decision (Da Silva 2014; Tanriverdi and Uysal 2015). Also, post-acquisition, this organisation is being provided with the freedom and flexibility to develop areas of their Information Systems development environment for themselves suggesting a more symbiotic strategy in terms of new systems development but not for the core operating systems which are to remain in place.

Sam provides more details about the previous owners Information Systems relationship identifying a more autocratic relationship at all levels (Haspeslagh and Jamieson 1990). Here the organisation was required to adopt all parent systems without question, the absorption strategy, where the previous owner was seeking to leverage their economies of Information Systems scale across a number of business units (Baker and Neiderman 2014).

"We were forced to take on board their bespoke systems from the outset of the acquisition. Although they are [were] vast at the side of us they kept pushing serious systems update for their own reasons which were highly customised for their benefit and some were really inconvenient for us. In this business it is about having systems fit for your scale and we were [are] much smaller it was a lot of change and fitting in and making them work for us the best we could. There was a grand plan that all of their divisions, including us, could work together on a 'World' system."

The strategy of the previous owner, from the same industry, to insist upon large scale systems adoption, which could share capabilities across a number of businesses can improve efficiency, share developmental costs and improve information sharing for comparison and decision making (Haspeslagh and Jamieson 1990; Angwin 2007; Henningsson and Carlsson 2011; Alaranta and Mathiassen 2014; Da Silva et al 2014). However, there is evidence of a trade-off where such changes can lead to large scale problems with the adoption strategy. Sam identifies that adoption of systems designed for a parent organisation who is of significantly different scale leads to a number of technical and social challenges including change and ill-fitting adaption (Buchanan and Huczynski 2008; Klaus and Blanton 2010; Baxter and Sommerville 2011; Daft 2016).

Michael states their current Information Systems provision, that is being continually resourced by a previous (same industry) owner is unusual. However, the relationship has been allowed to continue otherwise significant levels of business value would have been destroyed. Again, like organisation ONE the current owner is not in a position to replace all of the core operating Information Systems and to do so would be time consuming and destroy acquisition value (Lyytinen and Hirschheim 1987; Dalcher and Drevin 2003; Rogers 2005; McManus and Wood-Harper 2007; Sarrazin and West 2011).

It is also identified that an owner of Information Systems intellectual property does not want their resource to be accessible by any other competing organisation, demonstrating the unusual nature of this systems relationship and how the potential competitive advantage of an Information Systems resource can significantly inform the divestment and acquisition process.

"When we left Kenmar it was impossible to replace the IS provision and they needed to sell us as a going concern for obvious reasons, but unlike their other sell-offs we were not going to be owned by another major motor manufacturer so the chances of losing a competitive systems advantage was not so much of an issue. Naturally there are licensing and confidentiality agreements abound."

Michael and Sam both identify this form of relationship is very complex and can be restraining both socially and technically because of system upgrades and maintenance and risk. Still being underpinned by Kenmar systems means the organisation is restricted by its functionality, lack of adaptability and how the systems dictate the processes of social and technical operation (Klaus and Blanton 2010; Baxter and Sommerville 2011; Daft 2016).

"The systems are bespoke to them [Kenmar] even though we are now quite closed off from the Kenmar upgrades we have put a lot of resources into knowledge transfer and training to be able to maintain the platform and core information systems after they sold us. We are stuck with what we have, so many of the Kenmar systems are 'black-boxes' which means we cannot tailor them to our needs even now. The major operational and managerial implications of this situation is the headache it can give us when we are linking systems to facilitate new business partner relationships, they don't always work together first time."

In summary, the systems relationship of organisation TWO is unusual, but not in the sense that an acquiring and acquired organisation have a very limited Information Systems relationship as this is regularly the case where acquisition aims are diversification (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). Importantly, this is of relevance here as the aim of Mantrale is diversification or domain extension unlike the reason for acquisition in the case of organisation ONE (Haspeslagh and Jemison 1990). However, under the organisations previous acquisition the relationship was very much the opposite with a complete systems solution being implemented at the outset of the relationship, the absorption strategy, demonstrating the dominance of large-scale same industry owners where there is a systems solution and the potential to leverage the systems model (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). This previous acquisition and subsequent absorption systems strategy has, many years later, dominated the current systems relationship because of the level

to which they underpin daily operations, a factor identified due to the length of time which has elapsed post-acquisition (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007 and Alaranta and Henningsson 2008).

This case also highlights both the technical and social implications of the absorption of systems, adoption/sharing, where the system has been developed, whether in-house or otherwise, for an organisations very specific requirements based upon their size, mode of operations (culture) and products specific features, for example volumes and complexity (Kappos and Rivard 2008; Klaus and Blanton 2010; Baxter and Sommerville 2011; Meissonier et al 2013; Daft 2016). These are implications avoided by organisation ONE as they were not required to change Information Systems, rather to preserve them which, considering organisation TWO's latest acquisition, is what they have been required to do also, but to preserve a previously adopted system. However, this analysis has brought forward the importance of acquisition history in order to better comprehend both current and future implications for decision making regarding the development of the systems environment post-acquisition.

Post-acquisition, the organisation is developing systems relationship with other external providers and selected business partners like organisation ONE (Levina and Vaast 2005). It is claimed the legacy systems, in this case, may be hindering the progression of this systems development strategy, unlike organisation ONE's progress. However, it may also be their larger scale and embedded large scale core systems, that is making progress more complex (Skok and Legge 2002; Hayes et al 2005). This is particularly relevant where almost all of the adaption, previously, has been on the part of the acquired organisation as is suggested in this case demonstrating the complexity of the systems environment (Carlile 2004; Cross and Parker 2004; Li et al 2008).

As such, these findings about the post-acquisition relationship, provide additional detail to the current body of literature, whilst also supporting practitioners with new knowledge from which to analyse and evaluate the complexities of mergers and acquisitions situations either, pre, during or post-acquisition to better inform decision making.

5.3.2 Theme TWO: Post-Acquisition Expectations

The analysis of the data collected representing the categories of theme two, demonstrates a more detailed level of analysis than previous studies. As with the previous theme, evidence has been found that different strategies can be claimed to be in action at the same time or that different strategy take place over time as the acquisition matures.

In this case, examples supporting the strategies of holding and preservation are noticeably in play both at the time of acquisition and beyond. As the organisation moves into the future there is also evidence of symbiosis as they take control and responsibility of small but significant aspects of their systems development environment. This demonstrates the importance of looking at the Information Systems development environment, not just at the point of acquisition but at different points beyond (Hughes and Woodharper 2000; Brunetto 2006; Wijnhoven et al 2006; Mouawad 2011; Schnurman 2013; Da Silva 2014).

The form of relationship between the acquiring and acquired organisation and the resulting expectations are more complicated than previously claimed. Once again the nature and background of the acquiring organisation is found to be a key factor. The differences between the ownership profiles of organisations ONE and TWO are very different with organisation TWO having a single owner which is much closer in terms of being in the same industry. However, this is somewhat inconsequential as they do not possess an Information Systems resource relevant to the organisation's requirements.

As with the previous analysis the historical context is again a key finding. As with organisation ONE the actions and decisions made by previous owners has a direct impact upon current and future systems developments and decisions.

A further key factor identified in this research is that of organisational size. Organisation TWO, although not considered to be large in terms of the industry, is much larger than organisation ONE and so requires a larger systems resource. This research identifies that such a scale of systems resource can only be provided by

what the industry consider to be a 'large' same industry organisation demonstrating the relationship and reliance expectation.

However, this reliance upon systems which have been developed by others, whether in-house or externally, for others and their varying requirements comes with the consequences of compliance and a lack of functional control due to ownership and intellectual property. This situation effectively hands social and technical control of internal processes and ways of working over to external bodies.

Sam identifies that under their previous owners the expectations and aims were high from the outset. The organisation was expected to take their Information Systems solution fully on board and share information. Information sharing being a later theme of analysis. This is further evidence of the absorption strategy and an attempt to leverage the parent organisations Information Systems economies of scale in complete contrast to the expectations set out for organisation ONE post-acquisition (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). In addition, there was no consideration of the organisation's preparedness to make such large scale systems change required for success (Besson and Rowe 2001; Newman and Westrup 2005; McAfee 2007).

> *"Their expectations were dictated! We had to become totally embedded with Kenmar's information systems and had to share data far more freely with them. It was the ambitions they had for us, but it did come with a whole raft of Kenmar processes which was very constraining mainly because the information systems were designed by Kenmar for Kenmar and it has always been a vastly different scale of business so it was a lot of red tape for many here and we are still stuck with much of them."*

Again, Sam refers to the systems absorption strategy, of their previous acquisition, with negativity due to the implications of taking on board systems designed for a different operating environment which required both social and technical changes for the organisation (Baxter and Sommerville 2011; Tanriverdi and Uysal 2015; Daft 2016). In addition, the continued reliance upon these bespoke Information Systems, which were absorbed still present a high level of impact upon organisational processes. The negativity expressed towards these systems is evidence of 'cross-cultural friction' which can be a consequence where the acquirer is seeking to

standardise systems and working practices across different organisations (Kappos and Rivard 2005; Meissonier et al 2013).

The current owner's aims for the organisation are more business related than systems, as is the case for organisation ONE and so organisation TWO's systems strategy is now one of preservation but of a systems resource which was absorbed previously (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006). The organisation is constrained by the behemoth legacy systems but now has an owner who is empowering them by providing resources and requiring them to make their own systems decisions for future development. Again this is synergetic with the expectations of the relationship of organisation ONE.

Michael notes the complex systems environment and external pressure to adapt, integrate new systems and develop more modern systems relationships with partners and suppliers. This requires systems to integrate and work with each other. Although reliant upon the previous owners core system, the lack of control, access and ability the organisation has over it (due to it being the intellectual property of their previous owner), unlike organisation ONE, this is seen as a source of frustration and is potentially hindering the organisation's progress (Walczuch et al 2007, Kwahk and Lee 2008, Strong and Volkoff 2010).

> *"We are responsible for the decisions. At a day-to-day level it is about maintenance of systems, licensing and compliance they [Mantrale – the current owners] had nothing to do with the Information Systems at the other levels as there were all implemented prior to their buyout [and are still the property of Kenmar – the previous owners]."*

> *"The systems are complex systems. We have the full ERP legacy system upon which sits so many other newer systems, whatever you do today there is a system for it. There are so many systems which connect us to our suppliers to share information and this is a major consideration in business partnering, you have to integrate your systems. A major issue is making newer systems work with an ERP which we do not own, we are restricted in terms of what changes we can make to the system."*

Michael also provides a different perspective to the imposition of Information Systems from the previous owners (Kenmar), explaining it was realistically the only solution they could achieve due to previously poor Information Systems

investment. This demonstrates how the parental aims drive systems decisions and requirements as well as being evidence of the ongoing reliance upon larger same industry which exists for smaller organisations like organisation TWO.

> *"When we were bought by Kenmar we had extremely poor information systems capabilities because the owner before that acquisition had no money to invest. In terms of size we were too big not to be ignored systems wise and with the business plans they [Kenmar] had for us the speed of IS development had to be rapid. The easiest thing to do was drop all of their ready to use systems into here."*

Elizabeth refers to her own personal expectations when joining the organisation from a smaller systems working environment. Here the complexity and confusion brought about by successive acquisitions and divestments can be considered to be a more stressful development environment. In addition, the owners who are more distant than she has previously experienced and this is unexpected given the scale of the operations. This is symptomatic of the holding position where both strategic independence and organisational autonomy are both low and the acquiring organisation has little or no intention of integrating functional capabilities or seeking to create greater levels of value via anything other than adding financial resources in order to reduce risk. However, in this case organisation it is not due to their will but because they do not have a systems resource which would benefit the organisation Haspeslagh and Jamieson 1990; Wijnhoven et al 2006).

However, Haspeslagh and Jamieson (1990) state that for this to be the most appropriate systems strategy the two organisations (acquirer and acquired) should be in the same industry and be of similar strength such that organisational or functional autonomy isn't necessary which is not the case. Rather in practice the systems strategy is preservation, claimed to be well suited to this situation where the acquirer is seeking to explore new domains (diversification) and where they lack core competences and knowledge in that systems arena (Haspeslagh and Jamieson; Wijnhoven et al 2006). In this case, however, it is unlikely that, the strategy of preservation will change to symbiosis (as is often the case) because the two organisations are not in the same industry (Haspeslagh and Jamieson; Wijnhoven et al 2006).

> *"I started out working for several companies who were much smaller than here and saw the development of new systems and implementation of smaller ERP systems. It was a huge shock where I arrived here to see the owners have little interest in how we are spending their money. I am amazed that for such a large company our systems are so complicated with layer upon layer of them as more has been added on over the years."*

Elizabeth continues and notes the detriment of an environment which is repetitive and maintenance orientated as it will not attract professionals or retain those who will be Information Systems leaders of the future (Christensen et al 2011). In addition, Elizabeth also refers to rising motivation of systems professionals when control is given to select new systems which affect both the social and technical ways of working within the organisation (Baxter and Sommerville 2011; Daft 2016).

> *"Expectations and motivation within the IS function is improving these days as we bring in more systems ourselves, it's good to have control over systems which change the way you operate. Since our last acquisition the expectation has been that so many of our professionals are simply maintenance engineers of a system they have no development control over. Now as we add more specific systems to it the excitement is growing and you need that to keep the best people."*

In summary, this theme has highlighted again, that at a more detailed level of analysis the form of relationship between an acquiring and acquired organisation and the resulting expectations are more complicated than previously claimed. Once again the nature and background of the acquiring organisation is a key factor. There are clear differences between the ownership profiles of organisations ONE and TWO with organisation TWO having a single current owner and one which is much closer in terms of the industry type. However, this makes little difference when considering the Information Systems function as they still do not possess a resource relevant to the organisation's needs. Once again the historical context is a key finding as again, like organisation ONE the actions and decisions of previous owners has a direct impact upon current and future systems developments and decisions.

A difference between organisations ONE and TWO is size where organisation TWO is much larger and so requires a larger systems resource. This has demonstrated the reliance which exists upon the largest of same industry organisations to provide others with systems solutions although this comes with the consequences of

compliance and lack of functional control due to ownership and intellectual property. In turn this situation can be demotivating as it is in effect external control of internal processes and ways of working.

5.3.3 Theme THREE: Impact upon Independence and Autonomy

The analysis of data representing the third theme, Information Systems independence and autonomy, demonstrates the high level of impact that decisions made by previous owners can still have today many years post-acquisition. Much of the data collected is framed with reference to the previous owner's systems relationship and strategy where organisation TWO was absorbed (Haspeslagh and Jamieson (1990); Wijnhoven et al (2006); Baker and Neiderman (2014) into their parent's Information system resource as their current systems were poor quality and out-of-date creating a growing technological gap compared to industry standards.

The organisation has been acquired by a new owner who is from a similar manufacturing industry, but not one sufficiently related to enable them to provide an Information Systems resource. As such the systems strategy followed by the new owners is that of preservation by ensuring the continued provision of core systems as part of their purchase agreement with the previous owners (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

This agreement binds organisation TWO to a system which was developed previously for the specific requirements of their former owners and so is a poor fit due to their differing characteristics including; organisational size, culture, product features and complexities which has created cross-cultural working implications and socio-technical challenges which remain to this day (Wenger et al 2002; Alaranta and Parvinen 2005; Kappos and Rivard 2008; Klaus and Blanton 2010; Sommerville 2011; Meissonier et al 2013; Daft 2016). This aspect is a further key finding of this research.

This continued systems relationship is also limiting the organisation's ability to efficiently pursue new external Information Systems development, for example by

partnering, a strategy also favoured by organisation ONE. Both organisations have maintained their incumbent systems resources, however, the implications of this has been different for them. Whereas organisation ONE's core systems are owned by themselves and were developed over time specifically for their needs granting them the power to make changes as they see fit, organisation TWO's systems were developed to suit the previous owners very different requirements, as noted previously.

As organisation TWO does not own their core systems they are not in a position to influence their nature and so are culturally, socio and technically finding it more problematic to move systems development on as effectively as organisation ONE (Buchanan and Huczynski 2008; Kappos and Rivard 2008; Baxter and Sommerville 2011, Daft 2016).

In the previous themes and analysis of data collected from organisation ONE (Chapter Four), it has been identified that collaboration with suppliers and business partners is an essential part of this industry. For organisation TWO, however, the legacy of continued reliance upon bespoke systems derived from a previous owner hinders their ability and flexibility to forge new systems relationships, thus reducing their decision making independence and autonomy.

> *"For years since the last acquisition, any attempt at collaborative working has required a huge level of education in the systems for the partners, to be honest I don't see anyone wanting to undertake that level of prep unless the benefits were so long-term and had the potential for a massive return which is why for the last seven years we have been trying to move away from the legacy systems."* Sam

However, because of the inability of the current owners to provide a systems solution the organisation had no alternative but to continue with the systems owned by the previous owners, which years after the acquisition is still proving problematic. It is also evident this acquisition was not about gaining significant Information Systems benefits from the combining or replacing the systems provision (Spil, Stegwee and Fa 2006; Wijnhoven et al 2006; Shaffer and Schrock 2012). In addition, given the latest acquirers lack of a systems solution their action, or rather inactions have avoided value destruction (Tanriverdi and Uysal 2015).

In contrast to organisation ONE, which also maintained their legacy systems post-acquisition, organisation TWO is finding this problematic. Both organisation ONE and TWO's systems are bespoke. However, organisation ONE's systems were developed specifically for them whereas organisation TWO's were developed for a totally different environment as previously discussed. This situation is limiting the organisations ability to reduce their technology gap as they continue with a poor fitting (quality) systems solution. In reality they are disadvantaged both socially and technically and their culture is still being externally controlled (Handley et al 2006; Kappos and Rivard 2008; Peng et al 2010; Baxter and Sommerville 2011; Tanriverdi and Uysal 2015; Daft 2016).

Sam Continues:

> *"A lot of the legacy systems are bespoke creating a horrendous systems problem. In this industry there are separate systems for almost every aspect of design, engineering and manufacture, there are literally hundreds and thousands of these type of systems involved which all had to be taken on board. In effect we have the worst of both worlds, stuck in the old ways and it is difficult to move on and change."*

Under the previous owners, the levels of Information Systems independence and autonomy were almost non-existent as the organisation had no decision making power at any level, including operational maintenance. This position is at odds with the framework of Haspeslagh and Jamieson (1990) where the absorption strategy maintains some strategic independence, which over time, may be eroded. In this case the absorption can be described as total from the point of acquisition and was necessary as the organisation did not, at the time, possess a suitable quality Information Systems resource of their own.

There is agreement that the legacy systems are restricting independence and autonomy as Elizabeth states the wish of the organisation to move away from this situation suggesting there exists cross-cultural friction, where there is the imposition of a systems developed in a different cultural environment (Kappos and Rivard 2008; Meissonier et al 2013).

> *"As we grow there will ultimately be more collaborations with other organisations. It is likely there would be further adoption of their preferred systems rather than us developing our own and requiring them to adopt.*

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However, it is not all gloom, we are working with external systems

developers on a number of new systems, but the compromise is that they

have to work with what we are stuck with."

There is also acknowledgement that any practical moves would still compromise independence and autonomy as it is more likely that organisation TWO will continually have to adapt to the systems characteristics of partners, although, the core systems structural rigidity may require compromise on their part as well. However, the incremental, system-by-system, adoptions with chosen suppliers, business partners and customers could avoid potential friction and cultural clash whilst enabling change (Kappos and Rivard 2005; Baxter and Sommerville 2011; Meissonier et al 2013).

Michael adds more historical context and acknowledges that Information Systems independence or autonomy was and is never going to be achievable because of previous mergers and acquisition activity. This would be an unrealistic goal. Mass systems adoption, willingly or otherwise, was possibly the only option for the organisation in order to achieve any systems quality, efficiencies and added value (Haspeslagh and Jamieson 1990; Henningsson and Carlsson 2011; Koukoulaki 2014; Daft 2016).

"Prior to being the company we are now we were a number of separate
businesses which were all brought together and then eventually bought out
by Kenmar. The minute businesses join together [information systems]
independence and autonomy are lost, otherwise there will be no savings. But
it is not as though any of those businesses had any decent systems to barter
with, the imposition was necessary to keep going and provided a common
systems platform."

Michael also notes that it is possible to achieve very high levels of strategic systems independence and autonomy in this industry, but that circumstances have to be specific. Systems age, levels of embeddedness, compatibility and organisational size are crucial factors. In this case study organisation the legacy Information Systems are large and well-embedded and as such will take years and decades to replace (Movawad 2011; Schurman 2013). This is in contrast to the situation of organisation ONE where the core systems are small and owned internally raising independence

and autonomy and so, control (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006).

Referring to another organisation which was previously part of the group, Michael highlights a case where, because of the variables of; size, systems age, levels of embeddedness and compatibility, the organisation was allowed to maintain their own systems resource.

> *"Another sell off was a company called Taurus and this was a unique situation. Prior to being acquired they had just completed a large scale information systems ERP which had really shaken up their processes and ways of working. They were, at the time much larger than us and that gave them weight too. But being a new system it was relatively easy for Kenmar systems to engage with them in terms of the links ups which they wanted to achieve."*

This avoided the socio-technical implications of change, change management and ways of working (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Koukoulaki 2014; Daft 2016).

In relation to the framework of Haspeslagh and Jamieson (1990), this situation would best identify with the holding strategy, but there is, again, some level of contradiction with the characteristics for this strategy. Both the owners and their acquisition (Taurus) were of the same industry, they were of very different size, where the theory claims they should be of equal size.

In summary and returning to the current relationship organisation TWO has with its owners (Mantrale), in order to consider the level or loss of independence and autonomy it is necessary to assess what was anticipated or expected by both parties, in particular those of organisation TWO?

The evidence demonstrates that organisation two, under its previous owners, enjoyed no systems independence or autonomy and the lack of the current owner's ability to provide an Information Systems solution meant the situation remained the same post-acquisition demonstrating a reliance upon the industry's largest organisations to support smaller organisations systems needs alleviating the technology gaps of poor quality systems resources. In addition, the level of

embeddedness of the provision is still such that even today, a decade post-acquisition, only minor levels of systems variation has taken place.

Despite some cultural friction (Kappos and Rivard 2008; Meissonier et al 2013) there is also acknowledgement that to avoid value destruction (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014) the situation was, and still is, unavoidable due to the size and embeddedness of the core systems (McKiernan's and Merali 1995). As such independence and autonomy would be expected to be low. Characteristic of the holding strategy, (Haspeslagh and Jamieson 1990) even with new systems partnering there will still be compromises in terms of independence and autonomy but this time it would be by choice (Tanriverdi and Uysal 2015). In addition, it was understood, from the outset, that value creation was not primarily sort through Information Systems technology transfer, provision or rationalism, Christensen et al (2011) Baker and Neiderman (2014) but rather via business development as was the situation in case study organisation ONE.

This is a complex situation where the organisation is independent and autonomous of its current owner, in terms of Information Systems, as they pursue a holding strategy (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). However, whilst also being both independent and autonomous of their previous owner it is still, a decade later, shackled with their core Information Systems solution to a level of complete reliance, a system which can be adapted to suit it owner's requirements thus potentially affecting the working practices within organisation TWO. In reality, they are not independent.

The organisation can only reduce their reliance (improve their independence and autonomy) in an incremental manner, through strategies of systems partnering or development. Even so, the partnering option could be considered to be replacing one reliance with that of another. This knowledge illuminates the impact of any organisational strategy where the intention is to develop systems which are more suited to their preferred, or previous, ways of operating. Any change will still hold socio-technical implications and compromises (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Daft 2016).

5.3.4 Theme FOUR: Participation in Post-Acquisition Information Systems Development

The analysis of data in relation to the fourth theme identifies again the reliance of smaller organisations upon larger ones for their core Information Systems resources and that any attempt to move away will be take a long time and be expensive. Like organisation ONE the main areas of the business attracting funding from their current owners is new product development, not Information Systems. However, the research identifies a strong link between the timing of Information Systems investment and the cycle of new product development, although the lead times are very long in this industry.

As such, complicated by the fact that the organisation works with a myriad of systems, change is generally incremental, although this should facilitate a positive acceptance to systems change within the organisation (Levina and Vaast 2005; Alaranta and Henningsson 2008; Lindgren, Andersson and Henfridsson 2008; Yao, Dresner and Palmer 2009). However, at the point of new product development there is likely to be a plethora of new systems introduced at one point in time. Organisation TWO, like organisation ONE demonstrates a willingness to change their systems strategy. In this case the strategy move is from the holding position to that of symbiosis (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006). It can be argued their position since the last acquisition is more one of preservation, although the preservation of their core systems was a decision taken for the organisation by their new owners at the time of acquisition. Since then the move to develop new systems and partnership relations with external providers resembles that of organisation ONE. In contrast, where organisation ONE pursues this approach to use their resources efficiently, organisation TWO's drive is to move away from the systems of their previous owner to which they had been absorbed, that is a move from a leveraged systems model to a reinvented model (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

The analysis demonstrates throughout that organisation TWO has endured socio-technical stress as a result of the previous strategy of absorption (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Buchanan and Huczynski 2008; Baxter and

Sommerville 2011; Daft 2016). There is acceptance that it was a necessary imposition as they were without a reliable systems resource at the time of that articular acquisition.

However, since the last acquisition the organisation has gained greater freedom to develop their own systems strategy, like organisation ONE. Also organisation TWO is developing a combination approach, Baker and Neiderman (2014) enabling them to reinvent their systems model in such a way as to make changes which work for them and avoid the historical constant adaption, change and process realignment to meet the requirements of the system (Baxter and Sommerville 2011; Koukoulaki 2014; Tanriverdi and Uysal 2015; Daft 2016).

A further a common factor is both organisations ONE and TWO are now under the ownership of non-industry owners who do not possess a relevant Information Systems resource.

The organisation now has its greatest level of participation in the development of its Information Systems landscape. The current owners are providing resources, almost exclusively financial, and the organisation is able to make its own decisions symbolic of the holding strategy (Haspeslagh and Jemison 1990). However, contrary to Haspeslagh and Jamieson (1990) the organisation and its owners are not of a similar size or in the same industry.

Whereas in the previous section it has been identified that strategic independence and autonomy don't really exist at a systems level, here it is discovered that the organisation has more than participation in the process of designing its future Information Systems position, they have overall control of the decision making process within the constraints of operating with a core system of which they have no authority. It is also suggested that a full breakaway from their legacy systems may be possible as the organisation expands and develops new additional infrastructure.

> *"The owners don't bother us, there is little they can do and we are left to get on with what we can realistically do. We are working with a number of systems developer houses on a range of new systems, some are to replace old Kenmar systems and others are leading edge."*

"Ideally we want to break away from the heavy legacy systems, because of the risks, hopefully they won't just pull the plug on us, there are contracts and agreements in place and we have set up a team of over one hundred engineers to look at doing the work in-house as it were, just to look at new ERP options and developing a new PLM (Production Life-cycle Management) system. Slowly we are turning off a significant number of old systems but there is a long way to go." Sam

Sam has also noted the risk of reliance upon core systems which are the intellectual property of, what has now become a competing organisation (their former owners). This systems reliance echoes the position of organisation ONE, although their reliance was upon a private systems provider not a previous owner of the organisation. Where organisation ONE reduced their exposure to risk by purchasing their systems provider, organisation TWO manages this situation with contracts and agreements, hence they have both recognised the risks unlike many other organisations (Hughes and Woodharper 2007). However, were the previous owners to remove the core systems access from organisation this would without doubt destroy value (Haspeslagh and Jemison 1990; McKiernan's and Merali 1995; Wijnhoven et al 2006; Baker and Neiderman 2014).

Elizabeth and Michael agrees a move away from the legacy systems is preferable but would be slow because of business/product development priorities. However, she adds a further dimension to the future systems development where new business ventures and partnerships are speeding up the move away from their legacy systems to Information Systems more aligned with the their future desired systems development environment.

Over a period of time the level of system change will be large scale, even if it is incremental. This means there will need to be substantial involvement across the organisation and its potential new partners who must agree to collaborate (Soja 2010). In addition, any implementation must be preceded by a full analysis of existing procedures, processes and the organisations culture to ensure the change is acceptable and manageable (Cheikhrouhou and Marmier 2010; Baxter and Sommerville 2011; Daft 2016).

This process would take time and Elizabeth is the first to note that systems development, in this industry, is largely driven by the cycle of new product development which is slow due to the long lead times of new products.

> *"We are slowly moving away from Kenmar [previous owner] systems but it is a few systems at a time, the main core systems will not be changed anytime soon, there are too many other business priorities. But as we start other larger scale projects such as new product developments with other companies or partners we will have to align ourselves with their systems, possibly we would have to adopt but we would more choice in who we work with."* Elizabeth

> *"In the past, if Kenmar were to update their systems for their own reasons say to benefit a different business unit then we would also have to accept that update which may be of no benefit for us, rather the opposite as we'd have to learn it, make the adaptions and possible it would lead to process changes which we just didn't need."* Elizabeth

> *"If you take the core systems….as we move forward we need to improve and update them, this is where we become more bespoke. So we have been working with developers to redevelop the capabilities of the systems, we are now calling the shots. However, the limiting factor is what will work with the platform we have been left with."* Michael

This systems development strategy resembles the future path chosen by organisation ONE as with the emphasis upon working in collaboration with external systems providers and developing partnerships. This change would identify, in the main, with the symbiosis strategic position where, the combining of legacy and new systems is reinventing their systems model (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

In summary, the organisations willingness (desire) to change their Information Systems strategy and development environment again resembles the situation of organisation ONE. In this case organisation the strategic move is from a holding position to that of symbiosis (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006). It can be argued their current position is preservation, although the preservation of their core systems was a decision taken for the organisation by their new owners at the time of acquisition. Since then the move to develop new systems and partnership relations with external providers is akin to that of organisation ONE, although where organisation ONE pursues this approach to use

their resources efficiently, organisation TWO's drive is to move away from the systems of their previous owner to which they had been absorbed, that is a move from a leveraged systems model to a reinvented model (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

The analysis of the data demonstrates consistently the dissatisfaction and socio-technical stress organisation TWO has experienced throughout their period of systems absorption. A further key finding of this research has been that the choice and freedom the organisation now has, under its new owners, is welcome and that systems development and partnering will be made to work for them. Previously constant adaption, change and process realignment to meet the requirements of the system, has provide to be a constant source of dissatisfaction (Baxter and Sommerville 2011; Koukoulaki 2014; Tanriverdi and Uysal 2015; Daft 2016).

This evidence goes a long way to identifying not just their desire for change but the factors behind that desire. This identification of the *'why'* factors is again crucial to the better understanding of the post-acquisition Information Systems success (Hee Woong and Ateyi 2009).

5.3.5 Theme FIVE: Acquiring Organisations Willingness to Support

The analysis of the data demonstrates two different approaches towards supporting Organisation TWO in terms of the Information Systems development environment and their strategy. Again historical events and the decisions of previous owners have been demonstrated to be a key finding of this research as they continue to have impact many years later.

The organisations previous owners, Kenmar, supported them by providing a full Enterprise Resource Planning (ERP) Information System characterising the autocratic absorption strategy, leveraging their system model (Haspeslagh and Jamieson; Wijnhoven et al 2006; Baker and Neiderman 2014). This strategy was accepted as organisation TWO had been acquired with low levels of poor quality systems but it did create ongoing social and technical implications as the organisation has had to adapt and change organisation processes to fit the system

as it had been developed for their owner's operating environment (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Daft 2016). Although a same industry organisation the different characteristics, in particular their scale of operations, of the two organisations, and their products, were such that the system was over complicated and culturally a poor fit (Kappos and Rivard 2008; Klaus and Blanton 2010; Peng et al 2010; Strong and Volkoff 2010; Meissonier et al 2013; Hogan and Coote 2014 Chakrvorty, Dulaney and Franza 2016; Hughes, Dwivedi, Rana and Simintiras 2016).

The current owners, Mantrale, have supported the organisation by securing the continuation of the core ERP systems for the future. This is a similar situation to that of organisation ONE where new owners have secured the continuation of their core system resource as a matter of acquisition, although via a different method (purchase of the systems provider). A critical difference between the situations of organisation ONE and TWO is that organisation one is able to move forward with a core system designed for their own requirements, size, product complexity and volumes and organisation TWO has to move to the future with a system solution which is exactly the reverse, constraining their ability to progress efficiently (Baxter and Sommerville 2011; Daft 2016)..

The model of support being provided by Organisation TWO's current owners is very much arms-length and allowing them freedom in shaping their own systems future design whilst providing financial assistance. Whilst this appears characteristic of the holding strategy, the situation is, again, more complex (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). There are characteristics of both the holding and preservation strategies where the current owners display an arms-length approach (holding) but required the continued provision of core legacy systems as part of the acquisition (preservation).

However, future systems development will characterise the systems strategy as symbiosis, where existing legacy systems will remain and coexist alongside new ones. This again, is a very similar future strategy to that of organisation ONE.

Elizabeth states the new owners are willing to support the organisations Information Systems development, but from an arms-length perspective, their

support is almost entirely financial and is noticeably linked to supporting the growth of the organisation, which compares very much with the relationship of organisation ONE. This approach is characteristic of both the holding and preservation strategies where the need for strategic independence is low but organisational autonomy greater for preservation (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006). This situation again demonstrates the complexity of reality where in terms of the core historical systems there is evidence of systems preservation which fits with the criteria of Haspeslagh and Jamieson (1990) as the preservation approach is well suited to the situation where the acquirer, Mantrale, is seeking to explore new domains, diversification, and where they may lack core relevant systems and competencies. However, when considering future systems development, the evidence suggests the holding strategy is apparent as the owners offer little in the form of support other than financial resources. Where this situation differs from Haspeslagh and Jamieson's (1990) framework is the context, as the two organisations, acquirer and acquired, are not in the same industry and are not of similar strength such that organisational or functional autonomy isn't necessary (Haspeslagh and Jamieson 1990; McKiernan and Merali 1995; Wijnhoven et al 2006).

Elizabeth states that future systems development is both complex and expensive and that there is a preference to purchase off-the-shelf systems solutions where possible for, however, referring to previous evidence, any such systems would have to work with core legacy hard and software.

> *"Although the owners [current] are a manufacturing organisation they do not produce what we do, there is no possibility of their information systems being able to replace anything we have here. New systems are complex and expensive and we would either have to develop in-house, which we don't have a lot of time or the huge level of resources to achieve, or we do it with partners, but we prefer to buy systems out-of-the-box if we can and the owners are happy to provide the money."*

The notion of support in the case study is more complex that simply considering that of the latest acquirers (Mantrale). The majority of Information Systems in place are derived from the previous owners (Kenmar) who are still supporting the organisation by continuing to allow them access to their systems to maintain their

business activities, although this is now a transactional arrangement enabling Kenmar to continue to leverage their systems model and maintain economies of systems scale (Hayes et al 2005; Wang et al 2005; Baker and Neiderman 2014). Elizabeth is confident the actual Information Systems owners would have no intention to remove their provision; she acknowledges this is an unusual situation and one which should diminished over time. It is also suggested that this supporting arrangement could have been directly influenced by the relatively weak business position of the previous owners at the time of their divestment and the decision to continue to support Information Systems provision post-acquisition was made in order not to destroy value (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014).

However, a potential benefit of this situation is that the members of the organisation maintain operating processes with which they are familiar, avoiding significant levels of socio-technical implications such as change and change management (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Daft 2016).

> *"It is not likely they [the previous owners] would stop supporting us with their systems but even though this industry is full of partnerships, strategic alliances and more, it would be contrary to the industry norms to do such a thing to a major employer. It was all signed in the agreement at the time of the acquisition. After all the previous owners would have been generous as they needed to divest a number of business units to be able to stabilise their core business which was in trouble at the time."*

> *"There is also the fact that that our new owners [Mantrale] are not in direct competition with them [Kenmar] so there would be little if not no intellectual property gain for them. My opinion is that this situation should and will be reduced over time, but it will be a long-time and as our owners are not directing us to work on a full-scale platform replacement."*

Sam, referring to the systems support being provided by the previous owners, identifies that in reality, the theoretical benefits of maintaining the use of known systems and business processes, such as, not having change or learn new systems and processes at a time of major upheaval (acquisition) are not always true (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Daft 2016).

Unlike organisation ONE, where core systems had developed over time for their requirements, organisation two is having to continue working with over complicated systems designed for a different scale of volume, Hughes, Dwivedi, Rana and Simintiras (2016), complexity of product and production methods, (Strong and Volkoff 2010) Chakrvorty, Dulaney and Franza (2016) and culture of operation (Kappos and Rivard's 2008; Peng et al 2010; Strong and Volkoff 2010; Klaus and Blanton 2010; Meissonier et al 2013; Hogan and Coote 2014).

> *"All of the systems are essential for us to keep moving, but they are still too complicated. The complexity comes with the scale of operation they will support. We are growing but we will never reach their scale of operation. So it's difficult, we are supported with systems we need to live but they are still problematic by their nature, design, they were specifically designed Kenmar and how they work is different to us, but we've had to become more like them to make it work."*

Sam adds that it is likely the organisation will remain in this predicament for many years as the current owners (Mantrale) will not support a complete move to a new Information Systems platform of their own. Early in the new relationship it was considered an all new Information Systems strategy and development environment would be the right direction however, Sam state the poor ability of external systems developers to be able to provide a sufficiently flexible new systems solution leading to the creation and imposition of system change which creates operational process changes to accommodate systems which are still ill fitting and too complex. The inability of external systems providers to develop suitable systems solution for this industry, where organisations are not producing high volumes of low complexity products was also stated in the interviews from organisation ONE.

> *"In the early days of the current takeover, we did think a complete move away from Kenmar systems was the best strategy. This was because we did not have the level of people and understanding that was required to keep the thing [Kenmar core system] alive. We investigated starting with a totally new Information Systems solution which would draw on industry leading systems technology."*

> *"The big problem is that there are weakness in the software industry in understanding what the automotive industry needs. The really funny thing is*

the developers are better at the real volume end of the industry than they are at the more niche end and much of this is due to the systems being great when they are about formalising and structuring processes but they are less good when it comes to enabling businesses to work more flexibly and we still need flexibility as our products and their features are more complex."

Organisation TWO is supported by their owners and is pursuing new thinking about its future systems development but is significantly constrained by its large-scale legacy systems which underpin so many business activities and processes designed for a completely different organisational environment which has created ongoing social and technical implications (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Daft 2016).

The organisation's systems strategy, like that of organisation ONE is again complex and not simple to define in terms of Haspeslagh and Jamieson's (1990) framework. There are characteristics of both the holding and preservation strategies where the current owners display an arms-length approach (holding) but required the continued provision of core legacy systems as part of the acquisition (preservation). However, new systems development and future progression will characterise the organisations systems strategy as symbiosis, as core legacy systems are set to remain for the foreseeable future and new ones are developed or purchased, as is the organisations preference. This again, is a very similar future strategy to organisation ONE. A significant difference is that organisation ONE's core systems were designed for their own operations and organisation's TWO's were developed by their previous owner and were bespoke to their own needs, operations and organisational culture. Where the maintaining of systems provisions, post-acquisition, can have benefits, such as requiring less change and upheaval, King et al (2004) Alaranta and Parvinen (2005) Rai and Tang (2010), in this case the reality has been the creation of socio-technical implications when and since adopted because of their inappropriate levels of complexity and requirement to change operational processes to fit the system (Buchanan and Huczynski 2008; Baxter and Sommervile 2011; Daft 2016).

5.3.6 Theme SIX: Post-Acquisition Information Systems Rationalisation and Collaboration

The analysis of data provides two examples of how organisation TWO has, under two different owners and systems strategic approaches, had opportunities for collaboration.

Firstly, under an absorption strategy with their previous owners, Kenmar, organisation TWO was one of many, same industry, group members all of who shared the same centralised Information System resource. However, rather than collaboration for value creation (Haspeslagh and Jamieson 1990; King et al 2004; Sarrazin and West 2011), the organisation was only required to supply information for general reporting purposes. This may have contributed to the group failure and subsequent divestment of many business units, including organisation TWO.

Collaboration between the business units could have been very effectual as the common systems platform shared by all group members, because of the absorption strategy, avoids many boundary spanning implications, such as systems compatibility problems and security concerns (Sumi and Tsuruoka 2002; Yoo, Lyytinen and Heo 2007; Andersson and Henfridsson 2008; Vieru and Rivard 2015).

Under the current ownership, Mantrale, organisation TWO is no longer a member of a same industry group. Under Mantrale's ownership the organisation's strategic systems approach has become more democratic, that is the organisation is able to make its own systems decisions, however, a consequence of this is greater complexity than previously experienced where decisions were taken on their behalf. Mantrale's hand-off approach, other than to provide financial resources, is characteristic of the holding approach (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). However, a condition of acquisition was the maintenance of the core Information Systems resource from the previous owners. Clearly, a strategy of preservation. Looking to the future, organisation TWO, like organisation ONE, has the freedom to develop their own collaborations and share information with external providers and partners meaning existing and

new systems will combine to create value, the strategy of symbiosis (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

This change of systems strategy enabled the organisation to create a more flexible situation where the organisation can work with many business partners at mostly at operation and managerial levels, although this will raise security requirements for the sharing of information (Sarrazin and West 2011, Tanriverdi and Uysal 2011).

The strategy of sharing and collaboration on a project-by-project and system-by-system basis avoids the potential drawback of systems duplication and the need for rationalisation (Wijnhoven et al 2006, Spil, Stegwee and Fa 2006). Again this shows a synergy with the position of organisation ONE, where they demonstrate the potential of a boundary spanning Information Systems approach. One which is enabling the organisation to learn from other business partners, even where those partners do not have the same business objectives as, in theory, is claimed to be a necessity (Levina and Vaast 2005; Lindgren, Andersson and Henfridsson 2008).

One of the main purposes of the previous owner's (Kenmar) bespoke behemoth Information System solution was, and is, to facilitate global information sharing between its different businesses across the globe with the purpose of enhancing reporting as well as the product development life-cycle by supporting inter-organisational collaboration, whilst leveraging their system advantage (Davenport 2000; Konradin 2009; Soja 2010; Marques and Guerrini 2012; Baker and Neiderman 2014; Da Silva 2014). However, post divestment by Kenmar, organisation TWO remains with the same core Information Systems solution but without the need to share information. As such, one of the main purposes of the legacy system is no-longer applicable, however, the organisation is still having to operate with the systems designed for a very different manufacturing and cultural environment (Buchanan and Huczynski 2008; Baxter and Sommerville 2011' Daft 2016).

> *"As well as being a readymade solution, which we needed when Kenmar took over, their plan was to link up a number of their other businesses via the same mass system. The idea was huge collaborations and economies of scale driven by information sharing on a huge scale across something like ten businesses globally. This is the scale of the system we were stuck with even after we were sold off."* Sam

Elizabeth provides more details about the form of relationship or collaboration practice which was facilitated, where the system was designed in such a way as to suggest it was more about the parent company maintaining control of information which was chosen to be shared, as opposed to the system promoting open information sharing (Davenport 2000; Konradin 2009; Soja 2010; Marques and Guerrini 2012; Da Silva 2014). This autocratic style is characteristic of the absorption strategy where the parent organisation is attempting to strengthen their domain position (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). Although the controlling of information, as opposed to making it freely available, is contrary to the strategy if value it to be created (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006). The system is still in place at the organisation but external collaboration and information sharing tools are now disabled.

> *"We still have the old systems but they are somewhat closed now. For them it was all about the economies of scale of information sharing across their massive group, but we are not part of that anymore. I don't know if it was deliberate, but sharing information with other business units was difficult and not direct. It was as though you would put information into the system but you wouldn't see others until or if it was made available."*

Elizabeth and Michael refer to the ultimate failure of the previous acquisition which led to a large-scale sell off of business units. Potentially the failure to share information freely, as suggested by the absorption strategy, (Haspeslagh and Jamieson 1990), was a contributing factor given, as Michael highlights, there were opportunities for greater collaboration across the business units which was not facilitated. However, Given the current owners are not of the same industry, there is now not at requirement to share information other than for general reporting reasons, more associated with the holding strategy Haspeslagh and Jamieson 1990; Wijnhoven et al 2006).

> *"Having been part of the group for many years, we were still only gaining information in relation to essential activities – the day-to-day stuff. There was nothing strategic about the information we had access to, nothing collaborative from other business units. Perhaps this is why everything went wrong for them in the end and finished up selling most of us off. Under the current owners there is nothing really to share other than providing the reports they need, this relationship is not about collaboration."* Elizabeth

"There was big potential for synergies and economies of scale between the different business units they were acquiring at the time. Some parts of the group were sharing and working together but we felt we were being left out. There was so much opportunity to collaborate which just didn't happen. It was all about control" Michael

However, Michael states the future holds a lot of opportunity for collaboration and sharing information will become essential as the organisation changes its strategy and develops a future with a number of external providers and systems partners in much the same was as organisation ONE which will lead to high levels of boundary spanning systems relationships (Sumi and Tsuruoka 2002; Yoo, Lyytinen and Heo 2007; Vieru and Rivard 2015). This would change the systems strategy from absorption to symbiosis as the organisation has gained greater levels of autonomy under their new ownership (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006). Organisation TWO, like organisation ONE is reinventing their systems model and new systems will have to work in combination with their preserved core legacy systems (Christensen et al 2011; Baker and Neiderman 2014).

Following a symbiosis strategy, both organisation ONE and TWO are choosing both partners/providers and the actual systems they wish to share. This flexibility enables both organisations to avoid the inefficiency of systems duplication as well as the bureaucracy of gaining permission to allow external partners access to their core systems (McKiernan and Merali 1995; Alaranta and Parvinen 2005; Origitano 2006; Mouawad 2011; Schnurman 2013; Tanriverdi and Uysal 2015).

"We are growing at our fastest ever and although we have been acquired by someone who is not in the same business as we are we do need help. We are developing a number of business partner relationships. This requires us to develop our information systems to be able to perform collaboratively and share volumes of data and information. Sometimes it is their systems, sometimes we need to buy or jointly develop new one."

In summary, organisation TWO has, under its last two acquisitions been presented with potential opportunities for collaboration but in completely different ways. Under the ownership of Kenmar, following an absorption strategy, there were a number of business units sharing the same Information System and were all from the same industry. The evidence demonstrates collaborative opportunities and

information sharing was not promoted and value was not created which is potentially a major factor in the failure of the group. However, an advantage of the absorption strategy is the avoidance of systems duplication and other boundary spanning implications, such as systems compatibility problems and security concerns (Sumi and Tsuruoka 2002; Yoo, Lyytinen and Heo 2007; Andersson and Henfridsson 2008; Vieru and Rivard 2015).

Under the current ownership, Mantrale, organisation TWO now has no same industry business units for collaboration, including Mantrale themselves. They have, however, been given the freedom to develop their own collaborations with external providers and partners which will involve systems sharing as the systems strategy has changed from absorption to a combination of preservation, core systems, and symbiosis, for future systems. This change of systems strategy enable the organisation to create a more flexible situation where the organisation can work with many business partners at most levels, especially operationally and managerially although this will raise security requirements (Sarrazin and West 2011, Tanriverdi and Uysal 2011).

Again duplication of systems and the need for rationalisation can be avoided, to a great extent, as they have the choice of which systems to adopt or share. This is also the case for organisation ONE (Wijnhoven et al 2006, Spil, Stegwee and Fa 2006). This boundary spanning Information Systems approach will enable organisation TWO, like organisation ONE to learn from other business partners. Levina and Vaast (2005) and Lindgren, Andersson and Henfridsson 2008) refer to this approach being complex and when choosing partners the organisation should be to aim to identify those with similar business objectives. However, the experiences of organisation ONE has demonstrated that business partners with related but different strategic objectives can add high levels of value.

5.4   Conclusions

The systems relationship of organisation TWO and its current owners is referred to as arms-length which is not unusual where the owner's aims are diversification/domain extension, in contrast to the aims of organisation ONE's owners (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). This analysis has identified two acquisition events for this organisation and both created different systems relationships. A key factor driving the relationship strategy is whether the owner is from the same industry, which determines whether they possess an Information Systems resource which can be applied to their acquisition, regardless of the scale, quality and implications for operational processes demonstrating the absorption strategy highlighting the dominance of large-scale same industry owners (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006). Although in this case, the absorption strategy created a range of technical and social implications (Kappos and Rivard 2008; Klaus and Blanton 2010; Baxter and Sommerville 2011; Meissonier et al 2013; Daft 2016). Key factors being; the system was developed for application in a different environment, systems size and compatibility, mode of organisational operations, culture and products specific features, such as volume and complexity.

In contrast, the organisation's second acquisition experience has been strategically more complex (Carlile 2004; Cross and Parker 2004; Li et al 2008). Similar to the position of organisation ONE, where the owners are not from the same industry, this has resulted in a mixed systems strategy combining aspects of preservation, at the point of acquisition, holding, short to medium term post-acquisition and symbiosis, the future as they, like organisation ONE develop a broader external systems environment (Haspeslagh and Jamieson 1990; Levina and Vaast 2005; Wijnhoven et al 2006; Baker and Neiderman 2014). These findings support the recommendations of researchers who have stated the potential benefit of undertaking research at longer points in time post-acquisition (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007 and Alaranta and Henningsson 2008). This study has also highlighted the historical implications of previous acquisition decisions upon the current activities.

The evidence demonstrates that organisation TWO has, under different owners enjoyed very different levels of systems independence or autonomy, which has found to be dependent upon whether the acquirer possess an Information Systems resource. Where they do not, significantly higher levels of independence and autonomy are evident which is also the situation of organisation ONE. However, where a resource is possessed, imposition has taken place despite cultural friction Kappos and Rivard (2008) Meissonier et al (2013) in order to leverage their systems economies of scale (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014).

For organisation TWO, the legacy of their previous owner's absorption strategy, combined with the current owners lack of a suitable systems resource, has resulted in a complex situation where they are, a decade later, reliant upon core systems, of which they have no control and which are the intellectual property of their previous owner. This suggesting they are not as independent as the theoretical framework would indicate. The organisation can only reduce its reliance in an incremental manner, through a strategy of systems partnering or development, a strategy similar to that of organisation ONE where they are reinventing their systems model (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

Organisation TWO, like organisation ONE, is supported by their owners and is pursuing new thinking about its future systems development. However, unlike organisation ONE it is significantly more constrained by its large-scale legacy systems which underpin so many business activities and processes designed for a completely different organisational environment which has created ongoing social and technical implications (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Daft 2016). Whereas the maintaining of systems provisions, post-acquisition, can have benefits, such as requiring less change and upheaval, King et al (2004) Alaranta and Parvinen (2005) Rai and Tang (2010), in this case the reality has been the creation of socio-technical implications since adopted because of their inappropriate levels of complexity and requirement to change operational processes to fit the system (Buchanan and Huczynski 2008; Baxter and Sommervile 2011; Daft 2016).

The organisation has, under its last two acquisitions, been presented with potential opportunities for collaboration but in completely different ways. Under the absorption strategy, there were a number of business units sharing the same Information System. However, the evidence demonstrates collaborative opportunities and information sharing was not promoted and value was not created which is potentially a major factor in the failure of the group, leading to subsequent divestment. The advantage of the absorption strategy, that is the avoidance of systems duplication and other boundary spanning implications, such as compatibility and security concerns were not leveraged (Sumi and Tsuruoka 2002; Yoo, Lyytinen and Heo 2007; Andersson and Henfridsson 2008; Vieru and Rivard 2015).

Under the current ownership, organisation TWO has no same industry business units for collaboration. They have, however, been given the freedom to develop their own collaborations with external providers and partners which will involve systems sharing as the systems strategy has changed from absorption to a combination of preservation, core systems, and symbiosis, for future systems (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). This change of systems strategy enable the organisation to create a more flexible situation where the organisation can work with many business partners (Sarrazin and West 2011, Tanriverdi and Uysal 2011).

Duplication of systems and the need for rationalisation can be avoided, as they have the choice of which systems to adopt or share with partners and developers, this is also the case for organisation ONE (Wijnhoven et al 2006, Spil, Stegwee and Fa 2006). This boundary spanning Information Systems approach will enable organisation TWO, like organisation ONE to learn from other business partners. Levina and Vaast (2005) and Lindgren, Andersson and Henfridsson 2008) refer to this approach being complex and when choosing partners the organisation should be to aim to identify those with similar business objectives. However, the experiences of organisation ONE has demonstrated that business partners with related but different strategic objectives can add high levels of value.

The analysis and cross-case comparison of organisation's ONE and TWO enhances the body of existing knowledge and provides practitioners with real-world examples of the complexities that make up the Information Systems development environment, in order to better support decision making. Again conducting this research at a different point in time post-acquisition, and via the following of a different theoretical perspective (neo-empiricism) has enabled a new engagement with the literature to date. This study has confirmed the continued relevance of existing literature whilst enhancing the themes of the conceptual framework.

Chapter 6:   Analysis: Case Study Organisation THREE

6.1   Introduction

Continuing from chapters four and five, this chapter provides the analysis of data collected for the third and final organisation taking part in this study which is also compared to that of the two other organisations which have taken part. The purpose of this chapter is to again provide further evidence in support of the six themes set out in chapter three and compare the findings with literature of the framework of Haspeslagh and Jamieson (1990).

Again, all data was obtained via semi-structured interviews and again the analysis will be summarised with concluding observations prior to a discussion of the analysis in the following chapter.

6.2   Organisation THREE

Organisation THREE is from the same section of the automotive engineering sector as organisations ONE and TWO and sits between the two organisations in terms of its production volumes. Organisation THREE would still be considered relatively low volume given the size of the global industry, more akin to that of organisation ONE, although sales volumes are approximately double at over a billion pounds with a workforce of around 5,000 people.

The organisation has had a less turbulent past in terms of ownership profile, compared to organisations ONE and TWO, but has been the subject of previous acquisitions. Firstly, following the bankruptcy of the then parent organisation and then reorganisation prior to an eventual sell-off at the end of the last century.

Unlike organisations ONE and TWO, this organisation is the only one to be under the current ownership of a large-scale global manufacturer from the same industry, which also owns a number of other business units again from the same industry. As such, there is a disparity in size between the organisation and its new owners, a situation not previously researched demonstrating a further contribution of this

thesis (Henningsson et al 2018). The current owners acquired the organisation with the aim of domain extension where value could be created via the leveraging of their business and systems models (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

In this respect, the analysis can be compared to the previous experiences of organisation TWO who were, at one time, in the same position. A position which held implications for their current Information Systems environment, as identified in the previous chapter. Given organisation TWOs acquisition experiment ended in failure and divestment and organisation THREE's acquisition is still enduring almost two decades later, the analysis, as demonstrated in this chapter and the following discussion (Chapter Seven), has been able to identify some key features and behaviours which have made for acquisition success (McKiernan and Merali 1995; Giacomazzi et al 1997; Robbins and Stylianou 1999; Dalcher and Drevin 2003; Rogers 2005; McManus and Wood-Harper 2007; Sarrazin and West 2011). Again, this supports the contribution of this research being conducted at later stages post-acquisition (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

6.3   Theme Analysis

6.3.1 Theme ONE: The Post-Acquisition Organisational Relationship

The analysis of data collected identifies that the post-acquisition relationship of organisation THREE with its owners bares significant characteristics with the previous relationship experience of organisation TWO, when they were owned by a single large-scale same industry owner. Due to the change of organisation TWO's ownership profile, organisation THREE is now the only organisation taking part in this study which is, currently, owned by a single large-scale parent organisation which is from the same industry.

Organisation THREE shares many characteristics with organisations ONE and TWO. For example, they are all relatively small organisations, when compared to the large global operations. All three organisations production output relates to the high end

niche of their market sector and all three organisations possessed poor quality Information Systems resources at the time of acquisition, which were inadequate given the parent organisation's aims for growth, again, in all three cases.

In each of the three studies, the analysis has demonstrated that the organisations recognised the need for systems change and are mostly grateful, to their new owners, for the access they now have to world leading systems capabilities. However, all three organisations have stated socio-technical implications because of taking systems on board which have been developed in-house, or for, large scale operations, which are culturally different, manufacturing different production volumes with differing levels of complexity, do not fit easily into their operations (Kappos and Rivard 2008; Peng et al 2010; Meissonier et al 2013). This has created friction, as well as, levels of adaptation and change but emphasises the reliance of smaller organisations upon large organisations for their modern Information Systems resources (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Daft 2016).

Unlike organisation TWO who, when in the similar circumstances, experienced complete absorption when acquired, organisation THREE did not, the reasons for which are identified later in this chapter (Haspeslagh and Jamieson 1990). The evidence demonstrates the benefit of conducting this research many years post-acquisition, Shearer et al (2004) Wijnhoven et al (2006) Mehta and Hirschheim (2007) Alaranta and Henningsson (2008) Mouawad (2011) as it has identified that this organisation went through different periods of leadership manifesting itself in different relationship characteristics. Periods of autocracy, where the expectation was that they should adopt central systems without question, symptomatic of the absorption strategy, (Haspeslagh and Jamieson 1990) and periods of greater flexibility where the organisation was able to make more decisions about their own Information Systems future, more characteristic of both the holding and symbiosis strategies (Haspeslagh and Jamieson 1990). Resulting in a more complex and mixed Information Systems strategy where the system model is both being leveraged and reinvented at the same time (Baker and Neiderman 2014).

Graham provides background detail of the poor quality and haphazard Information Systems resources the organisation was operating with at the time of acquisition. However, given their low volumes of output the resource was adequate, again, as with organisations ONE and TWO, this supports the finding that there is a clear link between the suitability of Information Systems resources and the size of the organisation and its output.

> *"At the time of the takeover, the systems here were very specific and unique to us. Other manufacturing systems were also implemented and then there were a number of old MAIT systems. Interestingly, most systems were not specific to this industry, they were general manufacturing. But remember we were operating mostly manual processes, we were not a factory full of robots and there was no connectivity of processes, everything was on bits of paper and it was very simplistic. We knew change had to come as they [the new owners] were looking for 1,000% increase in volumes and our systems couldn't cope with that or the new ways in which we would have to manufacture to get up to those sorts of volumes."*

Quoting the new owner's targets for increasing volumes, Graham states the organisation knew there would have to be systems changes because of the necessary changes in processes which would have to be implemented. This supports the position of the socio-technical nature of Information Systems where operations and processes and Information Systems are inextricably linked (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Daft 2016). Like organisation TWO's position at the time of their previous acquisition by Kenmar, organisation THREE also had a poor quality systems provision, however, unlike organisation TWO, this organisation systems capability was not immediately absorbed into that of their new owners (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

Lloyd notes how the nature of the systems relationship with their owners has changed over the two decades since acquisition, supporting the contribution of a study undertaken many years post-acquisition (Shearer et al 2004; Wijnhoven et al

2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

> *"The relationship with Group [term used to refer to the current owners] is more two way now but it has changed through different eras of the relationship and depended upon who was in charge. There have been periods where the relationship has been really rather dictatorial and others where we have had more say in the systems decisions which affect us, at least there is more communication and dialogue now that there has been at times. Now you can see this more framework approach and systems flexibility coming down from group. The changes of personalities at the top and the changes of culture and the greater need for openness today have been big drivers."*

Initially, there was a period of autocracy, associated with the absorption strategy, (Haspeslagh and Jamieson 1990) and large organisational dominance, although, there was no immediate systems absorption. Then there were later periods of greater democracy and flexibility in terms of their own systems responsibility and decision making more associated with the positions of symbiosis where independence is greater (Haspeslagh and Jamieson 1990). Lloyd states the changes in approach are linked to the changes in the leadership teams of the acquiring organisation. This demonstrates further the relationship between the social aspects of organisational behaviour, for example leadership, and the implications for the technical artefacts such as Information Systems.

In contrast to growing flexibility in the systems relationship, Lloyd refers to recent changes where the organisation has been required, without question, to take on board additional group systems for the purpose of reporting. In addition, he also states the potential benefits that some of the system changes will enable such as facilitating greater collaborative working across the same-industry members of the business group (Suchman 2002; Levina and Vaast 2005; Vieru and Rivard 2014). Even though, the move to common systems can lead to a reduction in organisational identity (Clark, Gioia, Ketchen and Thomas 2010). Potentially, this is

a situation similar to that of organisation TWO, under their previous owners, but was not acted upon.

> "More recently we have had to [as a group of subsidiaries] to add systems and processes to ensure we are compliant with legislation and group needs for more data. The new processes are much more detailed because they have to be but a lot of the new systems being brought in in the future with the digitalisation agenda which should make it much easier for us, as a group of businesses, to work together whilst reducing our carbon footprint." Lloyd

Lloyd provides further evidence of the complex nature of the systems relationship with their owner, where over the year's many core systems have become those of the owners, demonstrating some level of absorption and leverage of the owner's resources (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). However, contrasting that position he also notes that there are many other systems developments where decision making and provision is much more local, for example local outsourcing and project management. This mixed approach is characteristic of the symbiosis strategy demonstrating a reinvention of the systems model as newly procured systems are either combined or allowed to co-exist with those of the owner's systems resource (Wijnhoven et al 2006; Baker and Neiderman 2014). This situation demonstrates greater flexibility and learning about the needs of the organisation, by the owners than was the case for organisation two when their ownership profile was the same (Sumi and Tsuruoka 2002; Cross and Parker 2004; Yoo, Lyytinen and Heo 2007; Vieru and Rivard 2015).

> "We don't have many of the core systems here most are hosted centrally but we are also becoming more agile and outsourcing a lot of new development it is certainly the way forward and you can go out to the best suppliers and get what we need when you know what it is that you are going to need. You have to be agile!" Lloyd

Paula also cites the changing nature of the organisations relationship with the parent company over the past two decades which is a direct consequence of the parent's policy of changing senior central Information Systems management roles on a cyclical basis. A factor supporting the social implications identified because of the time elapsed since the point of acquisition (Shearer et al 2004; Wijnhoven et al

2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

> *"Autonomy has varied over the years, when they took over things went very autocratic, but since then different eras has meant different levels of control. The acquisition has made available terrific resources but we have had to deal with several changes of approach and working. We had a period where everything was so autocratic but then we have been on a cycle, a deliberate cycle, of getting a new head of overall IS/IT every three years or so. It is a rotation system they have and these people do come from the centre. The change of leadership does have a massive effect on how and what you get to do with your IS and IT capabilities."* Paula

When referring to the relationship between the two organisations Catherine also refers to the level of autocratic control by the owners.

> *"Quality and quality assurance Information Systems are really important in this industry and the owners insisted upon the adoption of their group based systems solution which they want across the whole enterprise, this was they can compare us against each other. I get the point for some of the larger businesses where they produce the same products across different places but not us. We are unique here and have very different requirements to the rest of the group. Their systems don't fit our processes because of our scale and uniqueness of product."* Catherine

Catherine identifies a clear and specific example of how this level of control has created an inflexible problem for the organisation because of its differences from the other companies which make up the whole enterprise. Again, as stated in the analysis of data collected from both organisations ONE and TWO, the size (scale) and production differences (uniqueness) are cited as key factors as to why systems developed for use in one domain, do not fit and function as intended in an alternative setting (Kappos and Rivard 2008; Peng et al 2010; Meissonier et al 2013).

Catherine also identifies that the parent's treatment of its subsidiaries is not as equal. Referring to another subsidiary who had prior to acquisition invested in their own Information Systems refused to adopt enterprise-wide solutions and are not

being confronted, by the parent, because of their size and profitability suggesting there exists group politics, a factor, along with leadership and stakeholder management, that is not sufficiently recognised in the Information Systems literature (McManus and Wood-Harper 2007).

> *"There are others who have access to group solutions but choose not to use it. It's all very political and some will never be forced to do anything by group which they don't want to. It's all about which parts of the group are more profitable. Even the more intermediate subsidiaries don't argue because they are closer in scale of operations to the bigger boys and so have less of a compromise. It is just us, we are so unique compare to the rest of them and because of their scale the processes are geared to their needs better than ours. We do feel pushed into things and dictated to."* Catherine

In contrast, Catherine acknowledges the benefits, despite compromises, of adopting group solutions because of the potential ability to work with other divisions of the group and gain systems access for which they could not raise the financial investment themselves. Again this demonstrates a key factor of this research is the reliance upon and domination of larger organisations in this industry for Information Systems resources. There are synergies with the experiences of organisation TWO, when under the ownership their previous owners, a large-scale same industry organisation where they were made to adopt and adapt to the implementation of significant levels of systems developed for different operating environments (Kappos and Rivard 2008; Peng et al 2010; Meissonier et al 2013).

> *"Considering the IS development environment more holistically we are very much group and I think it is a good position working with the others considering our position. We don't have the money they have to invest and we pay a smaller contribution than others to run the systems."*
>
> *"We can request some functionality changes but we do our best to accommodate their systems as much as we can but it can be difficult and it can lead to systems users here being very unhappy but we have to put up with it. The working relationship sound quite negative but in reality it is better then I'm suggesting."* Catherine

Summarising the post-acquisition relationship, currently this organisation is the only one taking part in this study which is owned by a single large-scale parent organisation which is from the same industry. Organisation THREE shares many characteristics with organisations ONE and TWO. Their circumstances are almost

exactly the same as organisation TWOs under their previous owner (Kenmar) although, whereas, organisation TWO experienced total absorption at the point of acquisition, organisation THREE did not and their relationship has evolved with periods of systems of adoption (Haspeslagh and Jamieson 1990).

6.3.2 Theme TWO: Post-Acquisition Expectations

The analysis of the data demonstrates the owner of organisation THREE is supporting a complex Information Systems strategy which exists on several levels. There is evidence of the adoption approach where subsidiary autonomy is low and there is insistence they take on board all centralised systems consolidating and leveraging their systems capabilities (Baker and Neiderman 2014). Also there is evidence of the symbiosis approach, maintaining subsidiaries autonomy and independence as they are allowed some flexibility to accommodate individualities or alternatively approach external providers for their own solutions, demonstrating a reinvention of the system model through combination and co-existence. Finally, the preservation strategy, where, more recently the owners have allowed a subsidiary to maintain their Information Systems solution (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). As such, the owners are managing an Information Systems strategy which is both leveraging and reinventing their model and the more recent co-existence is evidence of a strategic approach of conglomeration (Baker and Neiderman 2014).

In contrast to the previous two case studies, the owners of organisation THREE possessed a systems solution and so this analysis has been able to consider the systems relationship further from the positions of both the acquiring and acquired organisations more equally.

The benefit of conducting these studies much later post-acquisition is that it has identified, not only, the situation and relationship at the point of acquisition, but has been able to observe how the relations have evolved over time (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008 Mouawad 2011). This has also enabled the identification of

factors which affect the relationship, that is gaining an understanding of the '*how*' and '*why*' factors. For example, the continued implications of historical decision making and, particularly in this case example, changes in leadership and culture (McManus and Wood-Harper 2007; Kappos and Rivard's 2008; Clark, Gioia, Ketchen and Thomas 2010; Peng et al 2010; Meissonier et al 2013).

Organisation THREE has seen the longest time elapse since acquisition and has experienced a combination of the strategies of absorption, where old systems are replaced, (King et al 2004; Rai and Tang 2010; Tanriverdi and Uysal 2015) and symbiosis where freedom is given to adapt centrally provided systems or work with external systems providers which then co-exist alongside centralised core systems (Haspeslagh and Jamieson 1990; Wijnhoven 2006). The balance of this experience is dependent upon the leadership style of the parent organisation which, by design, changes approximately every three years, demonstrating how social factors, such as, management hold technical implications (Baxter and Sommerville 2011).

Where this study identifies the long-term systems strategic development for organisation THREE, the paths set out upon by the other organisations who have taken part in this study can be compared and future strategy challenges and changes can be forecasted. As such, Knowledge gained from this study can be applied and mistakes and difficulties can be avoided.

For example, the attributes of the previous acquisition of organisation TWO are almost identical to that of organisation THREE, that is being acquired by a large-scale same industry manufacturer with a readymade Information Systems solution. In addition, the acquisition took place around the same time. Organisation THREE's acquisition has survived unlike that of organisation TWO and potentially, the more simplistic, absorption strategy of organisation TWO's previous owners was the reason for failure? In contrast, the more flexible aspects of organisation THREE's owner may be the reason for their success across multiple subsidiaries.

Having considered only two themes so far, the analysis shows the systems relationship is stronger where the acquiring organisation possess an Information Systems resource, although this raises a range of social, organisational behavioural

and technical implications (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Daft 2016).

Graham states that their new owners took time to understand their acquisition, a period of about three years, before setting out their expectations and action plan for a large-scale systems adoption project, unlike the experience of organisation TWO under their previous ownership, characteristic of the absorption strategy (Haspeslagh and Jamieson 1990; Alaranta and Parvinen 2005; Wijnhoven et al 2006). However, the evidence does not suggest this period considered the organisations readiness for such change (Besson and Rowe 2001; Newman and Westrup 2005; McAfee 2007). This time lag is in contrast to the experiences of both organisation ONE and TWO where large-scale decisions were taken at the point of acquisition.

Carlisle (2004), Cross and Parker (2004), Levina and Vaast (2005), Li et al (2008) claim such a time lag should have led to the development of a successful Information Systems environment. However, there is no evidence to suggest this was a collaborative process and this has had cultural ramifications to the present day (Kappos and Rivard 2008; Meissonier 2013). Although, some of the complications that have been brought about by the systems changes may have resulted from the fact that the organisation had to maintain ongoing operations whilst being required to adopt new practices and processes (Hayes et al 2005, Wang et al 2005).

> *"Once they [the owners] had taken time to size us up they decided that it had had enough of us playing around in our own little world and they were going to do a large scale group system and processes migration and it was possibly the best thing they could do and it was done really quickly. People here were resistant to so much change in one go, but the response was get it done! This lead to some new thinking culturally which is why today as new things come along requiring systems to be developed or implemented we now choose to take, where possible, the central solution even if we have to tweak it to our needs."* Graham

Graham contextualises the situation further, like organisation TWO's previous acquisition experience, organisation THREE is now part of a large group of same industry business units where the acquirer has previously followed a systems

absorption strategy, in almost all cases, consolidating and leveraging their systems model (Haspeslagh and Jamieson 1990; Wijnhoven 2006; Baker and Neiderman 2014).

However, because of the differences between the two organisations, such as culture, production scales and product complexities, to pursue the same full scale absorption strategy, in this case, would have led to value destruction (Skok and Legge 2002; King et al 2004; Hayes et al 2005; Rai and Tang 2010; Baxter and Sommerville 2011; Tanriverdi and Uysal 2015). Graham continues:

> *"A critical differences between us and the rest of the business is that we are simple where they are complex and we are complex where they are simple and for systems to manage that is almost impossible. For example at our end of the market the fundaments are all there, you don't get to pick and choose. But the key difference, where a mass produced product likes standardisation in the detail, we offer vast levels of bespoke choice."*

> *"So we had to adopt the central enterprise-wide systems to make it work for us. These fundamental differences cost millions because it is a massive system and small changes cost a lot of money alternatively we lose some functionality."*

(Walczuch et al (2007), Kwahk and Lee (2008) claim success is dependent upon 'fit', that is the suitability of systems solutions for the organisations core activities. The differing complexities and characteristics of both the two organisations (acquirer and acquired) and their products, as noted already, demonstrates, in reality, the organisation, though reliant upon their large parent for a system resource, may not have been ready to take on board the new systems and the level of adaptation and cultural change which has come about because of poor fit (Besson and Rowe 2001; Kappos and Rivard 2005; Newman and Westrup 2005; Strong and Volkoff 2010; Hogan and Coote 2014).

James also refers to the early expectations of both the organisation and its owner.

> *"Since what we refer to as the big bang of migrating to Group systems we have been very stable. Ok there has been a lot of changes constantly and some has been difficult, but often the systems changes are very much evolutionary. Many people at the time anticipated a lot more adoption of group systems, but that hasn't occurred in anything like the scale expected.*

As expected group systems meant some pain and change but without it we could never have achieved what we have in terms of volumes and better efficiency. The down side is we don't have much control."

The analysis identifies positivity in the relationship as external pressure for greater systems adoption and integration, than actually occurred, was anticipated thus reducing the organisation's autonomy as the parent organisation leverages its system model; as has been its approach with previous acquisitions, in line with the experiences of organisation TWO previously (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). In addition, the systems adoption is claimed to have future proofed the organisation in terms of production scalability, although again the change has required adaption and change management (Baxter and Sommervile 2011; Tanriverdi and Uysal 2015; Daft 2016). The '*big bang*' reference to systems adoption is contrary to what is considered to be the preferred approach to systems implementation where a more incremental approach is suggested to be more suitable, especially where, as in this instance, the adoption in on the part of the acquired organisation (Skok and Legge 2002, Hayes et al 2005; Li et al 2008). Further explanation in relation to this situation is provided later in this chapter.

David explains that a major reason behind the expectation, of the owners, to adopt centralised systems is for the purpose of information sharing, to support group problem solving (Gregor and Jones 2007; Da Silva 2014). Information sharing is returned to later in theme six. However, the benefits may not be as expected, at group level and in the first decade post-acquisition held little relevance for organisation THREE as they conducted very little in the way of working practices and shared projects with any of the other business units of the group, although collaboration is increasing more recently (Hughes and Wood-Harper 2000).

"A lot of the systems sharing and mass adoption across the group of companies enables information to be shared. The expectations of the benefits of sharing information and technologies across a large group can be misleading. If you have a problem there is a high chance that problem will be being experienced by other businesses within the group but that problem could manifest itself in different ways in different divisions. Also we, at the time we were acquired and for many years after, shared virtually nothing

with any of the other divisions. Now of course that is changing so perhaps the benefits will become real." David

David continues and reveals that in more recent times the expectations of the owner to comply with and absorb centralised systems has been relaxed and a more symbiotic strategy is evident preserving higher levels of independence and autonomy (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

> *"Because we have less investment and less resources we have to be more flexible and be more creative with how we manage our systems. There are things we have come up with [system changes and augmentations] which the other parts of the group have loved and said can we have it too. So we are really contributing to the groups IS strategy and usability. What we have now is more of an IS strategy which we call a framework approach, it's more relaxed and it works for our uniqueness and it has yielded some unexpected benefits for everyone. But if you want to go outside of group for a solution, be clear you are on your own."*

> *"For example, the levels of quality inspections we have to go through meant the central preferred system was very clunky it just didn't work for us. With agreement we have been allowed to have our own standalone system for this purpose, but for years it was just not allowed. It is referred to as local sourcing of systems you have to have a very good reason to ask for group permission."* David

This symbiosis manifests itself on two levels. Firstly, the organisation is allowed to make changes to core systems in order to tailor them to suit their individual needs, as set out previously being a small volume operation with different manufacturing complexities (McKiernan and Merali 1995; Alaranta and Parvinen 2005). This flexibility is yielding additional benefits as other businesses units within the group see advantages of some of the adaptions made and request the same functionality. Secondly, the organisation is allowed to look outside of centralised core systems for solutions. However, where this is the case there is still an underlying culture which prefers common systems adoption.

The evidence demonstrates the owner's preference for an absorption strategy in order to leverage their systems model through consolidation (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). Catherine identifies a notable

exception where the newest acquisition, with whom the organisation is working collaboratively, refuses to engage with established systems and the parent has to date not intervened. There is also a reference to organisational politics which was identified in theme one.

> *Expectations are very political. When we started with the development of one of our major new products, there was a lot of co-development with other subsidiaries within the Group. However, some of the others have their own very expensive and relatively modern systems and so have not adopted much in the way of Group systems so on that project a number of the systems we have adopted, with all the pain that came with them."* Catherine

This situation in conjunction with the analysis of data of this theme, demonstrates the owner is engaging with a multi-layered and complex Information Systems strategy. Firstly, there is evidence of adoption, where subsidiaries take on board all centralised systems consolidating and leveraging their systems capabilities. Secondly, symbiosis, where subsidiaries are allowed some flexibility to tailor existing systems to accommodate their individualities or alternatively approach external provides for their own solutions demonstrating a reinvention of the system model through combination and co-existence. Thirdly, the preservation strategy, where the latest acquisition is, at present, allowed to maintain their Information Systems solution (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). This co-existence is evidence of a conglomeration strategy, Baker and Neiderman (2014) although, over time, it may be transition from preservation to symbiosis (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006).

In contrast to the findings of the two previous chapters, where the acquirers have not possessed a suitable systems solution, this analysis has been able to considered the systems relationship more equally, that is from the perspective of both the acquired organisation and also that of the owner.

Organisation THREE has seen the longest time post-acquisition and from its perspective it is experiencing a combination of the strategies of absorption, where old systems are replaced, not preserved, King et al (2004) Rai and Tang (2010) Tanriverdi and Uysal (2015) and symbiosis where freedom is given to tailor internally provided systems or acquire their own which then co-exist alongside

centralised core systems (Haspeslagh and Jamieson 1990; Wijnhoven 2006). The balance of this experience is dependent upon the leadership style of the parent organisation which changes approximately every three years, demonstrating how social factors, such as, management hold technical implications (Baxter and Sommerville 2011).

Where this study identifies the long-term systems strategic development for organisation THREE, the paths set out upon by organisations ONE and TWO can be compared and future strategy challenges and changes can be forecasted and difficulties avoided from this knowledge.

For example, the attributes of the previous acquisition of organisation TWO are almost identical to that of organisation THREE. In addition, the acquisition took place around the same time. However, organisation THREE's acquisition has survived unlike that of organisation TWO. Potentially, the more simplistic, pure absorption systems strategy of organisation TWO's previous owners was the reason for failure? In contrast, the more flexible aspects of organisation THREE's owner may be the reason for their success. However, having considered only two themes, the analysis shows that the systems relationship is greater where the acquiring organisation possess an Information Systems resource, although this is certain to raise a range of social, organisational behavioural and technical implications (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Daft 2016).

6.3.3 Theme THREE: Impact upon Independence and Autonomy

The analysis of the data finds the independence and autonomy of organisation THREE is the most complex of all three organisations in this study. The major difference is brought about as they have been acquired by a same industry, large-scale parent who owns a number of other manufacturing capabilities and also possess a relevant, if not entirely suitable Information Systems capability. Which is in contrast to the positions of organisations ONE and TWO.
Organisation TWO had previously experienced the same situation, under their previous owner, however, at the time of their acquisition they were without a

system solution and so the acquirer's chosen systems strategy was complete absorption which also enabling them to leverage their systems economies of scale (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). In contrast, organisation THREE's new owners, despite them functioning with poor quality Information System, took time to gain an understanding of their acquisition prior to requiring them to take on board a number of centralised systems via a series of large-scale adoptions at different periods of time post-acquisition (Sumi and Tsuruoka 2002; Cross and Parker 2004; Yoo, Lyytinen and Heo 2007; Vieru and Rivard 2015).

The analysis of data collected has also identified the impact of social factors including parent organisation leadership styles (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Daft 2016). Organisation THREE's owners follow a practice of replacing their senior leaders approximately every three years and this has been identified as the driver behind contrasting strategic approaches towards the systems development environment across its' subsidiaries. They have experienced periods of autocracy, which manifests as the absorption approach, and periods of greater democracy characterised by the strategy of symbiosis where centralised systems exist alongside a combination of tailored internal systems and externally sourced systems (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). This is another key finding of this research which because of it taking place much later than previous studies post-acquisition (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

A further key finding or the work, again due to the study taking place much later post-acquisition, is the changing nature of the systems environment which has been observed and provides knowledge for application by other organisations. In this case, during the early phase of their acquisition, organisation THREE, as identified previously, was very different to the other larger subsidiaries which make up the group. As such, when adopting systems, as required to do so, the majority of compromise was on their part as the large scale Information Systems lack flexibility (Kappos and Rivard 2008; Peng et al 2010; Meissonier et al 2013).

However, as more recent acquisitions have been completed, business units with characteristics more similar to those of the organisation have been added, and as the group's leadership style become more democratic, there is to be a change in the approach to the development of the future Information Systems environment with the introduction of sub-groups of subsidiaries who share similar characteristics, with the aim of creating value via the reinvention of the groups systems model (Baker and Neiderman 2014).

Throughout the conducting of the interviews, all interviewees expressed strong identity and affinity with their organisation, characteristics of a strong and independent culture (Brocke J 2011; Hogan S and Coote L 2014). Any changes to organisational systems and subsequent ways of working can lead to a loss of organisational identity as their culture changes (Clark, Gioia, Ketchen and Thomas 2010). Although this would assume that organisational identity is derived from systems and processes alone and that the acquired organisation would be keen to keep their ways of working, which may not be the case and identity may be derived from something else such as a strong recognisable brand which is clearly a possibility for all three organisations taking part in this research.

It has already been identified, in the previous themes analysed that rafts of centralised Information Systems have been absorbed at several points in time post-acquisition (Haspeslagh and Jamieson 1990). However, further independence and autonomy may be lost as the owners take control day-to-day monitoring, reporting and decision making centrally as Graham explains:

> *"Group Information Systems sit on a platform in Head Quarters overseas so they can, and do, monitor all sales orders and production in every single plant of all subsidiaries on one single system. They then have a whole suit of systems around that which handles the logistics of moving parts and finished products. It's a very controlled environment that is their way."* Graham

As well as the monitoring of company data, independence and autonomy are further eroded by the centralisation of many Information Systems, as the parent organisation is able to make large systems changes and iterations without involving its subsidiaries whilst affecting their processes and ways of working. This approach, where large scale absorption of systems and system changes take place across

multiple business units, should be proceeded by substantial involvement of the entire hierarchical structure of the organisation and its partners who must agree to collaborate (Soja 2010). In addition, any implementation must be preceded by a full analysis of existing procedures, processes and the organisations culture (Cheikhrouhou and Marmier 2010). The implication of this would be to slow the process of new products to market, which is a key aim of the owners, in what is already a sector with relatively long lead times thus reducing the return on investment of the acquisitions made.

Graham highlights the benefits for the larger subsidiaries but notes the consequences for their organisation due to their unique characteristics which have already been defined - lower volumes and higher production complexities. Although this is further erosion of independence and autonomy it is accepted supporting the organisation gains its' identify from organisational artefacts other than its systems, processes and ways of working (Clark, Gioia, Ketchen and Thomas 2010). As such the social implication of technical change are more acceptable, despite their increasing lack of flexibility for the organisation to be able to tailor systems to meet their requirements, Baxter and Sommerville (2011) especially where the parent organisation is replacing poor quality systems resources reducing the organisation's technology gap, which has been previously identified.

> *"Centralisation of systems means they can make as many iterations as they like and as they have come along Group have made them less flexible for the local level dictating the way you will work. It is what we call lockdown to force people to work the same way and they have done this because partly they want as much standardisation as possible. If you have six plants building the same or similar products and they all work the same way, then adding another plant is easy. But we are so different to the other businesses who are mostly very similar, so we feel the pinch most."* Graham

James refers to the different eras (forms of control) which the organisation has encountered since their acquisition, driven by the differing leadership styles of previous central leaders (McManus and Wood-Harper 2007; Buchanan and Huczynski 2008). James explains how the current era will increase independence and autonomy and create an environment which better represents, fits, their unique features as they are brought together with other subsidiaries of the group

who share similar important characteristics as identified previously, which will create a more successful systems development environment (Walczuch et al 2007; Kwahk and Lee 2008; Strong and Volkoff 2010). Providing the process is managed and all parties are suitably prepared for the change (Besson and Rowe 2001; Newman and Westrup 2005; McAfee 2007).

> *"There will be change with the new chief exec who is more realistic. Previous ones have been very much centralised in their decision making whereas this one recognises he can't make all the decisions. The new boss has already set about disbanding a lot of decision making from the centre and has created smaller divisions which marries up the subsidiaries on the basis of production similarities and levels of joining project working. We are going to part of a small group of four businesses and work has been agreed to investigate where we should migrate to some of the other subsidiary's Information Systems to make working more closely with them easier."*

Paula provides further perspective for the loss of Information Systems autonomy and independence in light of the parental aims of organisations growth since their acquisition nearly two decades ago. The growth of the organisation and its systems resource is as a result of a strategy of absorption as the owner leverages their systems capability (Haspeslagh and Jamieson 1990; Wijnhoven 2006; Baker and Neiderman 2014). However, a new era of sub-group independence is in development as new, similar, acquisitions are made. Should the sub-group of business units be afforded the suggested independence to develop more of their own systems development environment, this would be reflect the holding strategic approach where the owners would be providing mainly finance, management capabilities and supporting risk (Haspeslagh and Jamieson 1990, McKiernan and Merali 1995; Wijnhoven et al 2006). However, in reality it is unlikely many core systems will be able to be replaced due to the extent to which they are embedded into organisational processes and culture (Jayaratna 1994; Fitzgerald 1998; Angwin 2007; Alaranta and Mathiassen 2014). Instead a strategy of symbiosis will exist where the systems model is again reinvented and systems are allowed to combine and coexist (Baker and Neiderman 2014).

> *"The IS landscape was very simple pre takeover where we had around 80 core systems and today we have over 450 and a significant number of those*

are Group systems. We could never do that ourselves so the loss of independence is common sense."

"However, at the time of acquisition we were unique within the enterprise with lower volumes and higher levels of complexity, since then other businesses, more like us, have also been added to the group and we will work together as a sub-group with more of our own contained systems, which suits us as we will not have to argue with the larger volume subsidiaries about what systems are best where we never win."

Finally, Catherine comments that the new group structure, intended to bring the smaller divisions of the enterprise together, where there are greater synergies, will not increase autonomy or independence. In contrast, the change of systems strategy could create an increasingly complex and political/cultural systems landscape with little or no benefit for the organisation (Kappos and Rivard 2008; Meissonier 2013). Whilst value may not be destroyed, the extent to which it could be enhanced will be reduced (Baker and Neiderman 2014).

"Structurally the proposed changes… incorporating us, with the more specialised subsidiaries within the Group may make us a little more independent of the central systems and allow us to go a little on our own way. But this is more likely to lead to more use of some of their information systems, rather than our own because of the size and politics and they are going to head that division. We will end up being pulled in both group and their directions regarding systems and end up running two of everything to keep both sides happy. Group systems are too embedded and then there is the politics of who makes the money and that isn't us!"

In summary, the independence and autonomy of organisation THREE is the most complex of all three organisations in this study. The major difference, for this organisation, is they have been acquired by a same industry, large-scale parent who owns a number of other manufacturing capabilities and possess an Information Systems solution in contrast to the owners of organisations ONE and TWO. Although organisation TWO had previously experienced the same situation, under a previous owner, they, at the time of acquisition were without a system solution and so the acquirer's decision was a full absorption strategy enabling them to leverage their systems capability (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). In contrast, organisation THREE's acquirers, despite them functioning with poor quality Information System, took time to gain an

understanding of their acquisition prior to requiring them to undertake central core systems via a series of large-scale adoptions at different periods of time post-acquisition (Sumi and Tsuruoka 2002; Cross and Parker 2004; Yoo, Lyytinen and Heo 2007; Vieru and Rivard 2015).

The analysis of data collected has also identified the impact of social factors including parental leadership (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Daft 2016). Organisation THREE's owners follow a practice of replacing their senior leaders on a regular basis and this has been identified as the driver behind contrasting strategic approaches towards the systems development environment. They have experienced periods of autocracy, which manifests as the absorption approach, and periods of greater freedom characterised by the symbiosis strategy where centralised core systems exist alongside a combination of tailored internal systems and externally sourced systems (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). This is another key finding of this research which because of it taking place much later than previous studies post-acquisition (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

A further key finding or the work, and again due to it taking place at a significant stage after acquisition, is that the changing nature of the systems environment has been observed which can provide knowledge for application by other organisations. In this case, during the early phase of their acquisition, organisation THREE, as identified previously, was very different to the other larger subsidiaries which make up the group. As such, when adopting systems, as required to, the majority of compromise falls on the part of organisation THREE as large scale centralised Information Systems lack flexibility (Kappos and Rivard 2008; Peng et al 2010; Meissonier et al 2013).

However, as later acquisitions have taken place, adding business units to the group who share more of organisation THREE's characteristics, and as the group's leadership style becomes more democratic, there is to be a change in the approach to the future Information Systems development environment with the introduction of sub-groups of subsidiaries who share common characteristics, with the aim of

creating value via the reinvention of the groups systems model (Baker and Neiderman 2014).

6.3.4 Theme FOUR: Participation in Post-Acquisition IS Development

The analysis of this theme, focussing upon the participation in the development of the post-acquisition Information Systems development environment, has been found to support two theoretical positions.

Firstly, participation is vital to avoid acquisition failure and the destruction of value because of; excessive systems complexity, poor organisational fit and changing business processes (Klaus and Blanton 2010; Strong and Volkoff 2010; Chakrvorty, Dulaney and Franza 2016; Hughes, Dwivedi, Rana and Simintiras 2016).

Secondly, the theoretical position claiming the need for participation in the process of implementing systems which have been originally developed for application in a different operating environment, that of the acquiring organisation (Hughes and Wood-Harper 2000; Alaranta and Henningsson 2008; Laudon and Laudon 2015; Tanriverdi and Uysal 2015).

As cited previously, there have been a number of key findings identified because of undertaking this research long after the acquisition process was completed. This theme again provides further evidence of this benefit as it has enabled the exploration of the changing Information Systems relationship between the acquiring organisation and their acquisition, which has been very different to the evolving relationships of organisations ONE and TWO. In addition, over time the parent organisation has acquired more subsidiaries and this research, because of its conducting at a later stage, has been able to observe the systems challenges and opportunities this has also brought about for organisation THREE (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011). Again, a different scenario to that of organisations ONE and TWO.

The critical difference, for the findings, lies in the current ownership relations of organisations ONE and TWO and that of organisation THREE. Where organisation THREE is the only one to be owned by a large-scale same industry organisation and

this difference is critical in determining the Information Systems relationship. Organisation TWO spent a number of years in the same ownership situation as organisation THREE, until their most recent divestment. That period has provided an opportunity to compare and contrast those relationships.

Where organisation TWO's relationship with their previous owners was purely one of absorption as the owners leveraged their systems advantage at socio-technical expense of their acquisition, organisation THREE's relationship has been more complex (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Baker and Neiderman 2014 Daft 2016).

This analysis has also recognised the impact of the changing styles of central leadership. This has had a major impact upon the levels of participation, independence and autonomy in the systems relationship (McManus and Wood-Harper 2007; Clark, Gioia, Ketchen and Thomas 2010; Peng et al 2010).

There has been intermittent periods of absorption, where the owner has insisted upon central systems being adopted, leveraging the systems resource whilst creating socio-technical implications. For example, poor Information System fit, over complicated systems and cross-cultural friction (Haspeslagh and Jamieson 1990; Levina and Vaast 2005; Walczuch et al 2007; Andersson and Henfridsson 2008; Kwahk and Lee 2008; Strong and Volkoff 2010; Meissonier 2013; Baker and Neiderman 2014).

In contrast, there have been periods of greater inclusion and participation in the process of determining the organisations systems strategy. This is characteristic of the symbiosis approach where existing, central but tailored as well as new systems, that are typically purchased or co-developed with external providers, either combine or coexist along-side each other. This is an example of the acquiring organisation reinventing its systems model as, over time, it learns more about the unique requirements of its acquisition (Haspeslagh and Jamieson 1990; Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011; Baker and Neiderman 2014).

The Information Systems development environment is created by the contributing organisations or parties involved, here the acquiring and acquired organisations

(Hughes and Wood-Harper 2000). As such, this is a contributing part of the development and maintaining of the relationships between the parent and the subsidiary (Hughes and Wood-Harper 2000). Research shows one reason for Information Systems project failure is the lack of user participation, in this case the organisation itself, which can result in the creation of excess complexity, poor organisational fit and a reduction in value (Klaus and Blanton 2010; Strong and Volkoff 2010; Chakrvorty, Dulaney and Franza 2016; Hughes, Dwivedi, Rana and Simintiras 2016).

Graham states participation is a matter of perception, referring to the 'big bang' imposition of core systems where participation was more about making the systems work, characteristic of the absorption systems strategy (Haspeslagh and Jamieson 1990).

> *"It depends upon your definition of participation, Participation is decision making and making decisions become reality? We took some of the central order systems and all of the component management systems which were integrated with our own system requiring a lot of translation files to be written, we were involved but the decisions were taken for us. But it was a momentous thing as it changed us and our perspective. It not only changed all of the production systems but also all of the engineering systems and the bill of material systems so the benefit was we gained a fantastic understanding of the whole manufacturing environment because we all had to work together to get the systems in and that at the time was brilliant."*

Klaus and Blanton (2010) Strong and Volkoff (2010) Chakrvorty, Dulaney and Franza (2016) Hughes, Dwivedi, Rana and Simintiras (2016) state a range of systems project failures due to poor participation, this case has potentially added value as those affected learnt more about how their own organisation functioned in reality. This would present more future opportunities to add value as potential process changes are identified through greater understanding (Baker and Neiderman 2014).

Over the years the levels of participation in regards to systems decision making have changed, as identified previously, driven by different central leadership personalities (McManus and Wood-Harper 2007; Clark, Gioia, Ketchen and Thomas 2010; Peng et al 2010). Graham recalls an event where an ill-fitting system,

implemented as part of the previous absorption strategy (Haspeslagh and Jamieson 1990) provided an opportunity for greater decision making participation under more participative leadership (Hughes and Wood-Harper 2007).

> *"Most of our Group systems are hosted at central HQ, The Group production control system for us it is like using a sledge hammer to crack a nut. The system is designed for mass manufacture which we are not about, our complexity is in the detail. Their systems meant us having to make a lot of changes and reconfigurations to suit the system and change the way we work."*

> *"After many years we were eventually allowed to work with another newer member of the group who brought with them their own system which was very compatible with what we wanted, and we were allowed to get on with it."*

Again, undertaking this research long after the point of acquisition has enabled the benefits of organisational learning and changing organisational circumstances to be observed along with their results (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011). This process is not a purely technical exercise and the organisational learning requirements demonstrates again the need to acknowledge the social aspects of Information Systems (Sumi and Tsuruoka 2002; Cross and Parker 2004; Yoo, Lyytinen and Heo 2007; Baxter and Sommerville 2011; Vieru and Rivard 2015; Daft 2016).

A similar observation of the lack of participation at the strategic decision making level of systems is provided by David who cites the data desires of large parent organisations can render participation and choice obsolete.

> *"We had no choice but to adopt the group problem solving system and we found it very onerous because you had to follow the detailed steps and the process and you could not avoid or deviate from any of them no matter what you did or didn't need and it was totally inflexible. But big organisations want big data, they said we had no choice but take on MFIS for their benefit not ours. They can sit in HQ and see exactly what the group is producing daily because they can access the data."*

The parent organisation has a culture of control, again symptomatic of the absorption strategy Haspeslagh and Jamieson (1990) which it feeds via two modes, big data collection, via the sharing of information and visual knowledge of precisely what is happening at any point in time and this is leading to; cross-cultural friction Meissonier (2013) poor Information System fit Walczuch et al (2007) Kwahk and Lee (2008) Strong and Volkoff (2010), excessive systems complexity Levina and Vaast (2005) Andersson and Henfridsson (2008) and the need for the organisation to have to adapt to different and unwelcome process changes (Baxter and Sommerville 2011; Daft 2016).

This need for greater information and awareness by broader stakeholder groups is acknowledged more widely as is the need for greater levels of corporate reporting (Konradin 2009, Soja 2010, Marques and Guerrini 2012). Participation in the more strategic decision making of Information Systems would undoubtedly lead to less compatibility of systems across the enterprise and may destroy some value (Baker and Neiderman 2014). This in turn would create a reduction in the level of data available for the central HQ to analyse. This situation demonstrates that in practice, contrary to theory, greater participation and collaboration in decision making many not only be not possible, but in addition, may not lead to a greater outcome (Suchman 2002, Soh and Kien 2004, Levina and Vaast 2005).

Whilst, there was no consultation, or analysis of the organisation's readiness to adapt to the new system, Soja (2010) Cheikhrouhou and Marmier (2010) Baxter and Sommerville (2011),

David identifies that in later years, they have been allowed to tailor the system and some of the adaptions have since been incorporated into the enterprise-wide version for all subsidiaries to use, providing a potential benefit. James also provides a second similar example. These situations demonstrates learning opportunities which has proved beneficial in later years post-acquisition (Levina and Vaast 2005, Sarrazin and West 2011, Tanriverdi and Uysal 2011).

> *"In more recent times we have been allowed to make some changes which have been incorporated into MFIS, and other subsidiaries have found those changes to be advantageous. This has enabled some of the more mass*

manufacturers within the group to become more bespoke which has been good for their sales figures." David

"We redeveloped a part of the system called Moses which is a system which sequences production to the line for building based upon a number of factors, parameters and data. The changes we added to the system enable it manage the high levels of complexity in the detailed parts of our products. Our adaptions to the systems are enabling other parts of the group to offer increasing levels of product differentiation" James

James adds, that such systems developments or changes can only be made internally by organisations with their characteristics and, as such, would not exist otherwise.

"No-one else could have achieved this [the system redevelopment]. Firstly, you have to be like us to understand the needs and secondly, the 'big-boys' [Siemens, SAP etc.] do not understand our environment and are not interested in producing systems for such small applications. They want systems which they can sell the core parts over and over again."

These comments mirror the analysis of organisation ONE, where it was identified that to develop systems which fitted with their size and product complexities, systems needed to be developed internal or with selected industry relevant partners as the larger, well known, systems providers still lack the knowledge, understanding of the Information Systems requirements of organisations like themselves.

This finding highlights the need for participation in the process of developing systems which meet the needs of organisations, where key characteristics and the operating environment differ from that where the systems have been developed for implementation and operation (Hughes and Wood-Harper 2000; Alaranta and Henningsson 2008; Laudon and Laudon 2015; Tanriverdi and Uysal 2015).

Finally, Paula provides an alternative example where, again due to the organisation and its output characteristics being different to that of the owners and most of the other subsidiaries, they have, more recently, been allowed to develop their own systems solution for distribution. Allowing the organisation to do this demonstrates change in the systems development approach by the parent from absorption to symbiosis, where core central systems exist alongside locally sourced or developed

systems (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

> *"Our shipping system, was developed locally because we won the business case as the solution we wanted was cost effective and easier to use and it really is a far more advanced system that the central system. Also the volumes we move are very different to most of the Group and the value of each of our products is much higher so the way we ship them is also different. When they learn about us there is some balance it is not totally autocratic, we are not the problem they think we are."*

The change in approach/strategy has been stated many times, throughout the analysis, to have coincided with changes of senior leadership style. However, Paula also notes there were potential financial saving for the parent as "*they won the business case*" and this again was driven by the organisations, and product, more unique characteristics.

Although, this practice does not support the main strategy of creating value via leveraging the parent organisations systems model and advantage, Baker and Neiderman (2014), it avoids value destruction as it allows the organisation to participate in the process of acquiring or developing a systems solution which better fits their socio and technical needs (Buchanan and Huczynski 2008; Baker and Sommerville 2011; Daft 2016).

In summary the analysis of this theme, which focusses upon participation in the development of the post-acquisition Information Systems development environment, has identified a series of examples which support two theoretical positions.

Firstly, that participation is essential in order to avoid failure and value destruction through; excessive systems complexity, poor organisational fit and changing business processes (Klaus and Blanton 2010; Strong and Volkoff 2010; Chakrvorty, Dulaney and Franza 2016; Hughes, Dwivedi, Rana and Simintiras 2016).

Secondly, the theoretical position citing the need for participation in the process of developing systems which meet the needs of organisations, where the key characteristics and the operating environment differ from that where the systems have originally been developed for implementation and operation (Hughes and

Wood-Harper 2000; Alaranta and Henningsson 2008; Laudon and Laudon 2015; Tanriverdi and Uysal 2015).

A key benefit of undertaking this research, long after the point of acquisition, is that it has enabled the exploration of the changing Information Systems relationship between the acquirer and acquired organisations, which has been very different to the evolving relationships of organisations ONE and TWO (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

The critical different between the current relations of organisations ONE and TWO and that of organisation THREE is that organisation THREE is the only one to be owned by a large-scale same industry organisation and this difference has been found to be critical in determining the Information Systems relationship. Organisation TWO did spend a number of years in exactly the same ownership situation as organisation THREE, until their most recent divestment. That period has provided an opportunity to compare and contrast those relationships.

Where organisation TWO's relationship with their previous owners was purely one of absorption as the owners leveraged their systems advantage at socio-technical expense of their acquisition, organisation THREE's relationship has been more complex (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Baker and Neiderman 2014 Daft 2016). The analysis has identified the importance of regularly changing styles of central leadership which has had a profound effect upon the levels of participation afforded to the organisation in terms of their Information Systems and decision making (McManus and Wood-Harper 2007; Clark, Gioia, Ketchen and Thomas 2010; Peng et al 2010).

There have been intermittent periods of absorption, where the owner has required central systems adoption, without question or alteration, leveraging the systems resource but creating socio-technical implications such as poor Information System fit and over complexity as well leading to cross-cultural friction (Haspeslagh and Jamieson 1990; Levina and Vaast 2005; Walczuch et al 2007; Andersson and Henfridsson 2008; Kwahk and Lee 2008; Strong and Volkoff 2010; Meissonier 2013;

Baker and Neiderman 2014). In contrast, there are periods of greater inclusion and participation in the process of determining the organisations systems future, characteristic of the symbiosis approach where existing, tailored and new systems, either combine or coexist along-side each other thus reinventing the systems strategic model as the acquiring organisation, over time, learns more about the unique requirements of their acquisition (Haspeslagh and Jamieson 1990; Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011; Baker and Neiderman 2014).

6.3.5 Theme FIVE: Acquiring Organisations Willingness to Support

The analysis of the data for this theme has identified high levels of willingness to support organisation THREE's systems development environment, although this willingness takes a totally different approach to that of the other two organisations in this study due to organisation THREE being the only one currently owned by a large-scale, same industry owner who possess a substantial Information Systems resource.

Whereas, in the cases of organisations ONE and TWO the owners demonstrate characteristics of three different systems approaches, holding, preservation and symbiosis, as they support the development of reinvented systems models (Haspeslagh and Jamieson 1990; Wignhoven et al 2006; Baker and Neiderman 2014). Organisation THREE's owners take a more autocratic approach and require the adoption of all centralised core systems where possible, characteristic of the absorption strategy, as they seek to leverage their systems model, consolidating their systems resources. As was the experience of organisation TWO when under the same form of ownership previously. (Haspeslagh and Jamieson 1990; Wignhoven et al 2006; Baker and Neiderman 2014).

The adoption approach, Haspeslagh and Jamieson (1990) characterised by the centralisation of core systems has created socio-technical problems and reduced organisational autonomy (Wijnhoven et al 2006). This is claimed to be as a result systems being implemented in one environment and culture when they were originally designed for another. Key factors have been identified to be; differing

levels of product complexities, organisational size and working practices (Baxter and Sommerville 2011; Daft 2016). This is key finding of the work concurs with previous research (Kappos and Rivard 2008; Peng et al 2010; Meissonier et al 2013; Tanriverdi and Uysal 2015).

The research has also identified that where the absorption approach, towards supporting the subsidiaries has been taken, acquired organisation can, and do engaged in dysfunctional behaviour and adapted centralised systems, locally to improve systems fit (Balthazard, Cooke and Potter 2006; Walczuch et al 2007; Buchanan and Huczynski 2008; Kwahk and Lee 2008, Strong and Volkoff 2010).

A key benefit of undertaking this research years after acquisition has been to identify different periods of ownership autocracy and democracy, potentially driven by changes of central leadership. Here it has enabled the observation of changing systems approaches, or strategies, as the acquisition has matured where examples of organisational learning have led to more symbiotic behaviour on the part of the owner in support of their acquisition future systems development. This represents a reinvention of their systems strategy (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014).

A link between the perception of the Information System function by the acquiring organisation and their subsequent strategic approach has also been identified. Where the function is viewed as a cost, the owners seek to leverage as much of their resource as possible via absorption, regardless of any potential socio-technical factors (Haspeslagh and Jamieson 1990; Buchanan and Huczynski 2008; Kappos and Rivard 2008; Klaus and Blanton 2010; Strong and Volkoff 2010; Baxter and Sommerville 2011; Meissonier et al 2013; Baker and Neiderman 2014).

However, it has also been identified, through the analysis of the data collected for this theme, that the absorption strategy, regardless of socio-technical implication, may be the most suitable approach because of historical factors and growing levels of collaboration within the group of subsidiaries which make up the group. For these projects to be successful, each subsidiary requires modern, robust and common Information Systems to facilitate reporting, information sharing and problem solving.

As stated already, the changing levels of participation this organisation has experienced, has been aligned with changes in the style of central leadership. However, again, due to the time elapsed since acquisition it has been identified that, for this industry, periods of absorption, where core systems have to be adopted, are driven by the cyclical nature of new product development (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

Graham provides an example of a process that the owners operate which demonstrates their willingness to support their subsidiaries Information System's needs. However, the controlling and centralised nature of the group's systems resource creates socio-technical implications, as organisational autonomy is reduced, where systems changes are rolled out across other subsidiaries which are different, in terms of their product systems demands, organisational size and practices, who did not request the systems adaptions (Baxter and Sommerville 2011; Daft 2016). This is further evidence of the absorption strategy where the investment is systems changes are rolled out across all strategic business units in order to leverage the systems model and investment (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). Again this concurs with other research where a system developed or adapted for use in one systems development environment may not be acceptable in another (Kappos and Rivard 2008; Peng et al 2010; Meissonier et al 2013; Tanriverdi and Uysal 2015).

> "In terms of core systems, someone else in the group [another subsidiary] may request a system change, for example a bit of added functionality. If group agree, then it is done centrally but the rest of the group suffer it too. It can go either way where the systems change is just not useful to us or it can even make for added complexity but you have to live with it in most cases. This is exactly what happened with the changes to the central work planning system we had to adopt it but it was too complex for us because of the way others work, the system became even more prescriptive. It was so bad even some of the larger subsidiaries balked at adopting it and group spent millions trying to make is acceptable because they wanted everyone on the same platform purely to be able to collect their data."

However, the absorption approach, towards supporting the subsidiaries, Haspeslagh and Jamieson (1990), has led to, what could be considered

dysfunctional organisational behaviour as systems are adaption at local level, unbeknown to the owners, in order to better meet the demands of production and lessen the impact upon the business organisation (Balthazard, Cooke and Potter 2006; Buchanan and Huczynski 2008). The size of many of the central systems means this behaviour can easily go unnoticed but some of the results could be very business beneficial were they to be shared (Baxter and Sommerville 2011). The following example is provided by both David and Lloyd.

> *"A problem with such huge systems, for example one of the group communication systems COMMQUEST, is that within the different businesses there are programmers who can tweak systems and they do to get the functionality that is right for them. When systems become so large no one can keep control or understand everything and so changes can go unnoticed."* Lloyd

> *"I've seen one example at local level, that were we to let it out what we had done, it could save the group millions. But you can't"* David

In contrast, proving the complexity of the systems relationship, Paula provides an example which demonstrates the willingness of the parent organisation to support their systems development in a symbiotic and democratic approach, hence a reinvention of the systems strategy (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). However, this was only allowed after it was agreed that an internal development was not the best option, suggesting the parent organisation's preferred approach is still systems adoption where possible, characteristic of the absorption strategy (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

> *"We approached group about a new logistics system. We had to put together a business case to demonstrate that the central solution really did not meet our needs, it was far too data driven and also why our preferred system solution would be better for us and our internal customers. We were given permission to go out and get the system we wanted but the process is bureaucratic. Initially a central steering group look to develop a new system internally and consider whether it should be adopted across the whole group."*

Paula refers to systems developments events which provide cultural underpinning for the absorption systems strategy where the owners seek to leverage as much of

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their Information Systems resources as possible, as they perceive systems as overheads, mostly without regard for the socio-technical implications, such as poor fitting and problematic systems (Buchanan and Huczynski 2008; Kappos and Rivard 2008; Baxter and Sommerville 2011; Meissonier et al 2013).

The identification of this perception, that Information Systems are viewed as an organisational expense, is a key finding of this research as it aids explanation of the parent organisation's approach and strategic thinking towards systems development and funding, that is their willingness to provide systems via the absorption approach, where the intention is to make as many of their subsidiaries share the same system, in effect *'making them like us'* and leveraging their systems resources (Klaus and Blanton 2010; Strong and Volkoff 2010; Baker and Neiderman 2014).

The same approach was taken by the previous owners of organisation TWO where the circumstances and situational variables were identical, as discussed previously in this chapter.

> *"They don't want to spend money, you [the subsidiaries] are viewed as an overhead and often money for IS and IT can be moved around to solve accounting needs at the end of the year which really impacted upon IS/IT development."*
>
> *"If the larger subsidiaries want something or change on a system then they will tend to go off and develop it as a collaboration and then in due course the centre will look to make it a standard for all to adopt. It might be ok or it might be something which is or can be really problematic to work with."*
> Paula

Many of the systems changes for organisation THREE have been adoptions of enterprise-wide core systems, with little consideration of the social and technical implications created as the systems have been developed for application in larger operating environments (Kappos and Rivard 2008; Peng et al 2010; Meissonier et al 2013).

However, Catherine provides further explanation as to the necessity for the absorption strategy of Information Systems, Haspeslagh and Jamieson (1990) as they, over time, have increased the level of collaboration with other subsidiaries of

the group for new product development and component sharing, as the parent organisation leverages not only their Information Systems resource but also their product portfolio (Baker and Neiderman 2014). As such there is a greater requirement for the use of common Information Systems for activities such as reporting, information sharing and problem resolution.

> *"We have increased the level of shared major components as we develop new products together with others in the group, this has been an opportunity for their increased insistence we adopt more and more central systems so that we can share information. Projects are becoming unbelievably complicated, creating more and more new problems to be resolved and our old systems couldn't actually cope."*

> *"Information systems change is very cyclical and changes to the core systems in this industry are driven by new product development. This is why you have to take on board a lot of new systems at once and then little else for some time."*

Understanding the cyclical nature of this industry, in terms of new product development driving Information Systems change, as well as identifying how greater levels collaboration, both in development and production within large-scale diverse organisations has led to the need for common core systems implementation, have both been key findings of this research made possible by its conducting many years post-acquisition (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

In summary, the analysis of this theme has identified a high level of willingness to support the organisation and the development of its Information Systems development environment. In contrast to both organisations ONE and TWO, this willingness takes a completely different form as organisation THREE is the only organisation to be currently the subject of an acquisition by a large-scale, same industry owner.

Whereas organisations ONE and TWO have current owners who possess no systems resource and so have sort to preserve existing Information Systems and support the organisations in developing or acquiring their own future developments. Their approach demonstrates characteristics of the holding, the preservation and the symbiosis strategies, as they support the development of a reinvented systems

model where old and new systems will combine (Haspeslagh and Jamieson 1990; Wignhoven et al 2006; Baker and Neiderman 2014).

In contrast, organisation THREE's owners have taken most of the systems decision and insisted they adopt all centralised core systems where possible, characteristic of the absorption strategy, as they seek to leverage their systems model, consolidating their systems resources as far as possible (Haspeslagh and Jamieson 1990; Wignhoven et al 2006; Baker and Neiderman 2014). This was also the experience of organisation TWO when under the same form of previous ownership. The adoption approach, Haspeslagh and Jamieson (1990) characterised by controlling culture and centralised core systems has been proved to create socio-technical implications, as organisational autonomy is eroded post-acquisition (Wijnhoven et al 2006). A significant factor for this is claimed to be, where systems are implemented in organisations, for which they were not originally designed, for example differing levels of product complexities, organisational size and working practices (Baxter and Sommerville 2011; Daft 2016). This is a key finding of the work and is one which concurs with previous research (Kappos and Rivard 2008; Peng et al 2010; Meissonier et al 2013; Tanriverdi and Uysal 2015).

This research has also identified that where the absorption approach, towards supporting the subsidiaries has been taken, the acquired organisation has engaged in dysfunctional behaviour and without permission adapted centralised systems at local level to enable an improved systems fit (Balthazard, Cooke and Potter 2006; Walczuch et al 2007; Buchanan and Huczynski 2008; Kwahk and Lee 2008, Strong and Volkoff 2010).

A key benefit of undertaking this research many years post-acquisition has been to identify different periods of leadership behaviour, as referred to in the analysis of earlier themes. Again here it has enabled the observation of changing systems approaches, or strategies, as the acquisition has matured where examples of organisational learning have led to more symbiotic behaviour on the part of the owner organisation in support of their acquisition future systems development, hence a reinvention of the systems strategy (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014).

This analysis has also identified a link between the perception of the Information System function by the acquiring organisation and their subsequent strategic approach. Where the function is viewed as a cost, the owners seek to leverage as much of their resource as possible through an absorption strategy, and this can be without regard for socio-technical factors (Haspeslagh and Jamieson 1990; Buchanan and Huczynski 2008; Kappos and Rivard 2008; Klaus and Blanton 2010; Strong and Volkoff 2010; Baxter and Sommerville 2011; Meissonier et al 2013; Baker and Neiderman 2014).

However, in support of the case for the owners pursuing an absorption strategy in order to support its' acquisition, regardless of socio-technical implication, historical factors and growing levels of inter-subsidiary collaboration have been proven to necessitate the need for this approach as the requirement for modern, robust and common Information Systems increases to facilitate activities such as reporting, information sharing and problem resolution.

So far, the changing levels of participation afforded to organisation THREE, in respect of their Information Systems environment, has been aligned with changes in the style of central leadership. However, again, due to the time elapsed since acquisition it has been identified that, for this industry, periods of absorption, where core systems have to be adopted, are driven by the cyclical process of new product development (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

6.3.6 Theme SIX: Post-Acquisition IS Rationalisation and Collaboration

The analysis of the data for organisation THREE demonstrates synergies with the past experiences of organisation TWO when under the same ownership profile. These include, large-scale systems adoption which brought about organisational changes such as, the rationalisation of working methods, (Baxter and Sommerville 2011; Daft 2016) and increased levels of cross group information sharing to enhance reporting. Also organisation THREE has, as time has progressed, engaged

in greater levels of new product development and manufacture through greater levels of collaboration, within the group of subsidiaries. This is in contrast to organisation TWO whose relationship with its previous owners and subsidiaries, did not extent to this level. The experiences which both organisations shared are examples of the absorption strategy (Haspeslagh and Jamieson 1990) which enabled the owner's to leverage their system resources (Davenport 2000; Konradin 2009; Soja 2010; Marques and Guerrini 2012; Baker and Neiderman 2014; Da Silva 2014).

The benefit of conducting this research at a significantly later stage than previous research, post-acquisition, is that it has enabled observations of the evolving relationship between the organisation, its parent owner and other subsidiaries that are part of the group, some of which have more recently been acquired. This has facilitated a greater understanding of the post-acquisition Information Systems development environment which has proven to be more complex and dynamic than previously identified in the literature (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

As an example, at the point of acquisition or soon after, where studies to date have been conducted, the findings would, as with organisation TWO, have been less favourable, focussing upon the needs for systems change due to their inadequate poor quality systems resource, given the parent organisations aims of growth. Also, the subsequent socio-technical implications of change, including resistance towards poor fitting systems which have been designed for application is a different environment (Levina and Vaast 2005; Andersson and Henfridsson 2008; Kappos and Rivard 2008; Baxter and Sommerville 2011; Meissonier et al 2013; Tanriverdi and Uysal 2015).

This research demonstrates that, over time, such systems changes become embedded as the organisation adapts and sees the advantages of having large-scale systems resources made available. These can facilitate new business opportunities through boundary spanning collaborations and efficiencies via rationalisation and

systems stability (Davenport 2000; (Sumi and Tsuruoka 2002; Yoo, Lyytinen and Heo 2007; Vieru and Rivard 2015).

Rationalism and collaboration have been found to not always result in Information System adoption from the parent organisation as the relationship and systems strategy becomes multi-layered over time (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). As well as periods of systems adoption there has, in more recent times, been a reinvention of the systems strategy characteristic of the symbiosis approach where systems co-exist, providing data can be transferred in compatible formats. This demonstrates the ongoing complexity of the Information Systems development environment as opposed to a simplification of systems post-acquisition (Christensen et al 2011; Baker and Neiderman 2014). Although complex the organisation now has a more flexible systems relationship with their owner and can source other systems locally which better fit their unique characteristics, such as their size, production capacity and complexity avoiding potential socio-technical implications such as resistance and increasing the levels of acquisition success (Strong and Volkoff 2010; Klaus and Blanton 2010; Christensen et al 2011).

Although, the complex strategy of absorption of core systems and symbiosis of more bespoke systems appears to provide the best solution, there is the possibility that it could result in some level of systems functionality duplication (McKiernan and Merali 1995; Alaranta and Parvinen 2005; Origitano 2006; Mouawad 2011; Schnurman 2013; Tanriverdi and Uysal 2015). Some functions across the subsidiaries are more suitable to rationalisation and absorption because of their operational commonality, McKiernan's and Merali (1995) enabling leverage of the systems resources and creating globally standard systems and processes (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). Mostly these functions are secondary to core operation, but not exclusively, and a rationalisation of such systems would create cost savings without affecting production quality (Origitano 2006, Mouawad 2011, Schnurman 2013).

More recently, as the relationship between the organisation, its owner and other subsidiaries matures, reorganisation has led to greater collaboration and systems sharing where both collaboration and rationalisation take place under a new sub-

structure which groups together subsidiaries with similar characteristics, such as product complexity and volumes. However, the arrangements have created resource and risk obligations for the organisation. Whereas the owners have sort to leverage their systems resources as the subsidiaries adopt central systems as part of the absorption strategy, organisation THREE, cannot achieve the same leverage because of the collaborative arrangements as opposed to contractual agreements (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

Lloyd identifies that, like the previous experiences of organisation TWO when under the same ownership profile, large-scale systems adoption brings organisational change, for example, rationalising ways of working (Baxter and Sommerville 2011; Daft 2016) and increased levels of global information sharing for the purpose of enhancing reporting as well as product development and manufacture via inter-organisational collaboration. This absorption strategy, Haspeslagh and Jamieson (1990) again, enables the leveraging of the group's system resources (Davenport 2000; Konradin 2009; Soja 2010; Marques and Guerrini 2012; Baker and Neiderman 2014; Da Silva 2014).

> *"Since we were taken over, nothing happened really to start with and then with the development of our first new product in years came a raft of systems changes which were necessary to build it. It wasn't the first time we'd shared components but it was the biggest to date by far. The systems made a lot of change to how we operated at shop floor level especially. Much better connectivity between machines, no paperwork, processes eradicated and a lot of information sharing. Everything is much more visible both here and centrally across the group."*

Had this research taken place much sooner post-acquisition, the evolution of the relationship between the organisation, its parent owner and other subsidiaries who have joined the group could not have been observed and analysed (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

The analysis of the data collected shows that at the point of acquisition, or soon after, the findings of the study would have been more negative because of the

required adoption of central systems, like organisation TWO, focussing upon the essential need for systems changes due to possessing either poor quality or no systems resource and the subsequent socio-technical implications of change, for example resistance towards poor fitting systems which have been designed for application is a different setting (Levina and Vaast 2005; Andersson and Henfridsson 2008; Kappos and Rivard 2008; Baxter and Sommerville 2011; Meissonier et al 2013; Tanriverdi and Uysal 2015).

In contrast, this research demonstrates that, over time such systems change becomes embedded as the organisation adapts and sees the advantages of having large-scale systems resources made available which facilitate new business opportunities through boundary spanning collaborations and efficiencies through rationalisation and systems stability (Sumi and Tsuruoka 2002; Yoo, Lyytinen and Heo 2007; Vieru and Rivard 2015).

> *"The central systems have not changed that much over the years because they are so huge and are embedded in most subsidiaries. They have evolved but they are still basically the same systems. Regardless of how poorly they fitted with our methods at the time, we have changed and they (the systems) have provided us with a stable platform as we collaborate on every project now with at least one or two other subsidiaries in group. When you work like this you need a standard core system."* Graham.

The notions of rationalism and collaboration does not always mean Information System adoption of central resources (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). As Lloyd explains, there have been periods of essential systems adoption, but in more recent years there has been a relaxing of policy and a reinvention of the systems strategy more characteristic of symbiosis where systems co-exist, providing data can be transferred in compatible formats demonstrating this mixed and more flexible approach towards the Information Systems development environment can create a successful relationship between acquiring and acquired organisations (Christensen et al 2011; Baker and Neiderman 2014).

> *"There are still a lot of systems which they will state, you have to take on board with no debate these are the rules. But where previously they would have said you will use 'X' system for everything, now they will say if you wish to use a different system then ok but make sure your data is in compatible*

format so that we can all share it. This is great for us as we can but systems which better suit our size and complexity."

Catherine provides further evidence that supports the changing position and strategy from absorption to symbiosis (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). Again noting the greater systems acceptance and lower organisational resistance, Buchanan and Huczynski (2008) years on from acquisition as the organisation has increased its collaborations (Davenport 2000; Vieru and Rivard 2014).

However, whilst currently accepting the role of the centralised core systems, organisation THREE now has a more flexible systems agreement and, relationship with their owner and can source other systems locally which better fit their unique characteristics, for example size, production capacity and complexity avoiding potential socio-technical implications such as resistance (Strong and Volkoff 2010; Klaus and Blanton 2010; Christensen et al 2011).

Although, this complex strategy of absorption of core systems and symbiosis of more bespoke systems appears to provide the best of both worlds for organisation THREE, there is a danger that it could result in some level of systems functionality duplication (McKiernan and Merali 1995; Alaranta and Parvinen 2005; Origitano 2006; Mouawad 2011; Schnurman 2013; Tanriverdi and Uysal 2015).

> *"Over time as we have increased the number of collaborations and the collaborations have involved more parts of the group. We see the core systems as essential. It's all about information sharing now and their systems are so powerful for analysis, it is vital. But it is good to have the flexibility to be allowed to go it alone for other systems we need that are more bespoke to us."* Paula

Adding further complexity to the different Information Systems strategies, Paula states that certain functions of the organisations across the group of subsidiaries are more suitable to rationalisation and the strategy of absorption because of their operational commonality, McKiernan's and Merali (1995) enabling the group to leverage their systems resources and create globally standard systems and processes (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). Mostly these functions are secondary to core operation but not exclusively and a

rationalisation of such systems would create cost savings without affecting production quality (Origitano 2006, Mouawad 2011, Schnurman 2013).

> *"Purchasing, which is considered a core system as it is linked to so many production systems, like finance and HR really are functions where you can dictate standards for systems. That kind of process does certainly lend itself to standard procedures and a common set of systems. Also there are a series of rules and best practice guidelines which govern purchasing and gathering that data centrally in a commonly used system could even be beneficial for reporting purposes or governance adherence."* James

James cites examples, of a more primary systems nature, where both collaboration and rationalisation are now taking place under the new sub-structure created by the group (the grouping of subsidiaries with similar characteristics, such as product complexity and volumes). However, there are agreement and contractual agreement complexities which has created both resource and risk obligations for the organisation. In contrast to the owner's ability to leverage their systems resources by their subsidiaries adopting central systems as part of the absorption strategy, organisation THREE, cannot achieve the same leverage because of the collaborative arrangements as opposed to contractual agreements (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). Although this situation may work in terms of supporting the subsidiaries to work together, there has to be acknowledgement and acceptance that whilst it enables the wider-organisation to leverage its systems model, it does not achieve the same leverage at the local level because of the form of contractual agreement (Baker and Neiderman 2014).

> *"Under the new structure, where we are going to be formally working with the other smaller subsidiaries within the group. We are now the oldest member of this team so we are literally giving them some of our systems which we have worked on over the years to make them better fit our scale of operation and they expect a lot of support which we have to provide on a collaborative agreement. When you end up providing and supporting your 'gold' and 'platinum' systems [refers to the level of business criticality and risk] then there should be a far more of a contractual arrangement."* James

In summary, the analysis demonstrates synergies with the past experiences of organisation TWO when under the same ownership profile, demonstrating a level

of consistency where smaller organisations are acquired by large-scale same industry organisations there will be a requirement to adopt centralised Information Systems resources. These include, large-scale systems adoption bringing organisational change including, rationalising ways of working, Baxter and Sommerville (2011) Daft (2016) and increased levels of inter-group information sharing to facilitate enhanced reporting. In addition organisation THREE has, over time, engaged in greater levels of product development and manufacture via inter-organisational collaboration, unlike organisation TWO who's relationship, with its previous owners and subsidiaries, did not extent to this level. However, these are both examples of the absorption strategy, Haspeslagh and Jamieson (1990) enabling the leveraging of the owner's system resources (Davenport 2000; Konradin 2009; Soja 2010; Marques and Guerrini 2012; Baker and Neiderman 2014; Da Silva 2014).

A benefit of undertaking this research much later, post-acquisition, is that it has enabled the observation of the evolving relationship between the organisation, its parent owner and other subsidiaries who are part of the group. This has enabled a greater understanding of the post-acquisition Information Systems development environment which has proven to be more complex and dynamic that previously identified. This research enhances the themes of the conceptual model whist proving additional categories of information to support practicing managers throughout the different phases of the merger and acquisition relationship (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

For example, at the point of acquisition, or soon after, where studies to date have been conducted, the findings would, as organisation TWO, have been more negative, concentrating upon the essential needs for systems changes due to possessing either poor quality or no systems resource and the subsequent socio-technical implications of change, such as resistance towards poor fitting systems which have been designed for application is a different operating environment (Levina and Vaast 2005; Andersson and Henfridsson 2008; Kappos and Rivard 2008; Baxter and Sommerville 2011; Meissonier et al 2013; Tanriverdi and Uysal 2015).

In contrast, this research demonstrates that, over time, such systems change becomes embedded as the organisation adapts and sees the advantages of having large-scale systems resources made available which facilitate new business opportunities through boundary spanning collaborations and efficiencies through rationalisation and systems stability (Davenport 2000; (Sumi and Tsuruoka 2002; Yoo, Lyytinen and Heo 2007; Vieru and Rivard 2015). The subsequent growth and stability of the organisation over the years post-acquisition demonstrates this approach to have led to a positive outcome supporting the longevity of the relationship.

Rationalism and collaboration has been found to not always result in Information System adoption from the parent organisation (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). As well as periods of systems adoption there has in more recent times been a reinvention of the systems strategy more characteristic of symbiosis where systems co-exist, providing data can be transferred in compatible formats (Christensen et al 2011; Baker and Neiderman 2014). In addition, the organisation now has a more flexible systems relationship with their owner and can source other systems locally which better fit their unique characteristics, for example size, production capacity and complexity avoiding potential socio-technical implications such as resistance (Strong and Volkoff 2010; Klaus and Blanton 2010; Christensen et al 2011).

Although, this complex strategy of absorption of core systems and symbiosis of more bespoke systems appears to provide the best solution, there is the possibility that it could result in some level of systems functionality duplication which may not support the efficient operation of related processes (McKiernan and Merali 1995; Alaranta and Parvinen 2005; Origitano 2006; Mouawad 2011; Schnurman 2013; Tanriverdi and Uysal 2015). Although some functions across the subsidiaries are more suitable to rationalisation and absorption because of their operational commonality, McKiernan's and Merali (1995) enabling the leveraging of the systems resources and creating globally standard systems and processes (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). Mostly, these functions are secondary to core operation but not exclusively and a rationalisation

of such systems would create cost savings without affecting production quality (Origitano 2006, Mouawad 2011, Schnurman 2013).

In more recent times as the relationships between the subsidiaries has matured, collaboration and systems sharing has increased under the new sub-structure where those who develop and produce similar products can support each other both via the sharing of knowledge and operating efficiencies. However, arrangements and contractual agreement complexities have created both resource and risk obligations for the organisation. This means, in contrast to the owner's ability to leverage their systems resources by their subsidiaries adopting central systems as part of the absorption strategy, organisation THREE, cannot achieve the same leverage because of the collaborative arrangements as opposed to contractual agreements (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

6.4   Conclusions

Having applied the model of Haspeslagh and Jamieson (1990) as a framework to support the case analysis it has identified that organisations do not hold a static position in relation to the strategic approach to the Information Systems development environment, rather the strategy and relationship they have with their acquirers is dynamic. The evidence demonstrates the benefit of conducting this research many years post-acquisition, as it has identified that this organisation has experienced different periods of leadership manifesting itself in different systems relationships. There have been periods of autocracy, symptomatic of the absorption strategy and periods of greater flexibility where the organisation was able to make more decisions about their own Information Systems future, characteristic of both the holding and symbiosis strategies.

The analysis has identified that at the time of acquisition, like organisations ONE and TWO, organisation THREE possessed poor quality inadequate Information Systems given the parent organisation's aims for growth. The organisation recognised the need for change and are grateful for access to world leading systems

capabilities. However, all three organisations have stated the same implications of adopting systems which have been developed large scale operations, which are culturally different, with different production volumes and levels of complexity which have been identified throughout the analysis and are returned to in the following discussion (Chapter Seven) (Kappos and Rivard 2008; Peng et al 2010; Meissonier et al 2013).

The analysis demonstrates the owner is engaging with a multi-layered and complex Information Systems strategy. There is evidence of adoption, where subsidiaries take on board all centralised systems consolidating and leveraging their systems capabilities. Also symbiosis, where subsidiaries are allowed to purchase or tailor existing systems to accommodate their individualities, reinventing their system model through combination and co-existence. In addition, there is evidence supporting the preservation strategy, where the latest acquisition is allowed to maintain their Information Systems solution (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). This co-existence is evidence of a conglomeration strategy, Baker and Neiderman (2014) although, over time, it may be transition from preservation to symbiosis (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006).

The mixed and dynamic approach to Information Systems strategies is supporting the growth and success of the group of subsidiaries to which organisation THREE belongs. This research demonstrates that as organisations continue to merge or acquire others, forming larger organisational entities, this approach is critical for success and longevity and is a key contribution of this work.

In contrast to the findings of the two previous chapters, where the acquirers have not possessed a suitable systems solution, this analysis has been able to considered the systems relationship more equally, that is from the perspective of both the acquired organisation and also that of the owner. Again a benefit of conducting the research much later post-acquisition (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008 Mouawad 2011). As such, factors which affect and change relationship, the *'how'* and *'why'* questions, have also been identified, for example, historical decision making and actions and

changes in leadership and culture (McManus and Wood-Harper 2007; Kappos and Rivard's 2008; Clark, Gioia, Ketchen and Thomas 2010; Peng et al 2010; Meissonier et al 2013).

Organisation THREE has seen the longest time post-acquisition and from its perspective it is experiencing a combination of the strategies of absorption, where old systems are replaced, not preserved, King et al (2004) Rai and Tang (2010) Tanriverdi and Uysal (2015) and symbiosis where freedom is given to tailor internally provided systems or acquire their own which then co-exist alongside centralised core systems (Haspeslagh and Jamieson 1990; Wijnhoven 2006). Evidence suggests this experience is dependent upon the leadership style of the parent organisation which changes approximately every three years, demonstrating how social factors, such as, management hold technical implications (Baxter and Sommerville 2011).

The independence and autonomy of organisation THREE is the most complex of all three organisations in this study. The major difference is they have been acquired by a same industry, large-scale parent who owns a number of other manufacturing capabilities and possess an Information Systems solution in contrast to the owners of organisations ONE and TWO. Although organisation TWO had previously experienced the same situation, under a previous owner, they, at the time of acquisition were without a system solution and so the acquirer's decision was a full absorption strategy enabling them to leverage their systems capability (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). In contrast, organisation THREE's acquirers, despite them functioning with poor quality Information System, took time to gain an understanding of their acquisition prior to requiring them to undertake central core systems via a series of large-scale adoptions at different periods of time post-acquisition (Sumi and Tsuruoka 2002; Cross and Parker 2004; Yoo, Lyytinen and Heo 2007; Vieru and Rivard 2015).

A further key finding of this work, again due to it taking place at a significant stage after acquisition, is that the changing nature of the systems environment has been observed which can provide knowledge for application by other organisations. In this case, during the early phase of their acquisition, organisation THREE, was very

different to the other larger subsidiaries which make up the group. For example when adopting systems, as required to do so, the majority of compromise was on their part as large scale centralised Information Systems lack flexibility (Kappos and Rivard 2008; Peng et al 2010; Meissonier et al 2013).

The analysis has identified a series of examples which support two theoretical positions.

Firstly, that participation is essential in order to avoid failure and value destruction through; excessive systems complexity, poor organisational fit and changing business processes (Klaus and Blanton 2010; Strong and Volkoff 2010; Chakrvorty, Dulaney and Franza 2016; Hughes, Dwivedi, Rana and Simintiras 2016). Secondly, that participation in the process of developing systems which meet the needs of organisations is critical, where the key characteristics and the operating environment differ from that where the systems have originally been developed (Hughes and Wood-Harper 2000; Alaranta and Henningsson 2008; Laudon and Laudon 2015; Tanriverdi and Uysal 2015).

There has, throughout the time since acquisition, always been high levels of willingness to support the organisation and the development of its Information Systems development environment although the approach has changed numerous times. Whereas organisations ONE and TWO have current owners who possess no systems resource and so have sort to preserve existing Information Systems and support the organisations in developing or acquiring their own future developments. Their approach demonstrates characteristics of the holding, the preservation and the symbiosis strategies, as they support the development of a reinvented systems model where old and new systems will combine (Haspeslagh and Jamieson 1990; Wignhoven et al 2006; Baker and Neiderman 2014). In contrast, organisation THREE's owners have taken most of the systems decision and insisted they adopt all centralised core systems where possible, characteristic of the absorption strategy, as they seek to leverage their systems model, consolidating their systems resources as far as possible (Haspeslagh and Jamieson 1990; Wignhoven et al 2006; Baker and Neiderman 2014). This was also the experience of organisation TWO when under the same form of previous ownership.

This research has also identified that where the absorption approach, towards supporting the subsidiaries has been taken, the acquired organisation can engaged in dysfunctional behaviour and adapted centralised systems to enable an improved systems fit (Balthazard, Cooke and Potter 2006; Walczuch et al 2007; Buchanan and Huczynski 2008; Kwahk and Lee 2008, Strong and Volkoff 2010).

This analysis has also identified a link between the perception of the Information System function by the acquiring organisation and their subsequent strategic approach. Where the function is viewed as a cost, the owners seek to leverage as much of their resource as possible through an absorption strategy, and this can be without regard for socio-technical factors (Haspeslagh and Jamieson 1990; Buchanan and Huczynski 2008; Kappos and Rivard 2008; Klaus and Blanton 2010; Strong and Volkoff 2010; Baxter and Sommerville 2011; Meissonier et al 2013; Baker and Neiderman 2014). However, in support of the case for the owners pursuing an absorption strategy in order to support its' acquisition, regardless of socio-technical implication, historical factors and growing levels of inter-subsidiary collaboration have been proven to necessitate the need for this approach as the requirement for modern, robust and common Information Systems increases to facilitate activities such as reporting, information sharing and problem resolution.

There are many synergies with the past experiences of organisation TWO when under the same ownership profile, including large-scale systems adoption bringing organisational change including, rationalising ways of working, Baxter and Sommerville (2011) Daft (2016) and increased levels of inter-group information sharing to facilitate enhanced reporting. In addition organisation THREE has engaged in greater levels of collaboration with other subsidiaries, unlike organisation TWO who's relationship, with its previous owners and subsidiaries, did not extent to this level. However, these are both examples of the absorption strategy, Haspeslagh and Jamieson (1990) enabling the leveraging of the owner's system resources (Davenport 2000; Konradin 2009; Soja 2010; Marques and Guerrini 2012; Baker and Neiderman 2014; Da Silva 2014).

A further benefit of undertaking this research later than previous studies, is that it has enabled the observation of the evolving relationship between the organisation,

its' parent owner and other subsidiaries who are part of the group creating a greater understanding of the post-acquisition Information Systems development environment which has proven to be more complex and dynamic that previously identified (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

At the point of acquisition, or soon after, where studies to date have been conducted, the findings would, as for organisation TWO, have been negative, concentrating upon the essential needs for systems changes due to possessing either poor quality or no systems resource and the subsequent socio-technical implications of change and resistance because of poor fitting systems designed for different environments (Levina and Vaast 2005; Andersson and Henfridsson 2008; Kappos and Rivard 2008; Baxter and Sommerville 2011; Meissonier et al 2013; Tanriverdi and Uysal 2015).

In contrast, this research demonstrates that, over time, such systems change becomes embedded as the organisation adapts and sees the advantages of having large-scale systems resources made available which facilitate new business opportunities through boundary spanning collaborations and efficiencies through rationalisation and systems stability (Davenport 2000; (Sumi and Tsuruoka 2002; Yoo, Lyytinen and Heo 2007; Vieru and Rivard 2015).

Rationalism and collaboration has been found to not always result in Information System adoption from the parent organisation (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). As well as periods of systems adoption there has in more recent times been a reinvention of the systems strategy more characteristic of symbiosis where systems co-exist, providing data can be transferred in compatible formats (Strong and Volkoff 2010; Klaus and Blanton 2010; Christensen et al 2011; Baker and Neiderman 2014).

Although, this complex strategy of absorption of core systems and symbiosis of more bespoke systems appears to provide the best solution, there is the possibility that it could result in some level of systems functionality duplication (McKiernan and Merali 1995; Alaranta and Parvinen 2005; Origitano 2006; Mouawad 2011;

Schnurman 2013; Tanriverdi and Uysal 2015). Although some functions across the subsidiaries are more suitable to rationalisation and absorption because of their operational commonality, McKiernan's and Merali (1995) enabling the leveraging of the systems resources and creating globally standard systems and processes (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014).

Chapter 7:   Discussion, Contribution and Reflections

7.1   Introduction

This chapter provides a detailed cross-case discussion of the findings of this research. Firstly, the discussion considers the analysis of the primary data from the three participating organisations and the conceptual framework which emerged from the six themes which have been identified. Secondly, the discussion is structured by the application of the model developed by Haspeslagh and Jamieson (1990) subsequently applied by Wijnhoven et al (2006) and Baker and Neiderman (2014). Finally, the contribution of this work is considered in the context of the research aims, as set out in chapter one. Throughout, the discussion will be considered against previous research and the theoretical concept framework provided in chapter two.

Contribution is the mainstay of scholarly activity (Hambrick 2007; Corley and Gioia 2011). Although some scholars are still today questioning what it means to have made a (theoretical) contribution (Smith and Hitt 2005, Bartunek, Rynes and Ireland 2006, Kilduf 2006, Rindova 2008). However, there is agreement that a contribution rests largely on the ability to provide original insight into a phenomenon by advancing knowledge in a way that is deemed to have purpose (Corley and Gioia 2011).

Corley and Gioia (2011) further define the notions of originality and usefulness with originality being subdivided along a continuum from incremental, where the contribution should progressively advance our understanding to revolutionary where a profoundly different perspective of phenomenon is achieved. Usefulness or utility is defined as being either practical, that is a contribution which can be directly applied to problems or by practicing managers or scientific (theoretical) an advancement which improves conceptual rigour.

This chapter sets out how this work has created new knowledge which, incrementally, adds to the existing body of knowledge and provides practitioners with a new conceptual framework from which to analyse and evaluate acquisition

activities regardless of time, whether they are pre, during or at a significant point post-acquisition.

In addition, the chapter demonstrates the value of undertaking the alternative neo-empirical theoretical approach which has further confirmed the validity of research to date that has been derived from the positivist school of research, of which the resulting theoretical conceptual framework is still valid (Chapter two) (Hirschheim 1989; Bhatt et al 2005; Kappos and Rivard 2008; Alaranta and Mathiassen 2014). This approach has also enabled significant findings without the need for a time consuming longitudinal study. It has enabled in depth research activity to be conducted with senior managers who possess high levels of tenure, within their organisations via the employment of more qualitative research gathering methods than previously studies (Hirschheim 1989; Bhatt et al 2005; Kappos and Rivard 2008; Alaranta and Mathiassen 2014).

7.2   Discussion of Themes Identified

The analysis of the data collected identified six themes which correspond to those identified in the literature demonstrating the continued relevance of other research to date. The analysis has also refined and enriched the themes by identifying 36 subcategories of important factors, following the process of reduction as part of the general inductive approach, demonstrating a contribution to knowledge (Thomas 2006; Eriksson and Kovalainen 2008).

These enriched themes now provide practicing managers with a new framework with which to better analyse and understand the Information Systems functions and the implications of merger and acquisition activity, not only pre or immediately post-acquisition but also at much longer periods afterwards. Although the setting for this research has been the automotive sector, the categories which have been added to the themes may well be fundamental to other sectors demonstrating a contribution to practice whilst forming a basis for future research, in contrast to the claim that attempts to provide a guide or supporting framework to better understand the relationship and implications of Information Systems and

acquisition activity could be futile due to the diversity of variables concerned (Alaranta and Mathiassen 2014).

The discussion demonstrates that themes and categories are more or less relevant to the case organisations depending upon key critical factors which have been identified through this research. Thus, achieving the research aims of enhancing the current body of literature whilst equipping practicing managers with new knowledge to pursue future merger and acquisition success. These include; same industry owners (acquirers), the size of the organisation being acquired, the time laps post-acquisition and product specific complexities, which will lead to a range of different socio-technical implications (Baxter and Sommerville 2011; Daft 2016). The identification of these factors was particularly helped by conducting this research many years post-acquisition as it has identified that organisations experience different systems relationships over time (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

Considering the post-acquisition organisational relationship, the analysis demonstrated that large same industry organisations do dominate the Information Systems landscape where possible as, historically they have possessed the resources to develop large-scale Information Systems resources and have had the economies of scale to increase their effectiveness. Subsequently, following acquisitions they expect their acquisitions to implement/adopt their resources in order to share information and, more importantly, leverage their systems resources (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

The categories of theme one were not so relevant to organisation ONE as they had a complex ownership profile made up mostly by non-industry owners and possessed their own core Information systems which had previously been developed locally. However, their large-scale same industry minority owner did insist upon systems adoption for transactional purposes which was readily accepted regardless of any socio-technical implications such as changing operating and

business processes (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Daft 2016).

In contrast, organisation THREE, whose owners are from the same industry, has experienced much more of the large-scale owners' dominance and are expected to adopt centralised Information Systems, except where there is a suitable business case made for an alternative approach. This was also the case for organisation TWO when acquired by their previous same industry owners. Systems which they are still shackled to years later under their new ownership as the current owners are not from the same industry and possess no suitable alternative systems.

As such, understanding the relative position of acquiring organisations, relative size and industry, identifying whether or not they possess an Information Systems resource and knowing their strategic drivers, for example, whether or not they intend to leverage any such resources as part of the acquisition are important factors.

The characteristics of the high-level relationship form drives post-acquisition expectations of both the acquiring and acquired organisations and this research has gained greater insight into this theme because of the alternative neo-empiricist theoretical perspective and use of qualitative data methods (Hirschheim 1989; Bhatt et al 2005; Kappos and Rivard 2008; and Alaranta and Mathiassen 2014).

Gaining knowledge of both parties' expectations of each other, in regards to the Information Systems function, is critical to understanding the implications and potential socio-technical changes which are likely to be incurred. These can determine the degree of acquisition success or otherwise and are the subject of the next theme (Buchanan and Huczynski 2008; Baxter and Neiderman 2011; Daft 2016).

All three organisations taking part in this research have demonstrated a high level of acceptance of the expectations placed upon them, whether it be from their owners or other external selected systems partners. In each case the expectations are driven by the owner's aims for their acquisitions, which, in all three cases is growth and greater efficiency. There is acceptance of these aims as all three

organisations accept that they are small volume manufacturers, operating with poor quality out-of-date systems and this position has proven to be unsustainable in this industry. As such, acceptance of expectations will ensure survival and is welcomed.

In the case of organisation ONE, who own their core systems which were developed with their specific needs in mind, their acceptance of expectations resides with the partners with whom they share, or have developed, new systems. Here the external pressure to adhere to their partners' expectations is based around the securing of systems intellectual property, especially where systems which are shared leading-edge and potentially offer a competitive advantage. In contrast, their acceptance of the expectations of their minority owners is based upon the desire to maintain operational transactions with them and so the organisation has to change and comply, operationally, with the relevant parental systems. Again demonstrating the dominance and reliance upon large-scale same-industry organisations.

In contrast, organisation TWO's experiences are driven by their historical acquisition, where again, due to possessing poor quality Information systems resources, which could not support the achievement of the owners growth aims. On this occasion, the organisation was expected to absorb all central Information Systems regardless of the socio-technical change implications required to makes systems, which had been designed for a different cultural environment, on a much greater scale, with less product complexity, work (Buchanan and Huczynski 2008; Kappos and Rivard 2008; Peng et al 2010; Baxter and Neiderman 2011; Meissonier et al 2013; Daft 2016). As such the relationship was more one sided with little opportunity for participation in the decisions which affected the organisation (Hughes and Wood-Harper 2000; Hughes, Dwivedi, Rana and Simintiras 2016). This may have been a contributing factor towards the subsequent divestment and acquisition by a non-industry organisation as the systems resource is embedded to such an extent that it cannot be replaced whilst maintaining operations (Lyytinen and Hirschheim 1987; Dalcher and Drevin 2003; Rogers 2005; McManus and Wood-Harper 2007; Sarrazin and West 2011).

Organisation THREE demonstrates a high degree of acceptance of the owner's expectations to absorb large levels of centralised systems resources. Again this was driven by the parental aims for growth and efficiency which their poor quality resources could not support. Adoption was seen as inevitable and welcomed for survival. However, this case, like organisation TWO, has significantly highlighted the socio-technical and operation implications of absorbing systems developed for application in a different culture and for very high volumes of production with low levels of product complexity (Buchanan and Huczynski 2008; Kappos and Rivard 2008; Clark, Gioia, Ketchen and Thomas 2010; Peng et al 2010; Baxter and Neiderman 2011; Meissonier et al 2013; Daft 2016). But again it also proves the continued reliance upon larger organisations for Information Systems resources and the need to comply with their procedures and policies (McKiernan's and Merali 1995).

Theme three, leads on from the previous theme as it identifies and explains how the post-acquisition expectations affect upon organisational independence and autonomy. Organisations TWO and THREE have demonstrated the inflexibility of large parent organisations and their Information Systems, which have been developed over time to suit their specific needs and variables.

Acceptance of such systems has been with mixed emotions, as there is a clear acknowledgement on the part of both organisations that their aging poor quality systems resources where not fit for purpose and presented a growing technology gap which was detrimental for their future survival, let along growth. However, as smaller industry organisations, operating at the high-end niche of production, the absorbed parent systems have reduced their levels of independence and autonomy and presented a range of socio-technical challenges associated with the imposition of systems designed for different cultural and operating environments (Buchanan and Huczynski 2008; Kappos and Rivard 2008; Peng et al 2010; Baxter and Neiderman 2011; Meissonier et al 2013; Daft 2016).

In contrast, although organisation ONE presents the same initial problems of possessing a poor quality, inadequate systems resource, it, like organisation TWO is now owned by majority owners who are not of the same industry and possess no

suitable alternative systems. However, whereas organisation TWO's current owners have secured the continuation of systems supply, with the poor fit and restrictions upon independence and autonomy, organisation THREE has been empowered to develop its own systems future with external partners thus enhancing their independence and autonomy (Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995; Wijnhoven et al 2006). This alternative arrangement means organisation THREE is now developing significant levels of new Information Systems which are directly related to their specific needs, smaller scale and product characteristics and levels of complexity. Organisation TWO is also pursuing this model of systems development, now, but at a much slower pace because of the continued large-scale core systems remaining in place.

The levels of independence and autonomy directly influence the levels of post-acquisition participation afforded to the three organisations (theme four).

The analysis clearly identifies that where there is participation in the decision making process which affects the organisations Information Systems resource, the organisation will develop better quality systems with improved fit to their unique characteristics avoiding the socio-cultural implications as given previously in this section (Buchanan and Huczynski 2008; Kappos and Rivard 2008; Peng et al 2010; Baxter and Neiderman 2011; Meissonier et al 2013; Daft 2016).

Regardless of participation, however, it is also evident in all three cases, that small organisations do benefit from the resources of much larger organisations despite the socio-technical problem experienced by those taking part (Buchanan and Huczynski 2008; Baxter and Neiderman 2011; Daft 2016). Organisations TWO and THREE state their previously poor quality systems provision has been improved despite the need to change operating processes and adapt, where possible, to make the systems function appropriately given the unique features and complexities of their manufacturing processes. (Kappos and Rivard 2008; Peng et al 2010; Meissonier et al 2013).

In all three cases organisations, the adoption of centralised systems, and adaption of operational processes, has been necessary to facilitate transactional

relationships between the acquiring and acquired organisations: Organisation ONE with their minority owner, organisation TWO in the case of their previous owners (hence this relationship is now defunct), and organisation THREE where new product development and manufacture is group wide.

Finally, a further characteristic of this theme, demonstrated by all three organisations, is, as small organisations, their preference in terms of new systems development is to 'buy' rather than 'develop'. Both organisations ONE and THREE stated the lack of ability and understanding of relatively small scale manufacture by the more notable systems developer organisations. Organisation THREE is only now been afforded the independence and autonomy to work with local systems providers where they prefer to buy tailorable off-the-shelf solutions, as is the case with organisation TWO. Organisation ONE provides evidence that this approach certainly works for organisations of this size and production scale as their core systems solution was developed locally and specifically for their needs and characteristics and product complexities. Although they, also, purchase or share new systems where suitable, their approach is also to develop systems, but with partners of more equal size. However, there are limitations to the success of this developer approach where product complexities still differ.

Theme five, identifies in each of the cases a willingness on behalf of the parent organisations a willingness to support their acquisitions. Although, this manifests itself in different ways, with differing implications. Again the complexities of these theme are driven by industry characteristics such as, the trend for acquirers to extend their domain, desires to leverage their large systems resources (designed for their own requirements) and increase common component sharing across a broader range of products.

Organisation THREE is clearly experiencing the greatest level of these factors where they have taken on board significant levels of centralised systems. As the case with the longest tenure in this study, it has been possible to observe that the support has now become two-way as they are now supporting other later group acquisitions with systems and knowledge (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). Again a benefit of undertaking

this research much later post-acquisition than previous studies (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

Although there are socio-technical implication of the systems adoption, as discussed in this section previously, there is acceptance of the imposition as it is recognised that product and manufacturing requires drive the system's needs. Also, where there are high levels of component sharing, the smaller members will have the most socio-technical adaptions to accept (Baxter and Sommerville 2011; Daft 2016).

Although organisation TWOs previous acquisition is similar to that of organisation THREE, under their current ownership the willingness to support exists on two levels. Firstly, there was the securing of their core systems to enable them to continue to operate, lessening the business impact despite the system being ill-fitting. Secondly, and like organisation ONE, the owners are prepared to finance external new systems development or purchase and afford them the independence and autonomy to make their own decisions with regards to their Information Systems future.

In common with organisation TWO, organisation THREE's current owners also had to secure the continuation of their core systems resource to ensure there was to be no impact upon the business. However, the situations were very different where organisation THREEs system was their own, organisation TWOs was the property of their previous owners requiring a contractual agreement of supply.

The final theme, considers rationalisation and collaboration implications for the Information Systems function. All three organisations, over the time since acquisition, have demonstrated greater levels of collaboration. For example, organisation ONE has developed a number of external systems partnerships and organisation TWO is just in the early stages of developing similar systems relationships. However, organisation THREE demonstrates the greatest level of collaboration. This is because it is the only organisation, taking part, which is owned by a same-industry organisation that has developed a large group of similar

organisations over time who now co-create, co-develop and co-manufacture a broad range of components and products (Suchman 2002; Levina and Vaast 2005; Vieru and Rivard 2014).

In all three cases, where to date they are displaying improving industry Key Performance Indicators (KPIs), it has been identified that the need to share systems, share information and develop increasing levels of traditional boundary spanning Information systems is essential for acquisitions to be successful (Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995; Levina and Vaast 2005; Lindgren, Andersson and Henfridsson 2008; Yao, Dresner and Palmer 2009).

Such collaborations, however, can lead to systems duplication or systems redundancy, where a functioning system can no longer be used due to the need to use a common system to aid collaboration between different organisations/partners, creating global Information Systems standards whilst maintaining systems and information security (Sumi and Tsuruoka 2002; Yoo, Lyytinen and Heo 2007; Vieru and Rivard 2015). As has been the case for organisation THREE, demonstrating again the complex nature of the Information Systems development environment.

7.3 Application of Haspeslagh and Jamieson's Model (1990)

The analysis of the primary data collected was structured by the application of the model created by Haspeslagh and Jamieson (1990), as set out in chapter two. Based upon the concepts of organisational autonomy and strategic independence, four possible strategies were identified; holding, preservation, symbiosis and absorption, which have since been applied, in research, to the Information Systems functions or development environments, although not in the automotive sector (Wijnhoven et al 2006; Baker and Neiderman 2014).

The following four subsections provide a cross-case discussion set out in accordance with the Haspeslagh and Jamieson (1990) model. Firstly, the holding strategy followed by preservation, symbiosis and finally absorption. The application of this model further demonstrates its continued ability to structure analysis and

discussion corroborating its continued validity as a means to understanding the three different situations being studied. However, as a result of conducting this research at point much later than studies to date, this research has identified that, over time, the strategic positions of the model are not static and organisations will experience different quadrants of the model. As a result of this study, Haspeslagh and Jamieson's model have now been successfully applied to a new industrial setting and at a much later point in time post-acquisition than previous studies demonstrating its continued utility and ability to structure and understand acquisition situations.

The analysis demonstrates that over time, for all three organisations, there is, a convergence upon the symbiosis strategic position, however, at a more detailed level of analysis organisations can experience other positions proving the Information Systems development environment is more complex than previous studies have identified. Factors contributing to this phenomenon include changing leadership approaches, additional acquisitions and divestment and reacquisition, demonstrating a contribution to both literature and practice (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

7.3.1 The Holding Strategy

Despite this strategy being mostly ignored by Baker and Neiderman (2014), this discussion demonstrates how the organisations have experiences periods of time consistent with the holding strategy. However, each case is different and the criteria stated for the strategy to be appropriate have not been met (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006).

The discussion identifies how decisions and actions consistent with other strategies are made in order to achieve a holding strategy as well as identifying the ownership characteristics and industry specific reasons driving such behaviour. The discussion also challenges the labelling of early periods of time, post-acquisition which would

be categorised as holding, by previous research, due to the long lead times and production life cycles of this industry.

The holding strategy is characterised by both strategic independence and the need for organisational autonomy being low. This suggests the acquiring organisation has little or no intention of integrating functional capabilities or seeking to create greater levels of value via anything other than adding financial resources, risk taking on the acquired organisations behalf and possibly providing some low level general management capability (Haspeslagh and Jamieson 1990).

For this to be the right approach, the two organisations (acquired and acquiring) will be in the same industry and be of similar strength such that organisational or functional autonomy isn't necessary. As such where both factors are low neither the acquired or acquiring organisation needs to retain their Information Systems. And options such as third party support such as outsourcing may be the better strategy.

Firstly, considering the relationship of organisation ONE and their owners, which is the most complex ownership profile of the organisations taking part in this study, the majority of which (95%) are not members of the same industry who possess no systems capabilities relevant to the organisation. Only a 5% stake has been acquired by a same industry organisation but of vast scale compared to the organisation, this will be returned to later in this chapter. As such, the holding strategy is deemed to be inappropriate however, the analysis has identified the Information Systems development relationship with the majority of the owners is *'hands-off'* in nature. This is an example of the holding position where other than providing the organisation with financial resources there is no further systems relationship (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006).

In addition, the majority owner's decision that the organisation should acquire the provider of their central Information Systems platform, could be considered to be an example of the preservation strategy. However, the decision was based upon the mitigation of risk which is again a feature of the holding strategy and was a situation born-out historical decisions made by previous owners where again the

strategy and relationship had been that of the holding position, thus demonstrating the greater complexity of the Information Systems strategy than the model suggests (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; McManus and Wood-Harper 2007). This decision also reduced the level of socio-technical implications, including uncertainty, change management and organisational disruption whilst supporting the organisation to develop their own systems environment which will better support the organisations and product specific unique characteristics (Haspeslagh and Jamieson 1990; Wijnhoven 2006; Baxter and Sommerville 2011; Baker and Neiderman 2014; Koukoulaki 2014; Daft 2016).

In the development of their own systems environment, organisation ONE has chosen to work with a number of partners, to share or acquire systems resources, who are from the related areas of the same industry. This approach, in particular where systems are acquired, is a further characteristic of the holding strategy as it is a form of outsourcing (Shearer et al 2004; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Gonzalez, Gasco and Llopis 2016; Ko, Lee, Keil and Xia 2019). Although the analysis highlighted that some outsource relationships do place significant constraints upon the organisation for compliance and security more characteristic of other strategies, for example symbiosis and absorption. However, the level of constraint is considered to be acceptable and the organisation has the choice not to go ahead with systems relationships if they do not wish to (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

Organisation TWO, like organisation ONE, experiences an '*at arms-length*' relationship with its current owners despite being more closely aligned in business terms as befits the holding strategy. Although organisation TWO is the largest taking part in this study, there is still a disparity between their size and strength to that of their owner (Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995; Wijnhoven et al 2006).

Once again, As identified by Haspeslagh and Jamieson (1990) Wijnhoven et al (2006) Baker and Neiderman (2014) the acquiring organisation has little or no intention of integrating functional capabilities or seeking to create greater levels of

value via anything other than adding financial resources, potentially risk taking on the acquired organisations behalf and possibly providing some low level general management capability.

Although, more closely related to their owners' business, like organisation ONE's position, the owners are still not in a position to provide a suitable Information Systems solution and has also sort to mitigate risk, characteristic of the holding strategy, by insisting upon an agreement with the previous owners to secure the continuation of systems provision under contract. Again, like organisation ONE, this is suggesting the strategy is more preservation than holding, but again it is a decision which reduces the level of socio-technical implications, as cited previously whilst again supporting the organisation to develop their own systems environment (Haspeslagh and Jamieson 1990; Wijnhoven 2006; Baxter and Sommerville 2011; Baker and Neiderman 2014; Koukoulaki 2014; Daft 2016).

However, a critical difference for organisation TWO is they were, and still are, functioning with systems which they were forced to adopt by their previous owners which were ill-fitting as they were originally developed for application in mass manufacture with lower levels of product complexity (Kappos and Rivard 2008; Peng et al 2010; Meissonier et al 2013). In contrast, organisation ONE's legacy systems had been developed, over time, to suit their specific needs.

Looking to the future development of organisation TWO's Information Systems environment, again they have followed the strategy of organisation ONE seeking their own relationships to purchase, partner and co-develop (where appropriate) with external organisations (Shearer et al 2004; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Gonzalez, Gasco and Llopis 2016; Ko, Lee, Keil and Xia 2019). Although this will redefine their Information Systems strategy (to be returned to later in this chapter), this decision is characteristic of the holding strategy and the position of organisation ONE demonstrating the relationship between the acquiring and acquired organisation and the resulting expectations are more complicated than previously claimed.

Already critical key factors are being identified and confirmed across the cases. The nature and background of the acquiring organisation is instrumental. The differences between the ownership profiles of organisations ONE and TWO are very different with organisation TWO having a single owner which is much closer in terms of being in the same industry. However, this is somewhat inconsequential as they do not possess an Information Systems resource relevant to the organisation's requirements.

The historical context is again a key finding. For both organisations ONE and TWO the actions and decisions made by previous owners has a direct impact upon current and future systems developments and decisions. Despite systems cultural friction Kappos and Rivard (2008) Meissonier et al (2013) it is necessary for organisation TWO to maintain their current systems provision to avoid value destruction (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). The situation is avoidable due to the systems size and embeddedness (McKiernan's and Merali 1995). As such independence and autonomy would be expected to be low, characteristic of the holding strategy, (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

A further key factor identified in this research is that of organisational size. Organisation TWO is much larger than organisation ONE and so requires a larger systems resource. This research identifies that such a scale of systems resource can only be provided by what the industry consider to be a 'large' same industry organisation, in organisation TWO's case their previous large-scale same industry owners, demonstrating the relationship and reliance expectation although this comes with undesirable socio-technical implications (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Daft 2016).

In contrast to organisations ONE and TWO, Organisation THREE is the only organisation which has taken part in this research who is completely owned by a same industry organisation, however, it is one of much greater scale and its level of product complexity is completely different (Kappos and Rivard 2008; Peng et al 2010; Meissonier et al 2013).

Unlike organisation TWO, when in the similar circumstances under their previous ownership, who experienced complete absorption when acquired, organisation THREE did not (Haspeslagh and Jamieson 1990). The evidence demonstrates the benefit of conducting this research many years post-acquisition, a further key contribution of this research, Shearer et al (2004) Wijnhoven et al (2006) Mehta and Hirschheim (2007) Alaranta and Henningsson (2008) Mouawad (2011) as it has identified that organisation THREE as undergone different periods of leadership manifesting itself in different relationship characteristics relating to alternating Information Systems strategies.

In the early years, post-acquisition, the analysis shows that the organisation did go through a period characteristic of the holding strategy despite the two organisations being of differing sizes and production volumes (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006). However, in the case of organisation THREE, the early period, post-acquisition, characterising the holding strategy was merely a symptom of the longer-term strategy of absorption where the new owners sort to leverage their systems resources (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

The reason behind this unintended subterfuge is industry specific and determined by long production development life-cycles which are key points in time where large-scale Information Systems change (absorption) takes place and can be considered periods in which the acquiring organisation is taking time to get to know their new acquisition (Cross and Parker 2004).

The relationship between the product development life-cycle and Information Systems change is a further critical key finding of this research and demonstrates both the complexity of the Information Systems development environment and, again, the benefit of undertaking the research much later post-acquisition (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

The discussion demonstrates that all three organisations have experiences periods of the holding strategy, although in each case the criteria for the strategy to be

appropriate have not been met. For instance in each case the acquired organisations are not of a similar size or capability and nor did they possess comparable Information Systems resources.

In the case of organisations ONE and TWO decisions and actions consistent with the preservation position were made in order to achieve a holding strategy and this was drive by the lack of ability of the new owners to provide a systems solution themselves. In the case of organisation ONE preserving existing systems avoided socio-technical change, however, in the case of organisation TWO the preservation of existing systems, previously absorbed, maintained their socio-technical problems of operating with systems designed for a totally different environment.

The early years post-acquisition of organisation THREEs systems relationship appeared characteristic of the holding strategy, with little change, although in reality this was not the case. Driven by the long lead times of new product innovation in this industry this was merely a period of inaction prior to periods of absorption.

7.3.2 The Preservation Strategy

As well as the organisations experiencing the holding strategy, this section demonstrates how all three organisations have also experience the strategy of preservation and so confirms the complexity of the post-acquisition Information systems development environment.

As stated, Haspeslagh and Jamieson (1990) Baker and Neiderman (2014) the preservation strategy is best suited to acquisition situations where the acquiring organisation are exploring new domains (diversification) and so do not possess a suitable systems resource which is the case of two participating organisations. However, this is not the case of the third organisation where preservation may be considered to be a by-product of other strategies including absorption over time.

Where the need for organisational autonomy is high and the need for strategic independence is low a preservation strategy is recommended (Haspeslagh and

Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). This approach can be referred to as *'arms-length'* beyond specific areas of interdependencies, however the total absence of leadership would be an error and the acquired organisation/function needs to have its purpose reconfirmed from time-to-time.

Whereas Haspeslagh and Jemison (1990) cite the need to set out clearly the strategy to be taken at the beginning of the acquisition, they state that the preservation strategy may be discovered at a later stage referred to as 'the independence paradox'. This can be due to later realisation of the need for greater autonomy in order not to destroy value and can often be the case where the acquiring organisation has paid a premium to purchase the acquired organisation, as was the case of organisation THREE (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). Preservation of systems resources is clearly demonstrated in the cases of organisations ONE and TWO where the new owners are not from the same industry however, this was not a late realisation but a condition of acquisition from the outset. In the case of organisation THREE, initially the preservation of existing systems was only a temporary strategy until it was appropriate for them to absorb as many central systems as possible in line with the new product development and manufacture life-cycle of this industry.

Subsequently, the acquiring organisation seeks to preserve value and often this is achieved with financial funding and the provision of expertise in order to 'nurture' the function and its Information Systems capabilities which can be critical to the continued operation of the business and later the preservation approach can become a two-way creator of value as at a later stage capabilities and learning can be passed back to the acquiring organisations from the acquired or can be used with future acquisitions (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). As this research study has focussed upon the core Information Systems in all three case organisations, these are indeed critical to the continued functioning of the operations.

The preservation approach is well suited to the situation where the acquirer is seeking to explore new domains (diversification) where they may lack core competences and knowledge in that systems arena and the strategy should not be

rushed as the organisations or functions need to learn more about each other (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). Organisation ONE's current majority owners (95%) are certainly exploring new domains and organisation TWO's are extending their domain which, Haspeslagh and Jamieson (1990) Baker and Neiderman (2014) suggest preservation to be the most suitable strategy as a conglomeration model of Information Systems development. In contrast, organisation THREE's owners, who are from the same industry, should be pursuing a leveraged systems strategy, Baker and Neiderman (2014) although, their commonality should provide them with the opportunity to become a two-way creator of value as at a later stage, characteristic of the preservation strategy, as learning can be shared with both their owners and other subsidiaries which form their business group (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

The size of the organisation under acquisition is again identified as an important factor. On two occasions, organisation ONE has been taken over but without instance to adopt parental systems. In the first instance, the owners did possess an Information Systems resource, but of vastly different scale and one that had been developed for production of products with different levels of complexities (Soh and Kien Sia 2004; Meissonier et al 2013). By not insisting upon systems adoption they also avoided the socio-technical complications of implementing ill-fitting systems and cultural change (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Koukoulaki 2014; Daft 2016).

On the second occasion, organisation ONEs new (and current) majority owners deemed their Information Systems provision to be of such high risk, as they had no alternative systems solution to offer, and to reduce the risk made preservation of the core systems a mandatory precondition of purchase (Da Silva 2014; Tanriverdi and Uysal 2015). The position of their minority, same industry, owners is different and will be returned to later in this chapter where the preservation strategy enables autonomy to be maintained with the exception of specific areas of interdependencies where systems sharing/adoption is essential and accepted (Haspeslagh and Jamieson 1990; Levina and Vaast 2005; Wijnhoven et al 2006;

Walczuch et al 2007; Kwanhk and Lee 2008; Lindgren, Andersson and Henfridsson 2008; Strong and Volkoff 2010).

Organisation ONE, being afforded high levels of autonomy to develop its own systems strategic future with external partners, is characteristic of the *'hands-off'* nature of the preservation strategy (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). This is also a positive approach given the majority of the new owners possess no Information Systems resources or relevant core competencies (Haspeslagh and Jamieson 1990: Wijnhoven 2006; Baker and Neiderman 2014). Again, this autonomy is also characteristic of the holding strategy demonstrating that the post-acquisition Information Systems development environment is more complex than the model would suggest, despite it being a useful tool to aid analysis and make sense, or otherwise, of different approaches and strategies.

The position of organisation TWO is more complex than it first seems and its situation demonstrates the importance of historical decision making and the benefit of conducting this study at a much later stage post-acquisition than previous research (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

Although the current systems strategy identifies as preservation, where the current owners have, under contract, secured the continued provision of the organisations Information Systems resources from their previous owners as part of the purchase agreement, these resources were originally implemented as a strategy of absorption to facilitate the previous owners to leverage their systems capability (Haspeslagh and Jamieson 1990: Wijnhoven 2006; Baker and Neiderman 2014).

As such, the current strategy of preservation is not enabling the organisation to avoid the negative socio-technical implications associated with systems change, as the organisation has to continue to operate with systems which were originally designed for a different operating environment and culture. This environment was much larger in scale and lower in production complexity and so the cross-cultural friction remains. This is in contrast to the continuing systems environment of organisation ONE where their systems had been developed over time for their

specific needs, (Wenger et al 2002; Soh and Kien Sia 2004; Alaranta and Parvinen 2005; Kappos and Rivard 2005; Buchanan and Huczynski 2008; Klaus and Blanton 2010; Baxter and Sommerville 2011; Meissonier et al 2013; Koukoulaki 2014; Daft 2016).

Although, in common with the strategy of organisation ONE, organisation TWO's owners have empowered them by the provision of resources to enable them to make their own systems decisions for future development. Like organisation ONE, they are pursuing these systems decisions with external providers, again a characteristic of the *'arms-length'* nature of the preservation strategy of an acquiring organisation exploring new domains (Baker and Neiderman 2014).

As stated in the previous section, In contrast to organisations ONE and TWO, organisation THREE's acquirers are from the same industry and who's systems were developed for an operating environment of much greater scale and its level of production complexity is completely different (Kappos and Rivard 2008; Peng et al 2010; Meissonier et al 2013).

When discussing the holding position previously, it was noted that the conducting of this research many years post-acquisition, identified the relationship between changing approaches of centralised leadership and the nature of the post-acquisition Information Systems strategy. It has also been identified that the long lead times for new product development is also a key driving force behind new Information Systems change and implementation.

Although periods of the post-acquisition relationship cannot be completely define as adhering to the characteristics of the preservation strategy, there is still evidence demonstrating pockets of preservation behaviour. For example, more recently the owners have allowed the organisation the autonomy to develop some of their own Information Systems solutions with external partners (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). This practice combined with other strategies means the owners are managing an Information Systems strategy which is both leveraging and reinventing their model (Baker and Neiderman 2014). Again, this is evidence demonstrating the key contribution of this

research taking place much later post-acquisition (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

Confirming the complexity of the post-acquisition Information systems development environment, all three organisations have experienced the preservation of systems to different extents.

In agreement with the theory, Haspeslagh and Jamieson (1990) the experiencing of this strategy (organisations ONE and TWO) has been brought about by acquirers who are exploring new domains and do not possess a suitable systems resource themselves (Baker and Neiderman 2014). In contrast, organisation THREE is being slowly absorbed where tranches of centralised systems are taken on board timed to coincide with the manufacture of new products and other systems not related to those business activities are allowed to remain. In addition, more recently organisation THREE has been found to be a two-way creator of system value, characteristic of the preservation strategy.

7.3.3 The Absorption Strategy

Once again, demonstrating the both the value of conducting this research much later than previous studies post-acquisition, Shearer et al (2004) Wijnhoven et al (2006) Mehta and Hirschheim (2007) Alaranta and Henningsson (2008) Mouawad (2011) and the greater complexity of post-acquisition Information Systems development environment, this section sets out how all three organisations have experienced the absorption strategy, but in different ways, to different extents and at different point in time post-acquisition.

Where the need for organisational autonomy is still low but the need for strategic independence is high, Haspeslagh and Jemison (1990) suggest the absorption approach to integration of the organisations or functional areas to create value. Where the level of critical systems is low and compatibility is high, this could be seen as an opportunity to take the political initiative and allow the acquired Information Systems function to select (retain) some systems. This may apply to

most forms of integration approaches but could be most significant where absorption is being pursued.

Over a period of time the acquired function would become consolidated into the acquiring organisations functions and thus, again over time will lose its own identity as its' previously held boundaries are dissolved, known as the 'acceptance paradox'. Where the two organisations or functional areas are large this will take longer to achieve, suggesting that where there is a disparity in the size of the two organisation's functions, this could be achieved more quickly. This approach, according to Haspeslagh and Jamieson (1990), is more typical where the acquiring organisations intentions are to enhance their domain strength and value can be created through economies of scale and combined functional operations.

Although the risk of excessive determinism, the philosophical belief that all events are determined completely by previously existing causes, is considered to be less important as there is a more limited need to retain anything from the Information Systems function of the acquired organisation, there still needs to be a considerate approach where significant numbers of personnel are to be retained.

Haspeslagh and Jemison (1990) claim strong management is best suited for the absorption approach suggesting an autocratic manner, that is the leadership team of the acquiring organisation or functions create conditions where the members of the acquired function can transfer their affiliation or leave, which may not be helpful in some situations.

Where this is the case a speedier integration is viewed as preferable as opposed to waiting so that predetermined and expected benefits can be gained as soon as possible. The need to wait for information is low and the costs associated with delay will be high.

In the case of same industry acquisitions it is naïve to assume the acquiring organisation will possess an Information Systems capability which they to be adopted. For example, in their previous acquisition, organisation ONE was acquired by a same industry organisation, but an examination of the difficulties involved in requiring them to adopt systems of vastly different size and inappropriate

complexity was deemed unsuitable and so a strategy of preservation was followed (Haspeslagh and Jamieson 1990; Soh and Kien Sia 2004; Wijnhoven et al 2006; Meissonier et al 2013; Baker and Neiderman 2014). By not insisting upon systems adoption they also avoided the socio-technical complications of implementing ill-fitting systems and cultural change (Buchanan and Huczynski 2008; Baxter and Sommerville 2011; Koukoulaki 2014; Daft 2016).

In their latest acquisition, organisation ONE's majority owners possess no such resource creating an environment of flexibility and independence in relation to the system strategy. However, their relationship with their minority owners is very different. Although only owning 5% of organisation ONE there exists a significant transactional relationship requiring the organisation to adopt all supporting core Information Systems, characteristic of the absorption strategy. This strategy can be viewed as a negative approach, stripping an organisation of its culture, ways of working and identity by *'ripping and replacing'* systems and processes Tanriverdi and Uysal (2015 p147) as systems are considered to be social as well as technical entities (Clark, Gioia, Ketchen and Thomas 2010; Baxter and Sommerville 2011; Koukoulaki 2014; Daft 2016). This has not been the viewpoint of the organisation and they consider it essential adoption which is both facilitating and modernising their business.

Currently the adoption facilitates transactions and core production systems remain in place as per the preservation strategy (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006). As such there is a clear strategic division between preservation of core systems and absorption of transactional systems and the minority owners are not currently seeking to leverage their systems in pursuit of greater efficiency or cost savings (Haspeslagh and Jamieson 1990; Cross and Parker 2004; Levina and Vaast 2005; Wijnhoven 2006; Lyytinen and Heo 2007; Baker and Neiderman 2014).

It is also accepted that should their relationship and business activities with their minority owners grow, for example joint ventures into new product development, then further systems adoption will be necessary (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014; Da Silva 2014; Tanriverdi and Uysal 2015). This would

be on a project-by-project basis which would slow the process of absorption and changes to operating processes meaning the socio-technical implications and change management can be accommodated more positively (Baxter and Sommerville 2011; Koukoulaki 2014; Daft 2016). However, given the vast different in production scale between the organisation and its minority owner, there is likely to be socio-technical implications as the systems to be adopted have been developed for a different scale of production, differing level of product complexity and different operating culture (Soh and Kien Sia 2004; Buchanan and Huczynski 2008; Clark, Gioia, Ketchen and Thomas 2010; Baxter and Sommerville 2011; Koukoulaki 2014; Meissonier et al 2013; Daft 2016).

Organisation TWO, as discussed briefly in the previous section, under is current owners clearly identifies with the preservation strategy as its Information Systems resource has been preserved by the owners via contractual agreements at the time of purchase with their previous owners because of their inability to provide an alternative systems resource (McKiernan's and Merali 1995; Carillo 1998; Alaranta and Henningsson 2008; Li et al 2008).

However, the systems resource in place was previously gained via the mandatory absorption by the previous owners as they sort to leverage their systems resource without consideration of the organisations preparedness to make such large scale systems change, even though their previous systems solution was deemed inadequate given the new owners business growth intentions (Besson and Rowe 2001; Newman and Westrup 2005; McAfee 2007; Klaus and Blanton 2010; Peng et al 2010; Strong and Volkoff 2010; Meissonier et al 2013; Hogan and Coote 2014 Chakrvorty, Dulaney and Franza 2016; Hughes, Dwivedi, Rana and Simintiras 2016).

In addition, the absorption strategy of Information Systems also supported potential collaboration with the owners and other business units as the common systems platform shared by all group members avoided many boundary spanning implications, such as systems compatibility problems and security concerns (Sumi and Tsuruoka 2002; Yoo, Lyytinen and Heo 2007; Andersson and Henfridsson 2008; Sarrazin and West 2011, Tanriverdi and Uysal 2011; Vieru and Rivard 2015).

In contrast, however, it is also suggested that the intention, or a consequence of the absorption strategy is its ability to increase the parent organisations ability to maintain control of information which can be monitored for reporting purposes as opposed to the system promoting open information sharing (Davenport 2000; Konradin 2009; Soja 2010; Marques and Guerrini 2012; Da Silva 2014). This autocratic style is characteristic of the absorption strategy where the parent organisation is attempting to strengthen their domain position (Haspeslagh and Jamieson 1990; Baker and Neiderman 2014). Although the controlling of information, as opposed to making it freely available, is contrary to the strategy if value it to be created (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006).

The absorption of Information Systems created a great deal of socio-technical problems requiring the organisation to change operating processes and function with ill-fitting systems as they had been designed for a larger scale production environment, with different levels of product complexity and a culturally different environment complexities (Soh and Kien Sia 2004; Buchanan and Huczynski 2008; Kappos and Rivard 2008; Klaus and Blanton 2010; Baxter and Sommerville 2011; Meissonier et al 2013; Koukoulaki 2014; Daft 2016).

By preserving this systems resource, the socio-technical problems are maintained and this again demonstrates the importance of acquisition history and undertaking research at a longer period post-acquisition than current research in order to better comprehend both current and future implications for decision making regarding the development of the systems environment post-acquisition (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

In common with organisation TWO, organisation THREE has also been acquired by owners who have high expectations of production growth and at the time of acquisition possessed poor quality systems resources. As such they were well aware that high levels of Information Systems change, via absorption would be necessary but unlike organisation TWO their systems capability was not immediately absorbed into that of their new owners (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

Organisation THREE is the only organisation in this study who is currently owned by a single large-scale parent organisation from the same industry, which possessed industry relevant Information Systems resources. This situation is identical to the previous position of organisation TWO, however, not requiring the organisation to absorb all of their systems from the outset suggests the owners took time to get to know their acquisition before setting out their systems strategy (Sumi and Tsuruoka 2002; Cross and Parker 2004; Alaranta and Parvinen 2005; Yoo, Lyytinen and Heo 2007; Vieru and Rivard 2015). In addition, contrary to theory, the disparity between the size of the organisation and its parent has not led them to accelerate the process of absorption (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

Again this evidence demonstrates the benefit of conducting this research many years post-acquisition, Shearer et al (2004) Wijnhoven et al (2006) Mehta and Hirschheim (2007) Alaranta and Henningsson (2008) Mouawad (2011) as it has identified that this organisation also went through different periods of leadership manifesting itself in different relationship characteristics. In agreement with the literature, examples of absorption align with periods of more autocratic leadership and low levels of participation in systems decision making (Haspeslagh and Jamieson 1990; Wijnhoven 2006; McManus and Wood-Harper 2007; Clark, Gioia, Ketchen and Thomas 2010; Peng et al 2010).

The owners of organisation THREE have built a large group of same industry subsidiaries where they have previously followed a systems absorption strategy, in almost all cases, consolidating and leveraging their systems model (Haspeslagh and Jamieson 1990; Wijnhoven 2006; Baker and Neiderman 2014). However, because of the differences between the two organisations, such as culture, production scales and product complexities, to pursue the same full scale absorption strategy, in this case, would have led to value destruction because of ill-fitting systems and the associated socio-technical implication of changing operating processes to suit systems developed for application in an alternative environment (King et al 2004; Soh and Kien Sia 2004; Hayes et al 2005; Buchanan and Huczynski 2008; Rai and

Tang 2010; Baxter and Sommerville 2011; Baxter and Sommerville 2011; Meissonier et al 2013; Koukoulaki 2014; Tanriverdi and Uysal 2015; Daft 2016).

The parent organisation has a culture of control, demonstrated by their requirement to take on board common systems in order to share information so as to be able to compare the output of different plants around the world, again symptomatic of the absorption strategy Haspeslagh and Jamieson (1990), Clark, Gioia, Ketchen and Thomas (2010) which manifest in two ways, big data collection, via the sharing of information facilitated by the absorption of centralised systems and visual knowledge of production at all point in time creating; cross-cultural friction Meissonier (2013) poor Information System fit Walczuch et al (2007) Kwahk and Lee (2008) Strong and Volkoff (2010), excessive systems complexity Levina and Vaast (2005) Andersson and Henfridsson (2008) and the need for the organisation to have to adapt to different and unwelcome process changes associated with socio-technical change (Baxter and Sommerville 2011; Daft 2016).

Organisation THREE's owners more autocratic approach expects the adoption of all centralised core systems where possible, characteristic of the absorption strategy, as they seek to leverage their systems model, consolidating their systems resources. As was the experience of organisation TWO when under the same form of ownership previously. (Haspeslagh and Jamieson 1990; Wignhoven et al 2006; Baker and Neiderman 2014).

In addition, the expectation of systems absorption, regardless of socio-technical implications, may be the most suitable approach to support the growing levels of collaboration with the other subsidiaries which make up the group. For these projects to be successful, each subsidiary requires modern, robust and common Information Systems to facilitate reporting, information sharing and problem solving. Such projects and collaborations have taken place and the volume of which is growing year-on-year. Inter-group collaboration was also a potential benefit for organisation TWO until its most recent divestment (Sumi and Tsuruoka 2002; Yoo, Lyytinen and Heo 2007; Andersson and Henfridsson 2008; Sarrazin and West 2011, Tanriverdi and Uysal 2011; Vieru and Rivard 2015). Again a key benefit of conducting this research many years post-acquisition (Shearer et al 2004;

Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

Organisation THREE, has the closest systems relationship with its owners of all three organisations taking part in this research. A further key finding of this work is the identification of the link between systems development/absorption and the cyclical nature of new product development, hence period of absorption being intermittent due to the long lead times of the industry (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

A further key finding of the research is the identification of the link between the perception of the Information System function by the acquiring organisation and their subsequent strategic approach. Where the function is viewed as a cost, as in this case, the owners seek to leverage as much of their resource as possible through an absorption strategy, and this can be without regard for socio-technical factors. As such the organisation has been made to function with some systems developed for an alternative environment, as is organisation TWO (Haspeslagh and Jamieson 1990; Buchanan and Huczynski 2008; Kappos and Rivard 2008; Klaus and Blanton 2010; Strong and Volkoff 2010; Baxter and Sommerville 2011; Meissonier et al 2013; Baker and Neiderman 2014).

All three organisations have, again, experienced periods of time, post-acquisition, characterised by the absorption strategy. Whereas organisation ONE has experienced absorption by choice as it develops its transactional relationship with its minority owners in more recent times, organisation TWO had been absorbed into their previous owners systems at the point of acquisition. The actions of their current owners, would be best described as preservation, but in reality of the organisation is a maintenance of absorption. Organisation THREE also experiences absorption, but in a different and more incremental way where there have been successive intermittent periods of systems absorption coinciding with new product development.

7.3.4 The Symbiosis Strategy

Haspeslagh and Jamieson (1990) state that the preservation strategy can be a precursor of the symbiosis strategy. However, this research claims all strategies, holding, preservation and absorption can create a long-term strategy of symbiosis.

Throughout the discussion, and as a result of undertaking the research much later post-acquisition, it has been possible to identify periods characterising all three other strategies. As a result, and potentially by default their overall positions can be considered to be symbiosis proving again, the complex nature of the post-acquisition development environment.

Where both the need for strategic independence and organisational autonomy are high there exists the most complicated of integration situations as a substantial level of strategic capability with regards to Information Systems needs to be transferred, whilst maintaining autonomy is essential to avoid value destruction (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). For example where specific Information Systems are both highly critical and compatible between the two organisations they should seek to demonstrate and evaluate their potential for creating value together in the future state.

In this situation the acquiring and acquired organisations, or their related Information Systems functions agree to coexist in the early stages post-acquisition and then gradually develop the environment of interdependency. Here the model highlights the systems developing relationship between the acquiring and acquired organisations and, as such, this rules out the symbiosis strategy for organisations ONE and TWO as they lack a suitable systems resource from which to develop interdependencies (Haspeslagh and Jamieson 1990). This is with the exception of organisation TWO's minority owner. However, as will be demonstrated, the symbiosis strategy can be developed, not with the owners of an acquired organisation but independently via the creation of external partnerships. This is demonstrated by the approach of organisation ONE.

Based upon this characteristic of symbiosis, only organisation THREE is in a position where they can truly develop a symbiotic strategy and, in common with the theory

they have commenced their integration process as preservation rather than symbiosis (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). This process, in agreement with the theory was gradual although this was not, as suggested, due to each organisation gaining knowledge of the others capabilities and strengths. This process was more acquirer driven and when organisation THREE was expected to absorb systems the event was more revolutionary than evolutionary in contrast to the theory where, especially when involving functions which are subject to technical development and change, such as the Information Systems function. Again this facet of the Information Systems development environment adds further credence for a research study which takes place longer after the acquisition or merger occurrence and gains an understanding of how Information Systems absorption/change is driven by industry specific requirements of new product development and manufacture.

This approach is more appropriate where organisations are seeking domain extension, that is, the organisations and their functions which they are seeking to acquire are providing more scope within their domain and where the acquired organisation's functions, for example the Information Systems function require a resource capability more specialised or more suitable to their current levels of operation. There is again agreement with the theoretical position of Haspeslagh and Jamieson (1990) as the acquirers of organisation THREE where, at a business level seeking domain extension, Baker and Neiderman (2014) and organisation THREE did require an improved level of Information Systems resources.

Referred to as the 'action paradox' Haspeslagh and Jamieson (1990) suggest that both organisations and or functions pay serious attention to interdependencies and autonomy and that as strategic capabilities in areas such as Information Systems are known to exist, making decisions as to what requires to be maintained or transferred and how success should be measured will take longer to decide. As such any predefined vision of the future integrated state could be very different in reality.

Organisation ONE demonstrates a complex mix of Information Systems strategies with examples of preservation for core operating systems, absorption of large-scale

transactional systems from minority owners and new systems development/adoption from selected external parties. This is a key characteristic of the symbiosis strategy where strategic independence is contradictorily high as a significant level of systems need to be transferred whilst maintaining autonomy (Haspeslagh and Jamieson 1990; Levina and Vaast 2005; Wijnhoven et al 2006; Lindgren, Andersson and Henfridsson 2008).

The positive acceptance of externally developed systems, whether they have been previously developed for application in an alternative environment or not King et al (2004) Soh and Kien Sia (2004) Hayes et al (2005) Meissonier et al (2013), is again a characteristic of the symbiosis strategy, opposed to that of absorption, as the organisation maintains autonomy and independence and can implement only desired systems at their time of choosing or to facilitate desired business activities, for example the adoption of transactional systems, even though this brought about socio-technical change to methods of operation (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Buchanan and Huczynski 2008; Baxter and Sommerville 2011). This adoption also underpins the need of large-scale organisational systems support for small-scale producers, especially, in cases such as here, where the existing systems resources are of poor quality and lack scalability.

The research of organisation ONE identifies both the complex and dynamic nature of the Information Systems development environment, driven by their unique ownership profile, as their systems relationships expand beyond the traditional boundaries of the parent organisation. This is via consolidation, referring to the preservation of core systems, combination of the superior systems creating an environment of co-existence where some of the Information Systems are left in tack with no attempt to combine (Baker and Neiderman 2014). This strategy demonstrated that organisation ONE is reinventing its systems model and, in this case, although it can be claimed that any adoption or shared development of systems is creating a leveraged advantage for some stakeholders, the gains are not significant because of the organisation's small scale (Baker and Neiderman 2014). These key findings are again a justification of undertaking the research at a later

stage post-acquisition (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008 Mouawad 2011).

The varied systems approaches of organisation ONE is symptomatic of symbiosis. However, depending upon the level of adoption of systems, from either owners or other external providers/partners, some areas of their systems landscape could, in reality, be strategically absorption (Haspeslagh and Jamieson 1990, Wijnhoven et al 2006; Baker and Neiderman 2014). This is a realistic scenario if, as is the owners business strategy, the organisation is to grow significantly or should the minority same industry owner take a greater shareholding and they seek to leverage their systems advantage regardless of an socio-technical implications (Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995; Suchman 2002; Levina and Vaast 2005; Wijnhoven et al 2006; Clark et al 2010; Baxter and Sommerville 2011; Baker and Neiderman 2014; Vieru and Rivard 2014; Daft 2016).

In addition, the symbiotic approach avoids a number of potential difficulties given the majority owners are not from the same industry. Acquisitions, by organisations who are not from the same industry have not enjoyed the same longevity as the purpose of acquisition is more related to adding value which can be realised through divestment as a later stage. The more symbiotic and less absorption Information Systems strategy makes the organisation more saleable in this industry and avoids value destruction (King et al 2004; Alaranta and Parvinen 2005; Rai and Tang 2010; Baker and Neiderman 2014). Also the system-by-system symbiotic adoption/development is also advantageous, for this industry, where security of data is a major concern and there is a need for greater sharing of large levels of information (Haspeslagh and Jamieson 1990; McKiernan's and Merali 1995; Davenport 2000; Wijnhoven 2006; Soja 2010; Da Silva et al 2014).

There are similarities between organisations ONE and TWO. The analysis of the data has identified the necessity of considering an organisation's Information Systems history and how this has been affected by previous acquisitions. Whereas organisation ONE had previously been taken over and maintained both high levels of strategic independence and autonomy representing a mostly symbiotic relationship, organisation TWO had previously been absorbed and made to take on

board systems which were not designed for its specific needs which they have been subsequently required to preserve (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). Only more recently, post-acquisition, has organisation TWO being provided with the freedom to develop areas of their Information Systems development environment for themselves in a symbiotic manner where new systems will exist alongside the absorbed core operating systems which are to remain in place. Again this has only been uncovered by undertaking this research at a much later point post-acquisition (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008 Mouawad 2011).

Organisation TWO, in common with organisation ONE, has demonstrated the will to change strategy. In this case the move is from the holding position to that of symbiosis where, again, existing legacy systems will remain and coexist alongside new systems. (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006). It can be argued that their position since the last acquisition is more one of preservation, although preservation of core systems was a decision taken by their new owners at the time of acquisition. Since then the move to develop new systems and partnership relations with external providers resembles that of organisation ONE. However, where organisation ONE pursues this approach to use their resources efficiently, organisation TWO's drive is to move away from the systems of their previous owner to which they had been absorbed, that is a move from a leveraged systems model to a reinvented model (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

This industry will develop through collaboration and sharing information, as will be emphasised in the discussion of organisation THREE in relation to this strategy. As such it is essential that systems relationships develop with external providers and systems partners in much the same was as organisation ONE in the symbiotic way (Sumi and Tsuruoka 2002; Yoo, Lyytinen and Heo 2007; Sarrazin and West 2011, Tanriverdi and Uysal 2011; Vieru and Rivard 2015).

Organisation THREE initially, experienced a period of time where the Information Systems strategy could be described as either holding or preservation (Haspeslagh

and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). Again the benefit if undertaking this research much later, post-acquisition, than previous studies is that it has enabled the observation of evolving and changing Information Systems strategies and their links with leadership and new product development (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008 Mouawad 2011).

Throughout the time post-acquisition, organisation THREE has experienced periods of absorption, unlike organisations ONE and TWO but which is characteristic of being owned by a large same industry organisation, again unlike the current positions of organisations ONE and TWO (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). In contrast there have also been periods of greater flexibility in terms of their own systems decision making more associated with the positions of symbiosis where independence is greater (Haspeslagh and Jamieson 1990).

Again this demonstrates a mix approach toward Information Systems strategies in this industry and has identified a number of driving forces behind this. In this case leadership and new product development. This mixed approach is characteristic of the symbiosis strategy demonstrating a reinvention of the systems model as newly procured systems are either combined or allowed to co-exist with those of the owner's systems resource (Wijnhoven et al 2006; Baker and Neiderman 2014). However, in contrast to organisations ONE and TWO, organisation THREE's owners prefer the adoption or absorption of existing systems where possible creating a different strategic balance where absorption is greater than the level of systems preservation and external development in order to leverage their systems resources regardless of the socio-technical implications (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Clark et al 2010; Baxter and Sommerville 2011; Baker and Neiderman 2014; Daft 2016). As a result, the much lower levels of independence and autonomy means that the symbiosis strategy is evident but the level to which is small in favour of that of absorption although this balance has changed, in both directions, over time (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

Currently organisation THREE is enjoying a period where symbiosis is possibly at its greatest as they are allowed to acquire or develop external systems outside of centralised systems solutions, however, this is only where a business case can be made. They are also allowed to make some changes to core systems, in order to tailor them to suit their individual needs and manufacturing complexities where possible (McKiernan and Merali 1995; Alaranta and Parvinen 2005). This flexibility is yielding additional benefits as other business units within the group see the advantages of some of organisation THREE's adaptions and so, request the same functionality. This two-way systems development and learning is a key characteristic of both the symbiosis strategy and of a mature acquisition, again made possible by the time which has elapsed since acquisition (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008 Mouawad 2011).

This situation demonstrates the owners are engaging with a multi-layered and complex Information Systems strategy. Firstly, there is evidence of adoption, where subsidiaries take on board all centralised systems consolidating and leveraging their systems capabilities. Secondly, symbiosis, where subsidiaries are allowed some flexibility to tailor existing systems to accommodate their individualities or alternatively approach external provides for their own solutions demonstrating a reinvention of the system model through combination and co-existence. Thirdly, the preservation strategy, where the latest acquisition is, at present, allowed to maintain their Information Systems solution (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). This co-existence is evidence of a conglomeration strategy, Baker and Neiderman (2014) although, over time, it may be transition from preservation to symbiosis (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006).

Having now identified that all three organisations, have not only experienced periods of time and actions associated with the strategies of holding, preservation and absorption, they have all encountered the symbiosis strategy as a result of undertaking this research much later post-acquisition.

Organisation ONE is predominantly an example of the preservation strategy, although its continued development of future systems with external partners means they have new and existing systems existing side-by-side. However, this symbiosis is creating low-level interdependencies which are external, as opposed to the more traditional internal interdependencies with their owners, with the exception of the relationship with their minority owner where the symbiosis would be considered to be internal (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). Concurring with the position set out, Haspeslagh and Jamieson (1990) preservation has given way to symbiosis, but not for the reasons originally set out.

Organisation TWO has a similar experience to organisation ONE. Although their core Information System resource was previously absorbed, it has, under their latest acquisition, been preserved. In common with organisation ONE, their new and future systems developments are again by choice and with external partners, meaning again new and legacy systems will exist alongside each other characterising symbiosis.

Finally, organisation THREE has the most in-depth systems relationship with its owners due to them being a same industry organisation with a large-scale Information Systems resource, despite the characteristics of that resource being developed for an operating environment and culture very different to that of their acquisition (Buchanan and Huczynski 2008; Kappos and Rivard 2008; Peng et al 2010; Baxter and Neiderman 2011; Meissonier et al 2013; Daft 2016). Many systems still exist in the organisation almost two decades on characteristic of the preservation strategy. However, the intermittent periods of large-scale systems absorption from the parent organisation come to symbolise the symbiosis strategy (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014). This position is further endorsed with the more recent ability to be able to develop some level of Information Systems externally with chosen providers afforded to the organisation by its owners. This means preserved systems, absorbed systems and new systems all coexist along-side each other constituting the strategy of symbiosis, proving again, the complex nature of the post-acquisition

development environment (Haspeslagh and Jamieson 1990; Wijnhoven et al 2006; Baker and Neiderman 2014).

7.4   Contribution

Having completed the discussion of the conceptual framework themes from the analysis of data collected in conjunction with the review of literature and discussed the primary findings via the theoretical model of Haspeslagh and Jamieson (1990), this section now sets out the contribution of this thesis in line with the research aims provided in chapter one.

To further inform practicing management in light of the increasing acquisition activity

Set against the context of increasing global merger and acquisition activity, the contribution of this work is both valid and timely (Raice 2015; Thompson Reuters 2017). Increasingly business, organisational and political uncertainty is driving activity and it is set to continue to be a major part of business renewal, growth and survival (Kanter et al 2007; Busquets 2015; Toppenberg et al 2015; Lohrke, Frownfelter-Lohrke and Ketchen 2016).

As such, this research does not provide a roadmap or recipe approach (Alaranta and Mathiassen (2014), its importance lies in its ability to further enhance the manager's ability to successfully achieve Information Systems harmony by identifying key factors of both merger and acquisition Information Systems failure and success (King et al 2004; Sarrazin and West 2011; Alaranta and Mathiassen 2014).

In addition, this thesis has identified a number of factors which are critical to the understanding of the systems relationship between acquiring and acquired organisations. These include; whether or not the acquiring organisation is from the same industry, whether they possess an Information Systems solution (regardless of suitability), the size disparity of the two operations, differences in volume of manufacture and the characteristics of any systems to be considered for sharing.

For example, the culture of the original environment the systems were developed to support and the levels of product complexity, as these factors have been found to result in the majority of socio-technical complications. In addition, understanding the historical context of the organisation's Information Systems resource and the factors which led to previous decision making and actions of past owners are critical factors.

To add to the acquisition body of literature

This thesis, based upon the claim of Henningsson, Yetton and Wynne's (2018), provides new Information Systems research in relation to merger and acquisition activity and adds to the published literature, which they claim is still very sparse and fragmented across both authors and theories, which is not helping to promote management practice (McKiernan and Merali 1995; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Kappos and Rivard 2008; Henningsson and Carlsson 2011; Alaranta and Mathiassen 2014). This work contributes valuable insight to three organisations from a sector not previously explored. In addition, referring to the claim that there are few consistently used frameworks. This research has applied Haspeslagh and Jamieson's (1990) model for analytical support following its application previously by Wijnhoven et al (2006) and Baker and Neiderman (2014). As such this study contributes to the body of writing and provides a context as yet not explored, whilst also demonstrating the continued validity and utility of Haspeslagh and Jamieson's model in its application to a new sector and a point much later, post-acquisition, than studies to date.

Take an alternative methodological approach to enhance the qualitative contribution

This research, is the first to take a neo-empiricist theoretical perspective which adds a further dynamic in order to identify answers to the 'how' and 'why' questions (explanatory reasons) often posed but until recently have not been addressed by research for use by practicing professionals (Henningsson, Yetton and Wynne 2018). Where previous research has sort to categorise forms of such relationships, i.e. the 'what' this research enables a greater understanding of the 'how and why'

issues which go on to substantial the ongoing relationships between acquiring and acquired organisations.

This approach is more revolutionary for this topic area, and is transferable, providing a unique position within the body of existing literature (Hirschheim 1989; Bhatt et al 2005; Kappos and Rivard 2008; Alaranta and Mathiassen 2014). The neo-empiricist approach, is indeed a move away from positivism, dominant in this area of research, but is still closely associated to enable previous and future researchers to engage with the work.

Even with the neo-empiricist approach, the conceptual framework developed from previous literature (chapter Two) is still endorsed, further supporting the validity of earlier research.

Not to refute existing research but to enhance research

The application of this alternative approach also means that a further aim of this work was not to refute the work and findings of other researchers, rather to add to the body of knowledge already in existence whilst providing professional practicing mangers with practical learning and knowledge which will enhance their organisational decision making in respect of the implications of acquisition activities upon the Information Systems development environment. The outcome of this research has been to create a conceptual framework of six themes which are conversant with those identified from literature (chapter Two). As such previous research is endorsed as still being of relevance and the identification of many new categories both enhances knowledge and supports managers to better understand the dynamic nature of Information Systems development environments whether this be pre-acquisition planning, during acquisition or at various point post-acquisition.

To undertake research in a new environment at different stages post-acquisition, testing previously identified forms of Information Systems relationships

This research has also been the first to focus specifically upon the UK prestige automotive manufacturing sector and has been the first to be conducted at

significantly longer periods of time post-acquisition as required by a series of authors (Shearer et al 2004; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Alaranta and Henningsson 2008; Mouawad 2011).

This has enabled a new understanding of the post-acquisition Information Systems development environment where organisations experience not one, but different strategies at different stages. This work has identified that all three participating organisations have experiences periods characterising all four strategies as set out by Haspeslagh and Jamieson (1990) holding, preservation, absorption and symbiosis, confirming, for the first time that systems environments are indeed static or dynamic over time post-acquisition.

7.5   Personal and Final Thoughts

Undertaking the DBA has been a privilege, although a very harsh privilege at many points in time. It has been an indulgence which has presented me with the opportunity to create an original piece of work by going outside of academia and work closely with a number of organisations who I admire and who many other people would jump at the opportunity to work with.

The process has enabled me to immerse myself in the realm of Information Systems which was the focus of both my second undergraduate qualification and first masters' degree as well as my early career. Returning to this arena has provided the opportunity to test my thoughts and assumptions from those days and observe how the function/s has moved forward or not.

In conjunction with the literature cited in this work my view has been that systems have a social dimension and are not wholly technical in terms of application and acceptance, on the part of the user, can indeed be down to individual interpretation and this research has enabled the exploration of those interpretations. This is a situation rarely investigated and testing this through the research has gone on to prove acceptance of systems is still very much an important factor as they underpin most if not all organisational activities to the point where it can be claimed they can change organisational culture.

This understanding will further inform my teaching of this subject area and pedagogy and emphasis that Information Systems should not be delivered as a topic in isolation but should always be considered in the context of organisational life. This also supports the University theme of applied education and learning creating better informed managers for the future.

Looking back at my early application to join the DBA at Hallam really confirms this was the right programme for me to pursue a doctoral qualification. My narrative was too broad and completely lacked focus, dare I say it was weak on reflection, however the early stages provided the structure and direction I required to resolve this situation and by the DB2 stage I had my title.

From the point where the empirical work could be undertaken I am staggered how much the undertaking (research design) changed from my original ideas and this was because of the value of taking the time and a series of visits and pilots to each of the participating organisations. Getting to know them before conducting the primary research was critical and if not conducted would have seen me returning to square one as my early assumptions of what would be possible or appropriate to get the best material were incorrect!

In the end, and not really by sheer design, I have ended up with three organisations which have provided three very different Information Systems development environments and context situations which has significantly added to the rich quality of what I set out to achieve but not to the point of them being considered to be either extreme or deviant cases (Bazeley 2013).

Reflecting upon my research gathering approach, the choice of performing semi-structured interviews was certainly the right method. The effects of Information Systems is hard to view and it was the thoughts and opinions of others supported by their knowledge and experiences which was of value to this work. The approach taken provided the flexibility to allowed participants too really open up and the breadth and depth of examples they were able to provide was illuminating. For once I did very little talking other than to prompt and confirm. Providing the

prompt questions in advance of the interviews was also beneficial as it provided time and opportunity for interviewees to prepare and process their evidence.

The flexibility this approach enabled is essential for research with a social dimension. Despite many seeking a systematic and logical approach to gathering research, real research material is often messy and fundamentally non-linear (Marshall and Rossman 2006). Much like the development of the Information Systems environments I have explored. In addition keeping some aspects of the process flexible, or as some may say unstructured, meant that I have certainly been able to gather some very unexpected data such as stories, events, projects and circumstances and I have been able to adjust the interviews in accordance with '*what came up*' (Bazeley 2013).

This method did yield an incredible level of material for transcription which from the outset I always intended to complete then code and analyse personally without the aid of IT tools (Nvivo). My thoughts were that although potentially laborious this endeavour would help me to really get to know and understand my research – and it did! As Bazeley (2013 p15) states *"Referring to the reading and reflecting process gave me a holistic perspective of not only each case interview but also of the case environment as a whole"* and *"the personal/manual approach enabled me to become closer and more confident with the research material gathered whereas the use of software can create distance between data and researcher"* (Bazeley 2013 p18).

Bringing this work to its conclusion has been a difficult process but another learning opportunity. It has led to periods of not writing but of intense thinking, designing and redesigning, developing and redeveloping before finally coming together. Although frustrating at times when you typically measure output by quantity of words these periods have been, on reflection, possibly the most valuable.

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Appendix ONE   Questions for DBA Interviews

The following questions have been developed from the research aims (chapter One) and review of existing literature (chapter Two). They, in line with the semi-structured interview technique, are not to be followed in a linear manner, but are provided in order to prompt the interviews and progress them in whichever direction the responses of the interviewees proceeds.

Would you like to describe to me, in your own words, the Information Systems development environment of your organisation?

Do you feel senior managers, either here or in your parent organisation, understand the important role of Information Systems in Mergers and Acquisitions in terms of adding value?

The majority of senior management do not understanding the important role played by Information Systems in achieving acquisition success (Chan and Wang 2014).

In your opinion is the Information Systems function viewed as a purely, or mostly technical activity?

Are the effects of systems changes upon people considered to be important?

The role of IS is purely technical and human factors are ignored, other functions are viewed as priorities; finance, human resources, operations and marketing whereas IS is viewed to have low priority (Carrillo 1998; Tanriverdi and Uysal 2011; Chang and Wang 2014)

Research areas of both IS projects and planning brought about by merger or acquisition is at best sparse and focuses upon technical issues and IT governance structure (Henningsson and Carlsson 2011)

Based upon your experience, would you consider the Information Systems projects here to complex and Interdependent with the parent company?

- **If so, how is this acknowledged and accounted for?**
- **If not, what do you feel are the consequences?**

There is a lack of consideration of the IS capabilities, human and technical, of organisations prior to merger. Greater consideration can lead to easier integration and more successful gains post-merger, particularly where there is to be a high level of interdependency (Tanriverdi and Uysal 2011) Still today given the complex nature of IS projects in conjunction with the post-acquisition phase, much about their relationships and consequences remains unclear and a more holistic approach to research is required (Brunetto 2005; Alaranta and Henningsson 2008)

Are you aware of any Information Systems considerations pre-acquisition?

If so what were they?

Too often IS is only considered post-acquisition, leaving management with a seemingly impossible task (Shearer et al 2004; Mehta and Hirschheim 2007 and Alaranta and Henningsson 2008)

(McKiernan and Merali 1995; Alaranta and Parvinen 2005; Brunetto 2005)

The contradiction of rationality and the promotion of individuality of organisational IS leads to better results due the reduced level of change management and human resistance. This can depend upon the level of complementary factors between the acquiring and acquired organisation and the levels of boundary spanning (Livina and Vasst 2005; Chang and Wang 2014)

How would you describe the nature of the Information Systems development and management/implementation relationship between yourselves and the owners?

The keys to acquisition success lies in their approach to IS projects and the relationship they develop with their subsidiaries and relevant IS stakeholders (Wang et al 2005; Hayes et al 2005; Li et al 2008)

45% of expected business and operational gains, the major reason for acquisitions are dependent upon successful IS development projects (Rogers

2005; Wijnhoven et al 2006; Mehta and Hirschheim 2007; Sarrazin and West 2011)

To what extent does/did your parent organisation learn about your organisation and make consideration for it in Information Systems development and implementation?

> *Empirical research of mergers and acquisitions and Information Systems developments are varied and it is important to identify the context and assumptions made by the organisations, particularly those of the dominant organisation. Often the acquiring organisation will expect the acquired organisation to implement their systems and adapt accordingly to the working processes and culture (Alaranta and Parvinen 2005). However, case studies have shown that the contexts can be more complex where mergers and acquisitions can be a trigger for the development of 'all new' IS developments. Interestingly there is evidence that where one partner organisation has the capability to develop and adapt systems in-house, this can be viewed with suspicion in terms of dominance and participation.*

Do you feel the parent organisation makes assumptions about your needs and wants?

Has there been a need to rationalise duplication as part of the Information Systems development and implementation programme?

If so, how do you feel this has been managed?

What has been the approach taken?

Which party has driven the decision making?

> *Where mergers and acquisitions take place between organisations in the same or similar industries, there will be a level of IS duplication, possibly in both technical and administrative tasks which will, sooner or later, lead to rationalisation (McKiernan and Merali 1995). As such there will be decisions to be made as to the level of rationalisation and the amount of autonomy*

afforded by the parent organisation, this in turn will underpin the future IS direction within the acquired organisation (Refer to above model).

To what extent are Information Systems developments and needs complementary between the two organisations?

The contradiction of rationality and the promotion of individuality of organisational IS leads to better results due the reduced level of change management and human resistance. This can depend upon the level of complementary factors between the acquiring and acquired organisation and the levels of boundary spanning (Livina and Vasst 2005; Chang and Wang 2014)

Do the Information Systems span many organisational boundaries?

If so then what has been the impact of this?

As previous question, also Nieldman and Baker (2009) and (2014) also build upon the notion of the nature of the organisational relationships and the disruption caused by acquisition and IS implementation which can lead to resistance and poor performance which again lacks research.

Appendix TWO   Codes identified for Organisation ONE

1   Information Systems underpin New Product Development (NPD)

2   Information Systems impact upon business

3   External supplier pressure to adopt Information Systems

4   Reliance on external big business for Information Systems resources

5   Technology gap between small and larger manufacturers

6   Poor quality Information Systems pre-acquisition

7   External organisations provide Information Systems architecture

8   Acquisition of Information Systems

9   Compliance

10   Compliance of intellectual property

11   Enhanced Information Systems capacity

12   Provision of technical support

13   Gain up-to-date Information Systems

14   Became competitive in the marketplace

15   External pressure for Information Systems adoption

16   Greater relationships means greater need for Information Systems adoption

17   Closer relationships means greater adoption of Information Systems

18   Joint business activities means greater Information Systems compliance

19   Large players set the Information Systems agenda

20   Small organisations have to follow

21   External pressure in business relationships to adopt Information Systems

22   More business partnerships will happen

23   Complex Information Systems

24   Information Systems will become more complex

25   Sophisticated products means more complex Information Systems

26   More systems means more sharing

27   Greater adoption

28	Complex relationship because of Information Systems security
29	Intellectual property
30	Larger organisations dominate the Information Systems relationship
31	Core systems are shared
32	Large companies have very good Information Systems
33	Small organisations acknowledge large companies Systems strength
34	Smaller organisations possess weaker Information Systems resources
35	Small organisations acknowledge their weak Information Systems position
36	Weaker technical position
37	Market driving for more sophisticated products
38	Greater Information Systems acceptance to survive
39	Need to adopt to survive
40	Greater security concerns
41	More security as systems become more complex
42	Increasing levels of Information Systems standardisation
43	Need to adopt
44	Need for greater information sharing
45	Information transfer essential for business transactions
46	Global level of information sharing
47	Large organisations dominate the Information Systems development
48	Large organisations dominate in Information Systems relationships
49	Large Information Systems don't always fit
50	Historically large players have a different Information Systems strategy
51	Information Systems strategy
52	Information Systems strategic fit
53	Information Systems strategies have to vary (SBUs)
54	One size Information Systems does not fit all businesses
55	Information Systems strategy depends upon product integration levels
56	Large owners want an all or nothing relationship

57	Level of ownership determines levels of Information Systems adoption
58	Business partners share only essential Information Systems
59	Large organisations lack understanding of small organisations systems needs
60	Niche businesses need different Information Systems
61	Product complexity variations require different Information Systems
62	Small businesses rely on large organisations for systems investment
63	Small organisations acceptance of need for Information Systems change
64	Small manufacturers can't survive without large scale systems investment
65	Larger owners want your data shared
66	Information control
67	Data sharing to make global output comparisons
68	Culture of large scale control
69	Collaborative commerce increasing Information Systems
70	Increasing globalisation of business means more Information Systems
71	Sometimes it's only about Information Systems access
72	Access not full integration
73	Industry sensitive about Information Systems resources
74	Security is paramount of Information Systems and data
75	Large organisations can't change Information Systems quickly
76	Too much Information Systems change can kill businesses
77	Information Systems change can be dictated by cycle of NPD
78	Can't do wholesale change post-acquisition
79	Acceptancy of Information Systems continuity
80	Acquisition is not driven by Information Systems opportunities to add value
81	Information Systems are small concern when purchasing
82	Business development drives acquisitions
83	NDP is key performance indicator
84	KPI's impact Information Systems investment/adoption
85	Incremental change is more acceptable

86   Information Systems under constant review

87   Information Systems are process driven

88   Changing processes means Information Systems change

89   Information Systems adoption to increase efficiency

90   Information Systems adoption to decrease NPD time

91   Need to adopt to keep up

92   Increasing Information Systems global standards

93   Innovative Information Systems strategy

94   Different strategies where parents have little to offer

95   Information Systems need to be scalable

96   Parents want growth

97   Information Systems constantly under review by parents

98   Information Systems investment is process driven

99   Owners not in the industry have nothing to offer

100   Different sector owners give more flexibility

101   Partnerships are more flexible

102   Partnerships increase boundary spanning

103   Boundary spanning security concerns

104   Boundary spanning integration

105   Outsourcing model Information Systems compliance concerns

106   Sharing Information Systems

107   Flexibility

108   Complex products benefit from information sharing

109   Information Systems enable development in context

110   Collaborative commerce

111   Outsourcing

112   Communications

113   Single systems enable better working

114   Real-time development

115	Collaborative commerce requires enhanced Information Systems
116	Better Information Systems creates competitive advantage
117	Business partner contracts includes Information Systems requirements
118	Business contacts hold Information Systems implications
119	Cultural parent relationship very different
120	Adopt Information Systems to work with industry giants
121	Transactional Information Systems relationship with some owners
122	No special dispensations
123	Information Systems do simple high volumes
124	Information Systems do complex low volumes
125	Reciprocal agreements
126	Information Systems manage volume or complexity
127	Information Systems needs are NPD driven
128	Legislation change means Information Systems change
129	Volume changes means Information Systems change
130	Organisational size determines Information Systems adoption
131	Information Systems partnerships increase speed and flexibility
132	Systems partners can vary resources quickly with little additional costs
133	Partnerships enable you to try new things
134	In-house Information Systems
135	In-house resources created own risk
136	External provision of Information Systems reduces risk
137	Small scale Information Systems providers are high risk
138	Business continuity
139	Strong Information Systems resources make you investor attractive
140	Large scale Information Systems are inflexible
141	Large owners may leave small scale operations alone
142	Legacy systems
143	Programming language differences

144	Loss of IT expertise/knowledge
145	Long lead-times of products results in old systems maintenance
146	NPD is Information Systems change opportunity
147	Some components are decades old - Information Systems implications
148	Smaller organisations enable greater diversity of Information Systems work
149	Small organisations different culture
150	Smaller Information Systems department's greater development
151	See bigger/full picture
152	Greater work diversification
153	Holistic view of Information Systems implications
154	Larger organisations more specialist/focussed roles
155	Larger organisations means Information Systems repetitive/boring
156	Small ISDE you understand the processes better
157	Small ISDE more end-to-end solutions
158	Better business fitting Information Systems solutions
159	Unique owner relationship
160	Unique ownership profile
161	Freedom to develop Information Systems
162	No expectations of adoption
163	Transactional Information Systems relations only
164	Core system are embedded
165	Core systems hard to change
166	Rivalry between design and technical people
167	Business objectives drive Information Systems development
168	Small organisations get more out of Information Systems than large ones
169	Legacy Information Systems have to remain
170	Legacy Information Systems hard to replace
171	Information Systems change disruption
172	Keep up-to-date

173	Different Information Systems strategies depending upon circumstances
174	Share data with parents
175	Data sharing for transactional reasons
176	Information Systems strategy driven by parent's ambitions
177	Information Systems designed for their environments
178	Scale of Information Systems is critical to getting it right
179	Parents make Information Systems decisions
180	Parents decide upon partners
181	Volume dictates leadership style
182	Increased component sharing means greater Information Systems adoption
183	Greater collaboration
184	Collaboration means increase Information Systems sharing
185	Increasing industry standard Information Systems
186	Integration of only essential Information Systems
187	Transactions drive Information Systems adoption
188	Technical partners drive Information Systems adoption
189	Parents protect their data
190	Sharing data
191	Sharing data for compliance/comparison
192	Sharing data security concerns
193	Large Information Systems are not agile
194	Large volume operations Systems are about maintaining consistency
195	Large scale Information Systems lack relevance to small scale environment
196	Component sharing means Information Systems adoption
197	Smaller Information Systems are less formal
198	Small Information Systems enable freedom to be creative
199	Creativity is essential in niche production
200	Different sector owners are more hands off
201	Greater freedom and autonomy

202	Short-term ownership reflects lack of direct Information Systems investment
203	Short-term ownership boosts partnership Information Systems strategy
204	Different sector owners have no relevant Information Systems to adopt
205	Small organisations like simple systems
206	Small organisations like out-of-the-box Information Systems
207	Out-of-the-box Information Systems are fast and efficient
208	Small systems departments don't have resources to configure new systems
209	Large systems resources lead to overcomplicated Information Systems
210	Complex Information Systems means greater risk and reliance
211	Complicated Information Systems requires greater maintenance
212	Self-contained Information Systems are agile
213	Software provides don't understand our business needs
214	Software provides don't understand the systems needs of small businesses
201	Operate different Information Systems strategies
216	New model of Information Systems operations
217	Parent Information Systems updates have to be accepted
218	Updates adopted may not be relevant
219	Updates may not work with your core systems
220	Information Systems autonomy provides security
221	Information Systems autonomy provides control and reduced maintenance
222	Greater Information Systems adoption to enable greater collaboration
223	Collaborate more widely
224	Information Systems integration means risk
225	Updates lack documentation hence risk
226	Information sharing to create economies of scale
227	Information sharing for collaboration
228	Collaboration can be temporary
229	Temporary relationship can provide greater control
230	Collaboration model requires Information Systems resources

231	Collaborations can increase information and systems security risks
232	Collaboration of Information Systems reduces costs
233	Collaboration increase speed of Information Systems development/usage
234	Modern Information Systems models suit smaller firms
235	Sharing Information Systems can limit access
236	Software developers can dictate terms of usage
237	Information Systems partnership is so flexible
238	Complex Information Systems take a lot of understanding and learning
239	Information Systems partners will not invest time to learn complex systems
240	Complex in-house Information Systems limit your attractiveness
241	Complex in-house large scale systems create dependencies post-divestment
242	Large scale operation fail to manage large Information Systems themselves
243	Dependency creates risk
244	Large Information Systems become over complicated
245	Large scale operation possess large Information Systems
246	Information Systems providers don't understand the sector IS requirements
247	Large scale Information Systems are very formal
248	Large Information Systems are about consistency
249	Large Information Systems provide process structuring
250	Large scale Information Systems lack relevance where flexibility is required
251	Flexibility is essential for niche manufacturers
252	Small organisations need third party Information Systems support
253	Small organisations lack developer resources
254	Parent Information Systems are mostly too heavy
255	Breaking away from parent Information Systems can be long and expensive
256	Research and development requires boundary spanning Systems
257	Today many systems necessary to develop and build new products
258	Out-of-the-box is the way for small organisations
259	Out-of-the-box Information Systems are 80/20 fit

260   Industrial espionage

261   Volume produces can invest heavily in Information Systems

262   Volume producers have economies of scale to invest in large scale systems

263   Global Information Systems reduces Information Systems advantages

264   Partnership model is alternative to parental absorption

265   Partnership model enables access to specialised Information Systems

266   Partners will have different objectives so systems sharing will be specific

267   Large systems environments deskill Information Systems people

268   Parental black-box Information Systems can't be tailored/adapted to suit

269   Knowledge transfer to maintain parental Information Systems

270   Absorption means compromise

271   Large scale Information Systems functions create zombies out of experts

272   Small Information Systems departments are motivating

273   Owners invest in products not Information Systems

274   Information Systems investment is to create new products

275   Large scale Information Systems operations lose creativity/become sterile

Appendix THREE   Categories for Organisation ONE

The following 36 categories have been formed from the 275 codes identified from the three interviews conducted with organisation ONE. Each code has been allocated to only one category.

Category 1 – Large Organisation Dominance
3   External supplier pressure to adopt Information Systems
15   External pressure for Information Systems adoption
19   Large players set the Information Systems agenda
20   Small organisations have to follow
30   Larger organisations dominate the Information Systems relationship
32   Large companies have very good Information Systems
33   Small organisations acknowledge large companies Systems strength
42   Increasing levels of Information Systems standardisation
47   Large organisations dominate the Information Systems development
48   Large organisations dominate in Information Systems relationships
56   Large owners want an all or nothing relationship
122   No special dispensations
130   Organisational size determines Information Systems adoption
261   Volume produces can invest heavily in Information Systems
262   Volume producers have economies of scale to invest in large scale Information Systems

Category 2 – Intellectual Property
29   Intellectual property
166   Rivalry between design and technical people

Category 3 – Systems Sharing
12   Provision of technical support
26   More systems means more sharing
31   Core systems are shared
184   Collaboration means increase Information Systems sharing
235   Sharing Information Systems can limit access
239   Systems partners will not invest time to learn complex systems
266   Partners will have different objectives so IS sharing will be specific

Category 4 – Information Systems Compliance

9	Compliance
10	Compliance of intellectual property
18	Joint business activities means greater Information Systems compliance
105	Outsourcing model Information Systems compliance concerns
191	Sharing data for compliance/comparison

Category 5 – Information Systems Strategy Variation

51	Information Systems strategy
52	Information Systems strategic fit
53	Information Systems strategies have to vary (SBUs)
71	Sometimes it's only about Information Systems access
72	Access not full integration
76	Too much Information Systems change can kill businesses
78	Can't do wholesale change post-acquisition
141	Large owners may leave small scale operations alone
173	Different Information Systems strategies depending upon circumstances
201	Greater freedom and autonomy

Category 6 – Cultural Control

68	Culture of large scale control
97	Information Systems constantly under review by parents
119	Cultural parent relationship very different
148	Smaller organisations enable greater diversity of systems work
149	Small organisations different culture
151	See bigger/full picture

Category 7 – External Information Systems Providers

131	Information Systems partnerships increase speed and flexibility
213	Software provides don't understand our business needs
214	Software provides don't understand the IS needs of small businesses
236	Software developers can dictate terms of usage
246	Information Systems providers don't understand the sector IS requirements

Category 8 – Global Information Systems Standards	
92	Increasing Information Systems global standards
120	Adopt Information Systems to work with industry giants
185	Increasing industry standard Information Systems
263	Global Information Systems reduces Information Systems advantages

Category 9 – Boundary Spanning Integration	
102	Partnerships increase boundary spanning
103	Boundary spanning security concerns
104	Boundary spanning integration
256	Research and development requires boundary spanning systems

Category 10 – Small Organisation Benefits	
150	Smaller Information Systems department's greater development
152	Greater work diversification
153	Holistic view of Information Systems implications
157	Small ISDE more end-to-end solutions
161	Freedom to develop Information Systems
168	Small organisations get more out of Information Systems than large ones

Category 11 – Core/Legacy Systems	
139	Strong Information Systems resources make you investor attractive
164	Core system are embedded
169	Legacy Information Systems have to remain
170	Legacy Information Systems hard to replace

Category 12 – Large Scale In-House Information Systems	
134	In-house Information Systems
135	In-house resources created own risk
140	Large scale Information Systems are inflexible
144	Loss of IT expertise/knowledge
154	Larger organisations more specialist/focussed roles
155	Larger organisations means Information Systems repetitive/boring
177	Information Systems designed for their environments
181	Volume dictates leadership style
193	Large Information Systems are not agile
194	Large volume operations systems about maintaining consistency
209	Large IS resources lead to overcomplicated Information Systems
210	Complex Information Systems means greater risk and reliance
211	Complicated Information Systems requires greater maintenance

238	Complex Information Systems take a lot of understanding and learning
241	Complex in-house large scale ISs create dependencies post-divestment
242	Large scale operation fail to manage large systems themselves
248	Large Information Systems are about consistency
249	Large Information Systems provide process structuring
250	Large scale systems lack relevance where flexibility is required
255	Breaking away from parent systems can be long and expensive
267	Large systems environments deskill Information Systems people
271	Large scale Information Systems functions create zombies out of experts
275	Large scale Information Systems operations lose creativity/become sterile

Category 13 – Industry and Non-Industry Owners

93	Innovative Information Systems strategy
94	Different strategies where parents have little to offer
99	Owners not in the industry have nothing to offer
100	Different sector owners give more flexibility
159	Unique owner relationship
160	Unique ownership profile
162	No expectations of adoption
200	Different sector owners are more hands off
204	Different sector owners have no relevant Information Systems to adopt
240	Complex in-house Information Systems limit your attractiveness

Category 14 – Information System Change

85	Incremental change is more acceptable
86	Information Systems under constant review
165	Core systems hard to change
171	Information Systems change disruption

Category 15 – Information Systems Strategic Drivers

| 50 | Historically large players have a different Information Systems strategy |
| 55 | Information Systems strategy depends upon product integration levels |

Category 16 – External Pressure

37	Market driving for more sophisticated products
70	Increasing globalisation of business means more Information Systems
116	Better Information Systems creates competitive advantage
128	Legislation change means Information Systems change

Category 17 – Parent Organisation Aims

80	Acquisition is not driven by systems opportunities to add value
81	Information Systems are small concern when purchasing
82	Business development drives acquisitions
84	KPI's impact Information Systems investment/adoption
96	Parents want growth
129	Volume changes means Information Systems change
167	Business objectives drive Information Systems development
176	Information Systems strategy driven by parent's ambitions
179	Parents make Information Systems decisions
180	Parents decide upon partners
202	Short-term ownership reflects lack of direct systems investment
273	Owners invest in products not Information Systems

Category 18 – Poor Information Systems Fit

49	Large Information Systems don't always fit
123	Information Systems do simple high volume
126	Information Systems manage volume or complexity
195	Large scale Information Systems lack relevance to small scale environment
245	Large scale operation possess large Information Systems
247	Large scale Information Systems are very formal
268	Parental black-box Information Systems can't be tailored/adapted to suit

Category 19 – Large Organisations Lack Flexibility

75	Large organisations can't change Information Systems quickly
79	Acceptancy of Information Systems continuity

Category 20 – Increasing Information Systems Complexity

23	Complex Information Systems
24	Information Systems will become more complex
225	Updates lack documentation hence risk

Category 21 – Business Partner Information Sharing

58	Business partners share only essential Information Systems
66	Information control

Category 22 – Changing Business Processes

45	Information transfer essential for business transactions
87	Information Systems are process driven
88	Changing processes means Information Systems change
98	Information Systems investment is process driven
121	Transactional Information Systems relationship with some owners
163	Transactional Information Systems relations only
186	Integration of only essential Information Systems
187	Transactions drive Information Systems adoption
196	Component sharing means Information Systems adoption

Category 23 – Information Sharing

44	Need for greater information sharing
46	Global level of information sharing
65	Larger owners want your data shared
67	Data sharing to make global output comparisons
108	Complex products benefit from information sharing
112	Communications
174	Share data with parents
175	Data sharing for transactional reasons
183	Greater collaboration
190	Sharing data
226	Information sharing to create economies of scale
227	Information sharing for collaboration

Category 24 – Information Systems Security

40	Greater security concerns
41	More security as systems become more complex
74	Security is paramount of Information Systems and data
189	Parents protect their data
192	Sharing data security concerns
220	Information Systems autonomy provides security
260	Industrial espionage

Category 25 – Reliance on Large Organisations

4	Reliance on external big business for Information Systems resources
7	External organisations provide Information Systems architecture
11	Enhanced Information Systems capacity
13	Gain up-to-date Information Systems
253	Small organisations lack developer resources

Category 26 – Small Organisations Buy Rather Than Develop IS

8	Acquisition of Information Systems
136	External provision of Information Systems reduces risk
137	Small scale Information Systems providers are high risk
158	Better business fitting Information Systems solutions
197	Smaller Information Systems are less formal
205	Small organisations like simple systems
206	Small organisations like out-of-the-box Information Systems
207	Out-of-the-box Information Systems are
212	Self-contained Information Systems are agile
221	Systems autonomy provides control and reduced maintenance
258	Out-of-the-box is the way for small organisations
259	Out-of-the-box Information Systems are 80/20 fit

Category 27 – Product Systems Demands

25	Sophisticated products means more complex Information Systems
61	Product complexity variations require different Information Systems
77	Information Systems change can be dictated by cycle of NPD
109	Information Systems enable development in context
145	Long lead-times of products results in old systems maintenance
147	Some components are decades old - Information Systems implications
257	Today many systems necessary to develop and build new products
274	Information Systems investment is to create new products

Category 28 – Relationship and Collaboration Implications

16	Greater relationships means greater need for systems adoption
28	Complex relationship because of Information Systems security
69	Collaborative commerce increasing Information Systems
73	Industry sensitive about Information Systems resources
110	Collaborative commerce
115	Collaborative commerce requires enhanced Information Systems
143	Programming language differences
182	Increased component sharing means greater systems adoption
217	Parent Information Systems updates have to be accepted
218	Updates adopted may not be relevant
219	Updates may not work with your core systems
222	Greater Information Systems adoption to enable greater collaboration
230	Collaboration model requires Information Systems resources
231	Collaborations can increase information and systems security risks
269	Knowledge transfer to maintain parental Information Systems

Category 29 – Partnerships

22	More business partnerships will happen
101	Partnerships are more flexible
106	Sharing Information Systems
107	Flexibility
111	Outsourcing
117	Business partner contracts includes Information Systems requirements
125	Reciprocal agreements
132	IS partnerships can vary resources quickly with little additional costs
133	Partnerships enable you to try new things
188	Technical partners drive Information Systems adoption
201	Operate different Information Systems strategies
203	Short-term ownership boosts partnership IS strategy fast and efficient
216	New model of Information Systems operations
223	Collaborate more widely
228	Collaboration can be temporary
229	Temporary relationship can provide greater control
232	Collaboration of Information Systems reduces costs
233	Collaboration increase speed of Information Systems development/usage
237	Information Systems partnership is so flexible
264	Partnership model is alternative to parental absorption
265	Partnership model enables access to very specialised Information Systems

Category 30 – Small Organisation Information Systems Needs

54	One size Information Systems does not fit all businesses
59	Large organisations lack understanding of small organisations IS needs
60	Niche businesses need different Information Systems
113	Single systems enable better working
124	Information Systems do complex low volumes
156	Small ISDE you understand the processes better
178	Scale of Information Systems is critical to getting it right
198	Small Information Systems enable freedom to be creative
199	Creativity is essential in niche production
234	Modern Information Systems models suit smaller firms
244	Large Information Systems become over complicated
251	Flexibility is essential for niche manufacturers
252	Small organisations need third party Information Systems support
272	Small Information Systems departments are motivating

Category 31 – Technology Gap

5	Technology gap between small and larger manufacturers
91	Need to adopt to keep up
114	Real-time development
172	Keep up-to-date

Category 32 – Information Systems Adoption

17	Closer relationships means greater adoption of Information Systems
21	External pressure in business relationships to adopt Information Systems
27	Greater adoption
57	Level of ownership determines levels of Information Systems adoption
142	Legacy systems
224	Information Systems integration means risk
243	Dependency creates risk
254	Parent Information Systems are mostly too heavy
270	Absorption means compromise

Category 33 – Information Systems Survival and Reliance

38	Greater Information Systems acceptance to survive
39	Need to adopt to survive
43	Need to adopt
62	Small businesses rely on large organisations for systems investment
64	Small manufacturers can't survive without large scale IS investment
208	Small IS departments don't have resources to configure new systems

Category 34 – New Product Development Implications

1	Information Systems underpin New Product Development (NPD)
83	NDP is key performance indicator
90	Information Systems adoption to decrease NPD time
127	Information Systems needs are NPD driven
146	NPD is Information Systems change opportunity

Category 35 – Business Impact

2	Information Systems impact upon business
14	Became competitive in the marketplace
95	Information Systems need to be scalable
118	Business contacts hold Information Systems implications
138	Business continuity

Category 36 – Poor Quality Information Systems	
6	Poor quality Information Systems pre-acquisition
34	Smaller organisations possess weaker Information Systems resources
35	Small organisations acknowledge their weak Information Systems position
36	Weaker technical position
63	Small organisations acceptance of need for Information Systems change
89	Information Systems adoption to increase efficiency