

Graduate School of Business

**A Comparative Study of Benefits Realisation and Change Management
Using Enterprise Resource Planning Technology (SAP) in Utility
Enterprises in Western Australia**

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**This thesis is presented for the Degree of
Doctor of Business Administration
of
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Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

To the best of my knowledge and belief I have acknowledged all previously published ideas and quotes by other authors.

Signature: _____

Date: _____

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This thesis would not have been possible without the willing contributions of all the people at the Water Corporation and West Net Group Infrastructure who participated in the research interviews. My thanks for the generosity of Management in making their organisations available to research and for encouraging the participation of employees in the study.

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Abstract

Enterprise Resource Planning (ERP) systems are highly complex information systems. The implementation of these systems is a difficult and high cost proposition that places tremendous demands on corporate time and resources. Investing in enterprise wide systems is claimed as the key to delivering superior economic performance. Benefits Realisation from such IT implementations is fraught with difficulty. Indeed, the introduction of IT into work organisations is generally marked with persistent reports of underperformance and failure. Executive management tend to view the introduction of IT as an economic imperative while IT specialists tend to view it as a technical imperative. The coalescent nature of these two imperatives is such that the human and organisational aspects of IT related change are frequently marginalised and ignored. Achieving a more integrated approach to the implementation of IT is inordinately difficult since the narrow perspectives usually embraced by the Executive and IT communities do not naturally attend to change in an integrated manner. Literature asserts that many ERP implementations have been classified as failures because they did not achieve predetermined corporate goals.

Systems, Applications, and Productions in Data Processing (SAP) is one of the dominating Enterprise Resource Planning (ERP) software products which is used as an essential part of enterprise wide information systems. While it can significantly contribute towards an organisation's competitiveness by increasing efficiencies across various functional units, it can on the other hand, bring about disasters if implemented incorrectly. Literature presents both implementation successes and failures. It also indicates that many ERP implementations do not attain expected benefits and the main reason for this lack of attainment is people related issues. Literature also highlights the difficulties that can be encountered by organisations that attempt to tailor an Enterprise Resource Planning system to the existing business practices. In particular, the need for careful impact analysis of proposed software modifications and effective change management within the entire project is required.

This study looks at the application of an ERP technology (SAP) in utilities in Western Australia and undertakes a comparative study of Benefit Realisation and Change Management Using Enterprise Resource Planning Technology (SAP) in Utility Enterprises in Western Australia. The findings presented using the grounded principle of emergence covers many issues companies face when implementing SAP-IT and identifies and discusses issues that arise from the complexities associated with people adopting and applying technology within a business context. This is impacted by factors such as leadership, organisational politics and economic implications which have an effect on the respective workforces and such antecedents affect the meaning, structures and functions operating within the interpretative framework.

The study also endeavours to show what benefits can be accrued by implementing and utilising an integrated ERP system. It looks at constructs/themes that have emerged from the grounded research and some of the critical issues that managers must consider before making the final decision to integrate all the business functions within the organisation. These issues

are categorised under fundamental issues, the people, the organisation's change process and the different approaches to implementing an ERP system. In this study, it was established that a well-defined plan is an important step in a successful ERP implementation. Literature asserts that organisations are looking for ways to leverage their ERP investment by introducing new functionality. No matter how many implementations these companies have undertaken the same people issues still provide barriers. Change Management is considered by many companies as crucial to a successful ERP implementation. Yet, according to literature, organisations have not performed Change Management very well.

This thesis builds upon previous work and extends it, analysing existing work and adds to the literature on relevant issues. It identifies a series of interesting and important research issues related to the adoption of ER technology. This is an area that is of importance yet there remains a gap that is under researched in the literature. Key themes which have emerged from the research undertaken are Integrative, Leadership, and Planning. There is a clear link supporting what literature is suggesting in each of the areas. These are identified and discussed in Chapter 6, 7, and 8. The study endeavours to close this gap and so contribute to this area of business. This study reveals that it can be done and that significant benefits can be realised.

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Chapter 1

INTRODUCTION

“I returned, and saw under the sun, that the race is not to the swift, nor the battle to the strong, neither yet bread to the wise, nor yet riches to men of understanding, nor yet favour to men of skill; but time and chance happeneth to them all.” Eccles. 9:11(AKJV)

There have been many claims that investing in Enterprise Resource Planning systems (ERP) is the key to delivering superior economic performance (Clegg et al., 1996; McDonagh, 1999). However, it appears that reaping the benefits of such investment is fraught with difficulty. The percentage of Information Technology (IT) initiatives that deliver business value is as low as 10 per cent (Clegg et al., 1996; Johnson, 1995; Kearney, 1990; McDonagh, 1999). Setting up a Benefits Realisation methodology to obtain benefits from the implementation of Systems, Applications, and Productions in Data Processing IT (SAP) is considered key to facilitating the realising of benefits from this ERP software.

This study examines two SAP implementations for the factors that determine the success or failure. The first is the Water Corporation in Western Australia and second, WestNet Group Infrastructure Western Australia. This is undertaken through a qualitative grounded research approach applied to business settings to determine what benefits are realised and how changes occurred as a consequence of implementing SAP and initiating a ‘benefit realisation program’. Results are then compared and contrasted. The outcome of this study will be an account of the realising of benefits which reflects significant changes occurring as a result of an integrated approach including an examination of the economic, technical, human and organisational facets of change in both the Water Corporation and WestNet Group Infrastructure

The rapid growth of Enterprise Resource Planning IT Systems has created a number of challenges for Australian Managers in both public and private enterprises. (Blick and Quaddus, 2005) Thorpe (1998) argues that business managers require not only an understanding of what is required to enable the business to operate, but to understand the philosophy underlying the application of the technology; and the role that such technology can play as an enabler for change. Implementation of Information Systems has been widely researched over the last two decades. (Cooper and Zmud, 1990; Kwon and Zmud, 1987). In particular, Kwon and Zmud (1987) identify a number of high-level factors such as individual,

structural, technological, task-related and environmental factors that affect the successful implementation of Information Systems. These studies, however, were conducted in the context of traditional functional information systems.

Enterprise Resource Planning (ERP) software, of which SAP is a significant market participant, brings extra complexities into the implementation process and can take from one to five years to implement (Mabert, Soni, and Venkataraman, 2003 a). A typical ERP implementation requires a deep appreciation of both operational and strategic impacts on the organisation, and very often successful implementation results in a cultural shift and realises a range of tangible and intangible benefits. There is however a paucity of studies that investigate Benefit Realisation of Information Systems and Technology.

Therefore this research will carry out a comparative study of technology supported by Benefit Realisation and Change Management Processes involving the Water Corporation and WestNet Group Infrastructure using SAP. This study will investigate what and how benefits have been realised and if any changes occurred as a consequence of Benefits Realisation within both utilities (See Appendix I, p. 184)

Findings will be compared with each other. An exploratory, qualitative study will be undertaken that looks at the realisation of Benefits after the implementation of SAP and what Change Management initiatives occurred as a consequence of realising those Benefits. The approach undertaken by the Water Corporation and WestNet Group Infrastructure will be defined and the results articulated, looking at Benefits Realisation and Change Management.

1.1 Approach and Major Themes

An interview questionnaire containing twelve standard questions was used to obtain information from company nominated candidates in both the Water Corporation (WA) and West Net Group Infrastructure (WA). This is covered in Chapter 5. The researcher requested that candidates were nominated from a representative sample of the respective organisations so that an overview could be presented and for some balance to be brought into the data being proffered. Candidates were met with beforehand and the purpose of the research discussed with them before interview. Those who agreed to be involved in the study were sent a consent form which contained information on ethical conduct of research (See Appendix V p, 188). Candidate interviews were planned for 45 minutes each and they were required to respond to the questions without prior sight of the instrument used. The responses were their own

personal experiences of implementing and using SAP and also Benefits Realisation. Responses were recorded and then transcribed verbatim before the data was analysed using computer based qualitative software namely NVivo. During the analysis carried out using NVivo, ten major themes emerged from the data analysed on the Water Corporation whilst eleven major themes evolved from the data analysed on WestNet Group Infrastructure.

1.2 Research Objectives and Research Questions

The research objectives were to identify:

1. Factors that lead to successful implementation of SAP-IT in the Water Corporation and the realisation of benefits due to implementation of this ERP system.
2. Changes that both the Water Corporation and WestNet Group Infrastructure underwent to successfully implement SAP-IT.

Research questions for this study are as follows:

1. How has the Water Corporation (WA) implemented and utilised SAP-IT and how does it compare with WestNet Group Infrastructure (WA). another utility enterprise in Western Australia?
2. What benefits has the Water Corporation of Western Australia realised in comparison with WestNet Group Infrastructure?
3. Is there a case for organisations to use technology as the main facilitator/catalyst for change?

1.3 Significance of the Study

1.3.1 Significance

Information Technology is capable not only of enabling a new economic infrastructure for industry, but also of transforming society in a range of daily functions (Thorp, 1998). How people work, shop, play and go to school are some examples of the Realisation of Benefits from the application of technology at a personal level.

The expected long-term impact of information technology supported by Benefits Realisation will make a contribution through a Benefits Realisation process that has been practised, is highly successful and which could make a significant contribution to the literature in the field of Information Technology.

From a practical perspective it is expected that a better understanding of the approach to realising benefits for business and organisations will follow and that a framework will assist users of SAP-IT to successfully implement a Benefits Realisation methodology in business and in particular in utility companies. In addition this study will provide users with the opportunity to find out how to use ERP technology, specifically SAP-IT, as an enabler or agent for change.

1.3.2 Background

SAP is a multifaceted system. Krumbholz and Maiden (2001) describe SAP as needing a different approach for its implementation in order for benefits to be realised. They argue that SAP brings about its own culture, which needs to be adapted within the existing organisational culture. Unlike other IT applications implementation, according to Mandal and Gunasekaran (2003, p. 276) SAP requires fundamental change in the business process, essentially involving “change management implementation”. Unfortunately, it is not always easy to achieve. As Krumbholz and Maiden (2001) point out ERP implementation projects were, on average, 178 per cent over budget, took two and half times longer than intended, and delivered only 30 per cent of the promised benefits. The crux of the problem was an improper implementation.

Eleven critical factors for the successful implementation of ERP systems have been identified from a comprehensive review of the literature (Nah, Lau, & Kuang, 2001). These are: ERP teamwork and composition; Change Management program and culture; top management support; business plan and vision; business process reengineering with minimum customisation; project management; monitoring and evaluation of performance; effective communication; software development, testing and troubleshooting; project champion; and appropriate business and IT legacy systems. It is noted that monitoring and the evaluation of performance, a related subject of this proposal, is one of the critical factors identified. The importance of performance evaluation by ERP systems for successful implementation is further supported by the developed process of critical success factors (Al-Mashari, Al-Mudimigh, & Zairi, 2001).

1.3.3 Overview of the Study

Literature reveals that in order to implement complex systems like ERP software a project and program management approach must be undertaken formally (Weston Jr., 2001; Ribbers and Schoo, 2002). In the case of the Water Corporation, a formal project was defined for SAP implementation and within this project a “Benefit Realisation Strategy and Realisation Process” was considered to be a critical factor in order to deal with the change management process and thus maximise the implementation prospects of SAP. It was also recognised that the benefits identified for the business case would need refining. Therefore discussion on “Redesign” of the business process proceeded. This resulted in a clearer understanding of the impact of the new processes. In other words benefit realisation for SAP is not static, it is fluid and dynamic. Consequently, the end users must be aware of the benefits of SAP in a formal and ongoing way (Water Corporation of W.A., 1997a).

Most of the studies on ERP implementations primarily dealt with identifying (and sometimes testing) various critical factors. The range of studies varied from theoretical opinion-based to deep model building and testing quantitatively in a sample of firms. The notion of “benefit” came across in almost all the studies, either directly or indirectly. No formal study, however, was available to realise the benefits in an effective way, nor was the benefit notion used in any study as a means to implement ERP successfully. This notion of benefit is insufficient and there is a need for a study which examines a strategy and process for the realisation of benefits as a key success factor in the implementation of an ERP such as SAP. Additionally the distinct phases of pre-implementation, implementation and post-implementation as strategies found by Mandal and Gunasekeran (2003) in the Water Corporation in Australia were considered to be critical in a successful ERP implementation. This may be significant in relation to the realisation of benefits and to this proposed study.

1.3.4 Looking at Utilities in WA

Government utilities include electricity, gas, water, rail and telephone. Finding users of SAP who were interested in participating in a study on SAP and the realisation of benefits was a task in itself as the response rate was low. Two utilities were identified and agreeable to the researcher carrying out an investigation in their respective businesses. Originally these were the Water Corporation of WA and Alinta Gas.

The Researcher proceeded to investigate the Water Corporation who identified suitable cohorts and made arrangements with the researcher to conduct interviews on site. In due course this was completed satisfactorily. Preparations were also made with Alinta at a later stage and agreement to carry out the required research was ready for initiation when Alinta suddenly became a victim of a merger. The opportunity to research Alinta was on again off again for a protracted period of time. Other candidates were sought to no avail and finally Alinta withdrew completely.

The researcher prospected for a further 3 years before negotiating with WestNet Infrastructure Group to participate in the study. During the final quarter of 2009 the researcher successfully completed data collection for this study.

1.4 Realising Benefits using Systems, Applications, and Productions in Data Processing (SAP-IT) Enterprise Resource Planning (ERP) software.

By way of background, the Water Corporation was increasingly facing some major challenges in the form of tighter regulation and competition, in one form or another. International utilities are expected to actively seek opportunities in the Australian market, and were already competing in some instances. The Corporation's direction as outlined in its Strategic Development Plan and its active pursuit of performance improvement were at the time clear indications that it was seeking to ensure its competitiveness by adopting "best practices" throughout the organisation. There was overwhelming evidence that the Corporation would simply be unable to meet the requirements of a regulated competitive environment while it continued to rely on the management information provided to it by its current systems (Water Corporation of W.A., 1997 b).

In May 1997 the Water Corporation completed a major information management planning initiative (the 'Corporation Information Management Strategy') to identify its strategic information needs of the Water Corporation through until 2002. In doing this, consideration was given to the Corporation's current information systems and technology environment, to identify a program of work aimed at positioning to make cost effective use of information and information technology in undertaking its business. A key finding of the plan was that the existing suite of information systems lacked the functionality to support both current and emerging business requirements. In particular:

- The current systems comprise a combination of ‘in house’ developed solutions and commercial packages. The majority of the existing systems are more than 10 years old and require significant ongoing maintenance and support.
- The systems utilise individual databases with data being exchanged through a set of complex interfaces: as a consequence data are frequently entered separately in different systems resulting in duplication of effort, and inconsistencies in the data.
- As a result of the lack of integration between systems, implementation of procedural or data changes in any system requires similar manual changes to be made in other relevant systems.
- No existing corporate systems are in place to support project management or contract management activities; this represents a major shortcoming given the magnitude of Corporation expenditure on capital investment and service delivery contracts.
- As a result of the system limitations, access to management information on many key business processes is limited, with data frequently being unreliable and out of date.

In the light of the above, a key recommendation of the Corporate Information Management System was to investigate the feasibility of replacing existing corporate applications with an integrated contemporary solution (Water Corporation of WA, 1997a – 1997d). In December 1997, a decision was therefore made by the Board of the Water Corporation to implement and integrate key business systems using the SAP R/3 packaged software as part of the “System 2000 project”. The Corporation’s implementation of SAP R/3 was considered to be much more than the upgrading of systems to meet Year 2000 requirements. It was an essential strategic step to enable the Corporation to succeed against the competition that will emerge in the next several years.

1.4.1 Benefits Realisation Structure and Change

Services of Deloitte ICS consulting were used to implement the operational aspects of SAP. It was felt, however, that to reap maximum benefit there needed to be a culture-shift and associated behavioural changes in the corporation’s management and staff. It is this supporting program of cultural change that will ultimately ensure the realisation and continuous reinforcement of the benefits identified for each of the process streams. SAP alone can deliver only a fraction of the benefits identified if the implementation is not

complemented by vigorous executive leadership. Fundamental cultural changes would be required to bring about a commercially aware and operationally astute The Water Corporation of the future.

A project management approach had to be undertaken to implement SAP. In the Water Corporation's case a formal project was defined for SAP implementation and within this project a "Benefit Realisation Strategy and Realisation Process" was considered to be a critical factor in order to deal with the change management process and thus maximise the implementation prospects of SAP. It also recognised that the benefits identified for the business case would need refining, and discussion on "Redesign" of the business process proceeded and the impact of the new processes became more clearly understood. In other words benefit realisation for SAP is not static, it is very much dynamic. The end users must be made aware of the benefits of SAP in a formal and ongoing way.

The Benefit Realisation program of the corporation was considered to be vital for the successful implementation of SAP. It was structured as follows.

1.4.2 The Benefits Management Office

A Benefits Management Office was established to maintain stewardship of the Benefits Realisation Process, the resulting documentation and knowledge assets arising across all process streams. The office had four full time and three part time employees. The roles included:

- Supporting the creation of business cases and funding proposals for out of scope initiatives and new initiatives, by interpretation of the associated benefit implications, i.e. dollars, timing, resources, etc.
- Monitoring the identified intangible benefits for review and reporting to the Water Corporation as part of the ongoing process of cultural change.
- Revising the preferred realisation scenario to reflect the latest information on realised benefits as well as continuing any proposed initiatives.
- Communication to all stakeholders about benefits delivered.

1.4.3 The Benefits Register

A Benefits Register was created. Following sign-off of the benefits initiatives, it was appropriate to formally register the benefits. This required the creation of a base record in the Benefits Register database. The Benefits Register became the basis for the formal tracking of the benefits realisation for each of the agreed initiatives. The register was maintained by the Benefits Management Office, and contained the following sections:

Register of Initiatives – contained all data related to the benefits, their measurement and assigned accountabilities for realisation.

Benefits Realisation Status – contained information related to physical tracking of registered initiatives. This would include projects undertaken, progress reports, benefits generated, and costs incurred.

1.4.4 Defining the “Realisation Plan”

Defining the “Realisation Plan” was considered to be a complex process. As indicated earlier it involved finding the activities, responsibilities and timing, and it was outcome focused. Figure 1.1 shows the process which was followed in order to develop the “Realisation Plan”.

The process involved three major phases: set the current baseline (“as-is” position). develop target baseline (“to-be” position). and prepare the realisation plan (implementation framework) (see Figure 1.1). The Benefit Realisation builds on prior work undertaken for the business case and seeks the assistance of additional information and analysis, to validate the findings of the business case and identify additional benefits. Finally, a realisation plan is developed to set out how the Corporation will realise the benefits and what initiatives must be put in place in order to achieve them. The work plan incorporates a number of inputs, including the results of the “Visioning and Targeting phase of Systems 2000”, the incorporation of world’s “best practices” and “benchmarking” data, the outputs of the “process redesign workshops” and “interviews” with The Water Corporation staff. (The Water Corporation of WA, 1997 a, b, c & d).

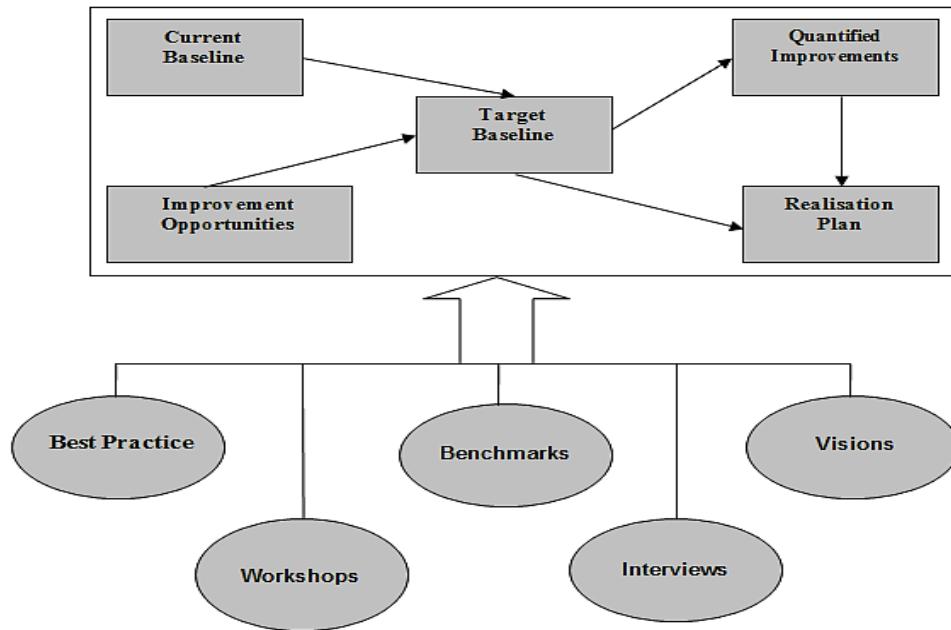


Figure 1.1: Process for Realisation Plan

Source: Water Corporation WA, 1997

1.4.5 Benefits Realisation and its Impact

A structured approach to develop “target baselines” (see figure 1.2) and benefits for each SAP sub system was effected, and was undertaken by external consultants and internal business representatives. The outcomes included a series of recommended business changes to maximise benefits from SAP, such as centralising HR/Payroll, Logistics Management, Finance and Controlling, and the processing functions associated with Plant Maintenance (Blick and Quaddus, 2005, p. 150).

Process Management principles were developed in the Visioning Phase of the SAP Project by adopting the “Industry Process Print”. The process Model was further developed and accepted during the current Benefits Realisation phase. This paved the way for breaking down cross functional organisational barriers that hindered change and placed responsibility on Process Owners for leading the implementation of change initiatives (Blick and Quaddus, 2005, p. 151).

SAP was also being used by the business as a process improvement tool. For example, a HR Service Centre was implemented, where a new central function was created to reduce transactional staffing numbers Corporation-wide, while improving the process. Shared business support functions may also be reviewed to improve operational effectiveness, achieve savings for the business, and reduce staffing numbers, such as Logistic Services (Material Management Process). There is potential for similar benefits in the Plant Maintenance Process from centralising transactional functions associated with Work Order feedback and employee Daily Time Sheets (Blick and Quaddus, 2005, p 151).

System functionality and integration has provided the business with opportunities to commercially benefit from centralising some of its functions. There is no reason why this should not continue, if there are sound commercial opportunities, and no negative impact on business performance (Blick and Quaddus, 2005, p 151).

1.4.6 Expected Strategic Benefits with SAP

Before SAP was implemented a detailed list of “expected” benefits was worked out. The project team along with outside consultants identified the following strategic benefits:

- Increased customer satisfaction
- Faster response to regulatory reporting demands
- Increased competitive advantage
- Supported alliances, mergers and acquisitions
- Improved business decisions
- Process integration and improvement
- Improved access to information
- Integrated culture
- Improved flexibility/adaptability
- Benchmark partnerships

- Improved employee flexibility

(Blick and Quaddus, 2005, p 148)

1.4.7 Emergence of Themes and the Theoretical Perspective

From the data analysed contained in the interview transcripts, 21 themes emerged. These were presented as findings in Chapter 6. In order to answer the research question “**How have the Water Corporation of WA and WestNet Group Infrastructure WA implemented and utilised SAP-IT?**”, the researcher using the grounded theory principle of emergence, took the 21 themes presented as findings as depicted in Chapter 6, and discussed in Chapter 7. The key themes were Integrative, Leadership, and Planning. Integrative was aligned in Literature with Boubekri (2001), who states that ERP is an integrated set of programs that provides support for core organisational activities. Furthermore, ERP Systems allow companies to integrate at all levels and utilise important ERP Systems applications such as supply chain management. Leadership was also aligned to the literature of Sarker and Lee (2002) who presented three key social enablers – namely strong and committed leadership, open and honest communication, and a balanced and empowered implementation team – as the precursors of successful ERP implementation. Taking a positivist case study approach the authors, however, found that only strong and committed leadership could be established as a necessary condition of successful ERP implementation. This was certainly the finding in both utilities, which supports the literature. The third key theme was Planning and the approach by both utilities supported the notion by Mandal and Gunasekeran who reported on an ERP implementation in a Water Corporation in Australia where they found three distinct phases of planning. These were pre-implementation, implementation, and post-implementation, which they stated were significant in the success of ERP Implementation. This was the approach taken by Water Corporation WA which strongly confirms the finding whilst WestNet Group Infrastructure in a lesser way. These findings are aligned to the literature and also confirmed what was stated in the literature.

1.4.8 Context

The Water Corporation of Western Australia

The Water Corporation of Western Australia (<http://www.watercorporation.com.au>) is the principal supplier of water, wastewater and drainage services in Western Australia to hundreds of thousands of homes, businesses and farms, as well as providing bulk water to farms for irrigation. The website of the corporation describes its services as follows:

Our services, projects and activities span over 2.5 million square kilometres. We have regional offices in Perth, Bunbury, Albany, Karratha, Geraldton, Northam and Kalgoorlie which allows our employees to provide a high level of professional expertise to customers. Our purpose is to provide sustainable management of water services to make WA a great place to live and invest.

History of The Water Corporation

The Water Corporation was created in January 1996 in a restructure of the water industry in Western Australia. It replaced the State's Water Authority to establish a more business focused organisation and to separate the user and regulatory functions of water allocation. The new The Water Corporation saw a cultural shift to more robust planning and development. It had a more commercially focused Board with commercial and professional directors charged with driving the Corporation to achieve defined strategies and goals.

The Water Authority in turn had been created in 1985 through a merger of the former Metropolitan Water Authority which operated in Perth, the State capital and the water and wastewater operations of the former Public Works Department.

WestNet Infrastructure Group Ltd.

WestNet Infrastructure Group Ltd. (<http://www.wng.com.au>) along with its subsidiaries, provides asset and project management services to infrastructure clients in gas and electricity fields in Western Australia. It offers engineering, procurement, project management, operational and maintenance services, as well as legal, human resources, information technology and finance services. The company also provides overhead and underground electricity cabling services and manages natural gas pipeline expansion projects. In addition, it operates and maintains rail infrastructure in the southern half of Western Australia, as well

as acquires, manages and operates various energy transmission and distribution, and transportation infrastructure assets in Australia and internationally.

History of WestNet Infrastructure Group

WestNet Infrastructure Group Ltd. was formerly known as Alinta 2000 limited and changed its name to WestNet Infrastructure Group Ltd in September 2008. The company was founded in 1995 and is based in Perth. WestNet Infrastructure Group Ltd. operates as a subsidiary of Babcock and Brown Infrastructure (BBI EPS)

1.4.9 Expected Operational Benefits

The expected operational benefits were centered around the following areas: Projects, Finance and Materials management.

In the area of projects, the Water Corporation of WA 1997 spends approximately AUD 275 million per annum on its capital program. For a number of reasons including approved scope changes, land access problems, latent construction conditions and resource availability, projects are often not completed within their estimated time frames. This contributes to project cost overruns. In addition, the current lack of systems integration, caused by the existence of a number of disparate systems for example Works, Corporate Information Processes, General Ledger and Primavera, generates inefficiencies in the management and administration of projects and contracts. The implementation of SAP was expected to benefit the Corporation by providing tools that will enable project managers and support staff to focus their efforts on delivering quality outcomes rather than expending effort on the current cumbersome reporting and administration process. This should result in:

- Lower project management costs and/or an improved focus on quality project outcomes
- Improved project-reporting information highlighting the causes of estimate variations
- Providing a means for taking corrective action and a basis of continuous improvement.

This would allow the Corporation to realise quantifiable benefits (net of costs) which equate to AUD 24.85 million in present value terms over an eight year time horizon (Blick and Quaddus, 2005, pp 148-149).

In the Finance area, SAP functionality would enable a significant amount of process change to occur as a result of:

- Streamlining of processing effort
- Streamlining of data gathering, compilation, and presentation
- Reduction in data validation and error correction
- Elimination of duplicate data entry points
- Consistency of information enabling efficient information sharing
- Consistent practices and business rules enforced through the system
- Visibility of information across functional boundaries and
- Improved data interrogation capabilities.

This would allow the Corporation to realise quantifiable benefits (net of costs) which equate to AUD 13.03 million present value terms over an eight year time horizon. (Blick and Quaddus, 2005, p 149) In materials management, SAP functionality would enable the Corporation to realise quantifiable benefits in two key areas:

- Discounts through supplier rationalisation and strategic contracts.
- Improved inventory management.

(Blick and Quaddus, 2005, p. 149)

In the area of supplier rationalisation and strategic contracts, the use of SAP functionality and tools would assist the Corporation in selecting the contract suppliers by providing vendor evaluation and flexible reporting from summary to detailed level. The decision support capability provided by SAP would need to be supplemented by additional resources to negotiate and set up contracts.

In the area of improved inventory management, strong integration with project schedules and Works Management schedules would provide the opportunity to use the integration of SAP to alter the requisition dates in the Material Management Module to reflect slippage in

projects, thereby reducing the risk of unnecessary stockpiling of inventory. This would allow the Corporation to realise quantifiable benefits (net of costs) which equate to AUD 11.50 million in present value terms over an eight year time horizon.

Besides the above quantifiable benefits the project team also came up with a list of intangible benefits for various functional areas which will come about due to SAP implementation (Blick and Quaddus, 2005, p 150).

1.5 Benefits Realisation Thinking

The Benefits Realisation process has focused on a long-term view in contributing to the development of a cultural change in the business. It has done this by developing processes and tools, including:

- Benefits Delivery Implementation Process and Tools
- Operating Principles for Leading Organisational Change
- Communication and Stakeholder Enrolment Strategy
- Benefits Realisation Group Relationships
- High Level Generic Implementation Plan and Time Line
- Low Level Generic Implementation Plan and Time Line
- A requirement for a structured methodology to deliver process improvements and process re-engineering business gains.
- A Benefits Realisation Strategy incorporated in any change process and business case.
- An ongoing employee education and development strategy is in place.
- Accountability for the delivery of benefits by Process Owners, Custodians and Managers is defined and agreed prior to the implementation of any change process to assist them to drive full realisation of benefits within an established time frame.
- The Benefits Realisation Group providing the tools and support to enable Process Owners to lead the implementation of initiatives

- The Benefits Realisation process focusing on providing a consulting, facilitation and advisory service, including the provision of business processes and tools.
- Integration, coordination and cooperation between all impacted sectors of the business from commencement of the change process
- Business savings being recorded and reported
- Process Custodians and Process Managers monitoring and reporting regularly to the executive on tangible and non-tangible business benefits as a result of change initiatives.

(Blick and Quaddus, 2005, p 151)

1.6 Benefit Realisation Process

Figure 1.2 shows an overview of the benefit realisation process, which was actioned at the Water Corporation.

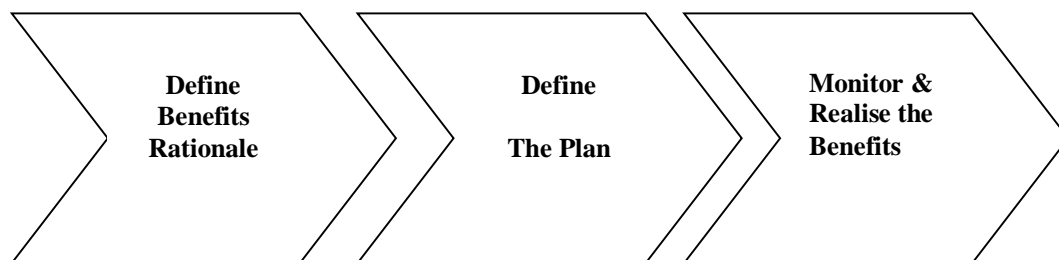


Figure 1.2: The Benefit Realisation Process

Source: Water Corporation WA, 1997

It consisted of three phases:

Define the Benefits Rationale – This phase established the overall context for the change that was proposed through the implementation of SAP R/3. This was part of the pre-implementation plan and it drew a line in the sand so that benefits could be measured after implementation.

Define the Plan – Having defined the rationale, the approved benefits realisation initiatives were planned in terms of activities, responsibilities and timing. The plan was primarily outcome focused.

Benefits arising were measured at the major initiative level. The focus was on the explicitly identified segments that provided the greatest measurable payback.

Monitor and Realise the Benefits – “Benefits realisation plan progress was monitored on an ongoing basis. Accountability for realising the benefits rested with the Process Owners, supported by a Benefits Management Office. The benefits achieved were monitored via a Benefits Register (as described earlier). When unexpected issues arose, the impact was analysed and as a result downstream plans might change. This phase used to begin with the commencement of sign-off and continued through the entire realisation process” (Blick and Quaddus, 2005, p 146).

1.7 Participants in the Benefits Realisation Process.

The Water Corporation

The cohort for the Water Corporation was diverse in its make up as it contained representatives from different Business Units within the corporation. The skills or competency mix was also diverse as it contained a mix of IT technocrats and personnel with sound business backgrounds and good IT skills. This mix provided a sound platform for the SAP project team to undertake the delivery of SAP as per the requirements contained in the business case for the acquisition and implementation of SAP. This approach was also used to put the Benefits Realisation project team together. The hierarchical arrangement of subjects interviewed ranged from operatives to the Chief Operating Office in the Corporation. Additionally it included both urban and country representatives who provided a broader reflection of the Corporation’s make up. This also reflected the business diversity of the Water Corporation and its mandate to provide services to an extraordinary and immense, mainly arid operational area within the state of Western Australia. i.e. the supply of potable water to customers and the disposal of waste water from its customers. Twenty three people were interviewed.

WestNet Group Infrastructure

The cohort for WestNet Group Infrastructure was similar in compilation to that of the Water Corporation and the diversity sought from the Water Corporation was similarly provided by WestNet Group Infrastructure. A similar number of participants were interviewed covering the split business of WestNet Group Infrastructure.

1.8 The Researcher

The Researcher's Proposal was approved by the Graduate School of Business, Curtin University W.A. The title of the proposal is "A Comparative Study of Benefits Realisation and Change Management using Enterprise Resource Planning Technology, Systems, Applications, and Productions in Data Processing (SAP) in Utility Enterprises."

The aim was to research the successful SAP implementation in the Water Corporation, WA and to explore the factors that determine success or failure. The research will also study SAP implementation in another Utility enterprise, viz WestNet Group Infrastructure Western Australia. The Researcher has a strong interest in and a passion for Benefits Realisation.

This study has taken considerable time due to both organisational and personal health reasons. There was also the issue of being given corrupt versions of NVivo and endeavouring to work through this issue whilst living overseas. These were some of the limitations that the researcher faced in the early stages of the study.

An interview questionnaire was developed, designed and trialled in the Water Corporation of WA. The same questionnaire was used in both organisations, a copy of which is contained in Chapter 5, pp 72, 73 and 74. Data from both organisations was collected and transcribed for analysis.

It was intended that samples would be drawn from two utilities (WestNet Group Infrastructure and the Water Corporation of WA) that use SAP. The target sample is SAP users who use SAP to support their tasks and the benefits that are realised through this usage. The activities were undertaken with the least disruption possible. Additionally, review of any supporting documentation also formed part of the research.

The Researcher's approach was to interview users of SAP and also decision makers using SAP in both the Water Corporation WA and WestNet Group Infrastructure. The aim was to interview about 20 comparable people in both organisations. The sample was comprised of Operators, Supervisors/Team Leaders, Managers, General Managers and the CEO if possible. The Researcher interviewed each person using a tape recorder. The interviews ran for between 30 and 45 minutes per interview. Interviews were conducted in a quiet room provided by each organisation. Pre-arranged days and interview times were arranged by the Liaison person in each utility and the Researcher. Two to four interviews were conducted per day preferably consecutively with a 10 to 15 minute interval between interviews.

Once the interviews had been completed the task of transcribing the responses was undertaken which was extremely onerous and time consuming due to the different accents and pace encountered in each workforce. NVivo was then used to analyse the data collected allowing themes to emerge once saturation had been reached. Themes were then classified and grounded research was applied allowing the emergence of the thesis. Additionally West Net Group Infrastructure was under threat of takeover, liquidation and other changes at the time and it was miraculous that the Researcher was permitted entry into this Organisation at the time. The Water Corporation WA had completed its more turbulent change moving from a Public Sector Utility to a Government corporatised business entity. The Researcher encountered easier air to breathe in this utility as it was a more relaxed environment to work in. The Researcher was grateful and thankful to both organisations for their generosity, resources and time granted to the Researcher so that he was able to collect the necessary data, information and material to carry out this research.

The overall framing of the thesis is as follows. Chapter 1 introduces the approach, major themes, research objectives and research questions. Chapter 1 also looks at the Significance, Background, Overview of the Study and the Utilities being studied. It briefly informs on Realising Benefits using Systems, Applications, and Productions in Data Processing (SAP-IT) Enterprise Resource Planning (ERP) software, Benefits Realisation Thinking, Process and the participants including the Researcher.

Chapter 2, Literature Review and Benefits Realisation, briefly explores Benefits Realisation and Change Management.

In Chapter 3, Theoretical Perspective and an international view of Benefits Realisation emerges through briefly examining Ontology, Epistemology, Methodology, Critical Realism and the Limits of Knowledge.

Chapter 4 focuses on Methodology looking at the Fit between information systems features and the original context, Significance of the Study, Relevance, Rigour and Triangulation.

Research and Design is Chapter 5 and in this chapter, I look at Designing the Interview Guide, Preliminary Study, Sample and Data Collection (Data Sources and Integrity).

Chapter 6 narrates the Findings of the Study, defines the themes and sub themes in both cohorts in the Water Corporation and WestNet Group Infrastructure.

In chapter 7, I focus on Discussion of the Research Design, Findings and identify the Similarities and Differences between the two utilities.

Finally, in the summary in Chapter 8, the researcher reports on the key results, differences and similarities between both utilities.

Chapter 2

LITERATURE REVIEW

“Wisdom is the principal thing; therefore get wisdom: and with all thy getting get understanding.” Prov. 4:7(AKJV)

2.1 Literature Review

Implementation of Information Systems has been widely researched over the last three decades. (Kwon and Zmud, 1987; Cooper and Zmud, 1990) A number of high-level factors, such as individual, structural, technological, task-related, and environmental factors, have been found to affect the successful implementation of information systems (Kwon and Zmud, 1987). Most of these studies were, however, conducted in the context of traditional functional information systems. Enterprise Resource Planning (ERP) software, of which SAP is the market leader, brings extra complexities into the implementation process. The market share of SAP in ERP in 2011 was 24 per cent (Panorama Consulting). ERP needs a deep appreciation of both operational and strategic impacts on the organisation, and very often the successful implementation results in a cultural shift. Critical Realism is connected to the research and the outcome of this study, as it is a real business situation. Because of the approach, critical realism is embedded in the grounded research. What follows is a review of some past literature presented on the implementation of ERP/SAP.

2.2 Background Literature

Enterprise Resource Planning (ERP) is a collection of software modules that integrate all of the divisions of a company via a centralised database (Larocca, 1999). While seemingly simple, it is in reality a complex, multifaceted set of systems. It can be separated into its component parts to understand what it is and how it operates.

ERP systems are like a bicycle wheel. Think of the database as the centre of the wheel, and give each division of the corporation a spoke that connects the centre with the outside of the rim. Think of these outside connections at the rim as each of the divisions point of contact with the business world. Due to the layout of ERP software, these divisions are usually Finance, Production, Marketing, Human Resources /Payroll, Accounting, and so on (Sankar & Rau, 2006, p 5).

According to Boubekri (2001), an Enterprise Resource Planning system is an integrated set of programs that provides support for core organisational activities. ERP is a software infrastructure embedded with “best practices,” or best ways to do business based on common business practices or academic theory. The aim is to improve the cooperation and interaction between all the organisations’ departments, such as the products planning, manufacturing, purchasing, marketing and customer service department. ERP systems are fine expression of the inseparability of IT and business. Boubekri (2001) believes that an enabling key technology as well as an effective managerial tool, ERP systems allow companies to integrate at all levels and utilise important ERP systems applications, such as supply-chain management, financial and accounting applications, human resource management and customer relationship management.

Additionally, Sankar and Rau, (2006) assert that ERP systems have emerged as a way to address the challenges posed by business and to coordinate activities, decisions, and knowledge across many different functions, levels, and business units in a firm. Just as the internet has revolutionised the way in which we gather and transfer information, ERP has the potential to revolutionise the fundamental ways in which information is stored and retrieved in an organisation. An example of information technology that has effectively reshaped the business world include the World Wide Web (www), which has revolutionised how data is made possible to disseminate information.

However it is not without its challenges. Tambo and Koch (2012, p87) assert that “ERP as a rigid definition in the enterprise has generally troubled researchers”. ERP can assume differing roles over time. Some roles are deliberate and well planned, while others less intended roles can be derived out of corporate subcultures and determinism of other professions (Kerr et al. 2007). Nevertheless Ciborra (2000) argues that this is essentially a drift of the technology in its organisational context. ERP implementation projects are depicted as some of the most important and difficult change projects for most companies, with a track record of failure on either cost, quality or time. Koch (2007) discusses intrinsic “creeping of scoping”, evident during the implementation project as a major contributor to project failure. ERP systems are normally the most critical IT systems of the enterprise by representing master data, tying business processes together and generating the foundation for the operational reporting (Pollock & Williams, 2009, Sadagopan, 2004). Management who would desire the highest level of confidence and reliance in the ERP, tend to especially

regard ERP as an unchallenged governor of business processes even if uncontrolled behaviour, for instance poor operational reporting, successively enters the system (Kerr et al 2007).

Nah et al. (2001) conducted a comprehensive review of the literature on ERP systems and found eleven factors which are critical in the successful implementation of ERP systems. These are: ERP teamwork and composition; change management program and culture; top management support; business plan and vision; business process re-engineering with minimum customisation; project management; monitoring and evaluation of performance; effective communication; software development, testing and troubleshooting; project champion; and appropriate business and IT legacy systems. It is noted that monitoring and evaluation of performance is one of the 11 critical factors, which is linked to realising benefits. Al-Mashari et al. (2003) developed a system of classification of critical success factors of ERP implementations. It is also noted that performance evaluation of ERP systems is one of the most important factors suggested by these authors. In another study Umble, Haft, and Umble (2003) presented a list of nine critical success factors for ERP implementation including: clear understanding of strategic goals, commitment by top management, excellent project management, great implementation team, data accuracy, extensive education and training, focused performance measures, and multi-site issues. It is noted that these factors overlap to a great extent those presented by Nah et al. (2001). The authors also presented a case study and discussed how the nine factors were addressed by the company in implementing an ERP system. Hong and Kim (2002) identified critical success factors of ERP implementations in terms of “organisational fit of ERP” and “contingency variables”. Based on a cross-sectional survey the authors concluded that ERP implementation success significantly depends on the organisational fit of ERP and certain contingency variables.

Mabert et al. (2003b) studied the ERP implementation process in US manufacturing companies. They stated that a typical ERP implementation process took anywhere between one to five years. Furthermore, these authors undertook a comparative analysis of on-time and on/under-budget with late and over-budget ERP implementations using logit (logistic) regression models. The results indicated a number of factors to be significant including pre-implementation planning and system configuration. In a related study Mabert et al. (2003a) conducted a two-phased study of ERP implementations (case studies followed by survey) of

US manufacturing companies. A key finding of this study was that companies of different sizes approach ERP implementations differently, and the benefits realised are also dependent on company size. In the same study, Mabert et al (2003a) found that larger companies report improvements in financial measures, whereas the smaller companies report better performance in manufacturing and logistics. Abdinnour-Helm, Lengnick-Hall, and Lengnick-Hall (2003) undertook an interesting study. The authors wanted to ascertain if pre-implementation involvement and training in ERP resulted in acceptance and effective implementation of ERP systems. Based on a survey in a large aircraft manufacturing organisation in the USA, the authors concluded that, “contrary to conventional wisdom, extensive organisational investments in shaping pre-implementation attitudes do not always achieve the desired effects” (Abdinnour-Helm, Lengnick-Hall, and Lengnick-Hall 2003). However, it must be recognised that the study was conducted only in one organisation and at one point in time, thus limiting its generalisation. In a longitudinal study Hutton, Lippincott and Reck (2003) examined the impact of ERP adoption on firm performance. These authors found that over a three year period firms adopting ERP showed significantly better financial performance compared to the non-adopters. Also, during the same time, financial performance of the non-adopters decreased while it stayed steady for the adopters.

Rajagopal (2002) studied the implementation of ERP taking an “innovation diffusion perspective”. The author examined implementations of ERP in six manufacturing firms through a qualitative research process using the six-stage model proposed by Kwon and Zmud (1987) and developed a comprehensive model of ERP implementation, specifically designed for a large sample of firms. In a comprehensive study Stratman and Roth (2002) developed eight ERP competency constructs which are posited to result in improved business performance after the ERP system is operational in an organisation. These authors used high level confirmatory factor analysis (CFA) technique to test the reliability and validity of the constructs. Their study, however, did not extend to test the impact of these constructs on the improved business performance due to ERP implementation. Sarker and Lee (2002) presented three key social enablers – namely strong and committed leadership, open and honest communication, and a balanced and empowered implementation team – as the precursors of successful ERP implementation. Taking a positivist case study approach the authors, however, found that only strong and committed leadership could be established as a necessary condition of successful ERP implementation. The authors call for more research in this area to determine other factors.

2.3 Linkages to Literature

In a comprehensive survey of 158 Swedish manufacturing firms Olhager and Selldin (2003, p.371) identified a list of 10 benefits that the firms experienced due to ERP implementations. Topping the list were “quickened information response time” and “increased interaction across the enterprise”. The authors also reported the importance of pre-implementation process, implementation experience, and ERP system configuration. Mandal and Gunasekaran (2003) reporting on ERP implementation in a The Water Corporation in Australia found three distinct phases of pre-implementation, implementation, and post-implementation planning to be significant in the success of ERP implementation. The authors also offered specific strategies to be followed in any future implementation of ERP systems. In another study O’Leary (2002) presented a prototype system based on investigating the use of knowledge management, specifically case-based reasoning, across the entire ERP life cycle, reporting its effectiveness in ERP system choice, implementation and use. Krumbholz and Maiden (2001) highlighted the need for adapting ERP systems to fit with the organisational and national culture. Based on an empirical study in a large pharmaceutical organisation in Scandinavia, the authors reported the evidence of a strong association between organisational culture and successful ERP implementation.

It is observed, however, that most of the studies on ERP implementations primarily deal with identifying (and sometimes testing) various critical factors. The range of studies varied from theoretical opinion-based to deep model building and testing quantitatively in a sample of firms. The notion of “benefit” came across in almost all the studies, either directly or indirectly. No formal study, however, was available to examine the realisation of benefits in an effective way, nor was the benefit notion used in any study as a means to implement ERP successfully.

Wang and Nah (2001) report that ERP systems hold the promise of improving processes and decreasing costs. Moreover, they identify two important new lines of business including electronic business (e-business) and supply-chain management that can connect with suppliers, distributors, and customers, facilitating the flow, the product and information. ERP systems implementation is costly and complex. In many cases, an ERP system is the largest single investment in any corporate-wide project. The software is expensive, as are the consulting costs. Meta Group found that the average ERP systems implementation takes 23 months with total owners’ cost of AUD 12 million. (Stewart, 2000) Davenport (1998) as well

as Kim, Lee and Gosain (2005) report that ERP systems implementation is the process where business process and ERP system match each other. Usually the firm has to change the business process per ERP systems. Sometimes most positions have to be redesigned according to the ERP systems. Thus the difficulties and high failure rate in implementing ERP systems have been widely cited in the literature. The failure percentage of ERP systems was determined in a study conducted by Langerwalter (2000) as ranging from 40 to 60 per cent and from other studies as between 60 and 90 per cent (Ptak and Schragenheim, 2000; Yingjie, 2005). In general, these authors identified that although the failure rates of these ERP implementations have been highly publicised, this has not distracted companies from investing large sums of money on ERP systems. According to Somers and Nelson (2004, p.20) “ERP systems provide companies with the means of integrating their business functions into a unified and integrated business process. As companies implement more enterprise based systems throughout their organizations, the need for integration becomes paramount. Expanding from the functional areas of accounting, human resources, and shop floor control to an enterprise-wide system has become a format for producing full organization integration”.

A high percentage of ERP projects fail to be fully implemented or to meet the goals of the users even after three years of work (Laudon & Laudon, 2004). Many ERP projects have been undermined by poor implementation and change management practices that fail to address employees’ concerns about change.

Other researchers have pointed out that strategies such as sustained management support, effective organisational change management, and good project scope management and tactics such as dedicated staff and consultants, strong communication, and formalised project plans were some of the critical success factors in implementing ERP systems (Esteves-Souza & Pastor-Coalldo, 2005).

Over recent years, limited research has been conducted about ERP implementation issues with mostly case studies in individual organisations reported. There is a move toward conducting empirical studies to explore critical factors that affect ERP systems implementation. A study by Colmenares (2010) reports the results of a study based on experience that surveyed managers from seven corporations. These managers were identified as having a key role in ERP systems implementation. Their experiences were used to assess which Critical Success Factors are critical in leading a successful implementation of ERP

systems. A factor analysis solution was used to ascertain issues affecting successful ERP implementation. These factors are: ERP implementation management, users' aptitudes and communication and technical knowledge. The study reveals that around 82 per cent of the variances in ERP systems implementation were explained by these critical factors.

Trying to find solutions to the problems that impact the implementation of ERP systems can appear complex. A range of academics and consultants have undertaken research on the process of implementation and more specifically, about the determination of the factors that contribute to the success in the implementation, best known as Critical Success Factors (CSFS). (Summer, 1999; Umble, Haft, and Umble, 2003; Fui-Hoon et al., 2003; Finney and Corbett, 2007) De Pablos and De Pablos, (2008) designed a model of CSFS based on the analysis of five main groups of variables affecting the final results in ERP implementations. These were:

- Decision-making policy of the firm in the ERP selection, implementation and use
- Training characteristics of the people involved in the ERP implementation and final use
- Organisational inertia in the firm
- Final internal user satisfaction
- Final external user satisfaction

The model was tested and the responses confirmed that these were key Critical Success Factors for the implementation of an ERP. The CSFs were also applicable to both utilities and were dominant in the data emerging from the interviews.

Sankar and Rau (2006) claim that ERP systems can be very beneficial for companies and can increase their competitive advantage. An ERP system can create important business benefits. By integrating the whole business process, it optimises and increases efficiency. Of course without cost reductions and good quality control, an ERP system cannot achieve its full promise. On the managerial level, by supplying appropriate and real-time data, it supports the strategic decision making process in the company. Probably the most appropriate benefit any ERP system brings is its integration potential. Furthermore, Sankar and Rau (2006) assert that by integrating the business processes, the organisational structure is supported to create a more disciplined, timely and cost effective operation. By integrating

geographically dispersed units, it helps to create more uniform organisation structures. Additionally, from a technical point of view, implementing a single, unified and comprehensive information system technology means that the data is standardised and accessible to everyone in the company (Laudon & Laudon, 2004). The question currently faced by managers and executives in many leading corporations is how to implement such systems successfully. Davenport (2000) believes that the answer lies in the success of companies who have undergone a successful implementation.

Robey, Ross, and Boudreau (2002) note that although ERP systems can improve organisation coordination, efficiency, and decision making, they have proven very difficult and costly to build. Many barriers must be overcome before the benefits of ERP systems can be fully realised. Hitt, Wu and Zhou (2002) claim that a typical ERP system installation costs USD 15 million and it may run to over USD 100 million for very large companies. As ERP software implementation is deeply intertwined with corporate business processes, these authors argue that it might take a large company three to five years to fully implement all the organisational and technological changes required. Because ERP systems are integrated, it is difficult to make a change in only one part of the business without affecting other parts. There is also the danger that the new ERP systems might eventually prove as brittle and hard to change as the old systems they replaced, binding firms to out-dated business processes and systems.

Mergers and acquisitions (M&As) have proliferated in recent years because they are major growth engines for businesses. According to Frank and Sidel, (2002), more than 70 per cent of all M&As result in decline in shareholder value, and often lead to divestiture at a later time. Often, the failure can be traced to difficulties in integrating the information systems of different companies. Without successful systems integration, the benefits anticipated from the merger cannot be realised, or worse, the merged entity can no longer execute its own high business processes and might lose customers.

During the past few decades billions of dollars have been invested into information technology purchases. While the projects were initiated for good reasons such as to improve service, reduce costs, lower inventories, improve quality etc. it is likely that financial performance targets were never met. Moreover, after several years, many companies find it difficult to reconstruct all the project's initial drivers. As a result, Information systems (IS) and Enterprise Resource Planning (ERP) projects are often deemed "successful" simply

because they are up and running. Blonkvist and Goble (1994) argue that increasingly executives and IT managers are finding that their systems, while successfully installed come nowhere close to generating the benefits anticipated at the start of the project. There are many reasons for this but are mainly people and process related, and not necessarily the fault of hardware or software.

ERP systems are software packages that need to be embedded, in their basic architecture, business knowledge and business reference models as well as the knowledge and expertise of implementation partners (Srivardhanaa & Pawlowski, 2007). Companies internationally have substantially invested in ERP applications. Despite the large investments, the relatively long experience of companies with this system and the accumulated knowledge about ERP projects, few firms are known to be efficiently using their system (Yu, 2005). Similarly, there have been studies reporting cases of initial implementation failure that transformed into success, yielding significant benefits for the business (Jasperson et al., 2005).

2.4 Benefits Realisation

The Benefit Realisation process involves three major phases:

1. Set the current baseline (“as-is” position)
2. Develop target baseline (“to-be” position)
3. Prepare the realisation plan (implementation framework)

Benefit Realisation builds on prior work undertaken for the business case and seeks to identify additional benefits. Finally, a realisation plan is developed to set out how the organisation will realise the benefits and what initiatives must be put in place in order to achieve them (Blick and Quaddus, 2005).

Completing the system's implementation is, in fact not the end of the ERP journey. Like other complex information technologies, once the system is installed, the adopting organisation must ensure the effective assimilation of the ERP in order to reap its benefits. (Chatterjee et al., 2002) Effective assimilation is achieved when employees' sense of ownership of the system is high, when it becomes institutionalised in the organisation's work processes, and when it is efficiently deployed at the various levels of managerial activities (Botta-Genoulaz & Millet, 2005; Cooper & Zmud, 1990).

According to Tyson (2000), the process of benefit realisation entails establishing a process and guidelines to measure actual financial and non-financial benefits of a program or project. Benefit realisation is a sub component of enterprise portfolio management and is essential to promote strong financial discipline in any organisation. Tyson (2000) reports that some benefits of defining and implementing a benefit realisation strategy include:

1. Ensuring actual program or project benefits are measured as they are achieved,
2. Measuring the true value and return of a program or project upon completion, and
3. Providing accurate data on the total benefit that can then be reinvested.

Unfortunately, there is no one-size-fits-all method to implement a benefit realisation strategy since each organisation is unique at a micro level, but there are several high-level steps that could be similar. At the highest level, Tyson (2004) identifies three major steps in the process:

1. Assess
2. Implement
3. Monitor and measure

A range of contributors to the literature assert that Enterprise Resource Planning (ERP) systems have constituted one of the most important developments in corporate information systems (IS) during the last decade (Davenport, 1998; Hedman and Johansson, 2011; Hitt et al., 2002; Upton & McAfee, 2000). The business interest in ERP Systems can be explained in a number of ways from descriptions of benefits associated with implementation and utilisation of ERPs (Robey et al., 2002). There are several studies on inspiring success. (Davenport, 2000) There are, however, also considerable failures (Larsen & Myers, 1998; Scott & Vessey, 2000). “Benefits of ERPs are only partly related to technology, most of these stemming from organisational changes such as new business processes, organisational structure, work procedures, integration of administrative and operative activities, and global standardisation of work practices, all of which the technology supports” (Hedman & Borell, 2003 p. 288). It has been noted that implementation of ERP systems is a difficult and costly organisational experiment (Robey et al., 2002; Santhanam et al., 2009). Davenport (1996, p 288) describes the implementation of ERP systems as “perhaps the world's largest

experiment in business change” and for most organisations “the largest change project in cost and time that they have undertaken in their history.” The implementation is a necessary but insufficient prerequisite for benefits and value, and business value can only be derived from an efficient and effective utilisation of information technology resources. (Agarwal et al., 2000) The management of ERP utilisation is thus of critical importance, and involves development and implementation, as well as usage of resources (Balakrishnan & Das, 2009; Kalling, 1999).

According to Hedman and Johannsson, (2011) many benefits have been identified and studied and this has been identified in previous research undertaken by Shang & Sneddon, (2002). Past research has focused on defining success factors (Robey et al., 2002), such as top management involvement and support, rather than investigating how ERP systems utilisation relates to benefits. These authors contend that one possible explanation for this is that in previous ERP research on benefits and success, the state of 'go live' in the implementation of ERPs is often equivalent to use. In other words, they argue that benefits are directly and causally related to the first day of use. The predominant view of utilisation is “use” in different forms. Some examples include intention of use, or user satisfaction. (DeLone & McLean, 1992) Here, Delone and McLean (2003) claim that there are deficiencies related to the word 'use' emphasising that 'use' as a construct is too simplistic. Hedman, and Johannsson (2011) consider that ERP systems utilisation should be explored from an organisational as well as a systems perspective. To this end they introduce utilisation of ERP systems as a measure of use and develop a model of ERP adoption which they describe as internal diffusion of ERP systems in organisations. The claim that using diffusion of ERP as a measure is that it is not until ERP is diffused and integrated within a large part of the organisation that benefits will be derived, namely when a critical mass is reached. This also means that internal diffusion of the ERP is necessary before ERP utilisation in an organisation becomes a reality.

Mishra (2008) asserts that ERP system investments are strategic in nature, with the key goal often being to help a company grow in sales, reduce production lead time, and improve customer service. In IT, evaluation costs are hard to quantify in post-implementation audits and benefits are harder to identify. (Hochstrasser & Griffiths, 1991; Willcocks & Lester, 1999; Irani, Sharif, & Love, 2001; Seddon, Graeser, & Willcocks, 2002) Management of organisations that adopt ERP expects many benefits from the systems, although associated

expectations are often difficult to meet as discussed previously. ERP can provide more responsive information to management. There is also more interaction across the organisation and more efficient financial operation. (Olson, 2004) There is a weaker perceived benefit from operational performance, such as improved operating efficiency, inventory management, and cash management. While more information is available at higher quality, this may not directly translate to cost efficiencies.

Mishra (2008) claims that ERP systems, particularly SAP, delivers business benefits where they matter most - to the bottom line – and addresses the internal and external business requirements of global enterprise. In addition, Mishra argues that businesses can reduce costs associated with compliance and administration, in part by creating flexible processes.

WCWA's deliverables from the application of its Benefits Realisation program supports Mishra's claims, p 167 and What BR has achieved p 158. Benefits from ERP can be both tangible and intangible. Webster (1994) defines a tangible item as "something that is capable of being appraised at an actual or approximate value."

But the value is monetary worth. According to Hares and Royle (1994, p 83), "an intangible is anything that is difficult to measure," and the boundary between tangible and intangible is fuzzy at best. Determining the intangible benefits derived from information systems implementation has been an elusive goal of academics and practitioners alike. (Davern & Kauffman, 2000) Nandish and Irani (1999) discussed the difficulty of evaluating IT projects in the dynamic environment, especially when intangibles are involved in the evaluation. Tallon, Kraemer and Gurbaxni (2000) cited a number of studies indicating that economic and financial measures fail to assess accurately the payoff of IT projects and suggested that one means of determining value is through the perception of executives. This is certainly one of the approaches WestNet Group Infrastructure undertook by contrast to the Water Corporation's Benefits Realisation Program identifying, delivering and measuring benefits. They focused on the strategic fit and the contributions of IT projects, but indicated that researchers somehow need to capture or better represent the intangible benefits of IT. In the technology arena, as in the business areas, many projects deliver benefits that cannot be easily quantified (Murphy & Simon, 2002). Many benefits related to the information technology projects cannot be easily quantified, for example better information access, improved workflow, interdepartmental coordination and increased customer satisfaction (Emigh, 1999). These are also the features that are listed as the key attributes of ERP systems

(Mullin, 1999; Davenport, 2000). ERP systems are implemented to integrate transactions along and between business processes. Common business processes include order fulfilment, materials management, production planning and execution, procurement, and human resources (Murphy & Simon, 2002). ERP systems enable efficient and error-free workflow management and accounting processes including in-depth auditing. These systems feature a single database to eliminate redundancy and multiple entry errors, and they provide in-depth reporting functionality. ERP systems provide information for effective decision making on all organisational levels (Murphy & Simon, 2002). According to Hares and Royle (1994), there are four main intangible benefits in IT investment:

- **Internal Improvement:** This includes processes, workflow, and information access.
- **Customer Service:** This ensures quality, delivery, and support.
- **Foresight:** This is vision regarding markets, products, and acquisitions in the future.
- **Adaptability:** This is the ability to adapt to change in a rapidly changing industry.

The third and fourth intangibles are future oriented and include spotting market trends and the ability to adapt to change.

The literature suggests that intangibles can be converted into monetary terms through the ability to take care of the following observations:

- Maintain and increase sales
- Increase prices
- Reduce costs
- Create new business

Hares and Royle (1994) offer a procedure to quantify intangible benefits with the major steps including identifying benefits to be quantified and making intangible benefits measurable.

2.5 Change Management

Somers and Nelson (2001) argue that change management is a primary concern of many organisations involved in ERP project implementation. Cooke and Peterson (1998) also identify change management, in terms of adopting an ERP system, as activities, processes, and methodologies that support employee understanding and organisational shifts during the implementation of ERP systems as well as re-engineering initiatives.

Kelly et al, as well as Sumner (1999) argue that many ERP implementation failures have been caused by the lack of focus on the 'soft issues', i.e. the business process and change management. Pawlowski and Boudreau (1999) point out that almost half of ERP projects fail to achieve expected benefits because managers underestimate the efforts involved in change management. Generally, one of the main obstacles facing ERP implementation is resistance to change. Bancroft et al (1998) and Gupta (2000) argue that the resistance to change is one of the main hurdles faced by most companies. Martin and Ching (1999) suggest that to decrease resistance to change, people must be engaged in the change process and helped to see the ways that change will benefit them.

In essence, Norris et al (2000) point out that tools for the management of change are leadership, communication, training, planning, and incentive systems. They argue that these tools can all be used as levers to move great obstacles with a minimum of effort when applied correctly. Participants in the research carried out in the Water Corporation and WestNet Group Infrastructure emphatically state that the importance of the tools as management for change are critical success factors for any IT implementation.

An ERP system has a major impact on organisations, especially on their staff (Welti, 1999). Thus, change management is essential for introducing a company to an ERP system and its successful implementation. In order to implement an ERP system successfully, the way organisations do business will need to change and the ways people do their jobs will need to change also (Koch et al, 1999; Davenport, 2000).

In adopting a new information system, several approaches and methodologies of change management have been introduced by a number of authors and practitioners such as Bancroft et al, (1998); Martin & Ching, (1999); Welti, (1999), Norris et al, (2000). Sieber and Nah (1999) propose a recurring improvisational change methodology as a useful technique for

identifying, managing, and tracking changes in implementing an ERP system. It recognises three types of change:

1. Anticipated change: planned ahead of time and occurs as intended.
2. Emergent change: arises spontaneously from local innovation, and not originally intended.
3. Opportunity based change: introduced purposefully and intentionally during the change process in response to an unexpected opportunity, event or breakdown.

Welti (1999) describes how in one organisation employees were prepared for the coming change through:

- management support
- information
- communication and
- training

Al-Mashari and Zairi (2000) assert that effective change management ensures a smooth insertion and a minimum resistance of the newly implemented systems, processes and structures into working practice. A survey of SAP implementation experience shows that 63 per cent of the responding companies used change management tools in various stages of implementation. Of these 54 per cent undertook the change management efforts before implementation began, while 78 per cent of these believe that change management should take place prior to the implementation, as noted by Cooke and Peterson, (1998).

Recommended is a strategy for change management that covers various aspects, such as communication, people involvement and empowerment, training and education which creates a change readiness in organisational culture (Bancroft et al., 1998). All this effort requires sound management processes and practices which can positively influence the success of SAP implementations, such as top management support and commitment, championship and sponsorship, and effective management of risks.

Looking specifically at industry experiences with SAP implementations, Pereira, (1999). claims that given the tightly integrated nature of this system, there is an organisational structure and culture that would fit perfectly with SAP. Such an organisation would be highly centralised, with all business units and functions being subservient to a central set of strategic and operational decision makers. There would be few differences in how work is done and information is used across the organisation. Local managers would be willing to sacrifice local goals for the good of the larger organisation.

Specific organisational adaptations are made by a few organisations to better fit with SAP. Some firms have concluded that the best way to achieve such organisational change is to work through the organisation unit by unit. While this less ambitious implementation strategy may have a higher chance of success than a one time, top down approach, it can lengthen implementation time and increase costs. Firms that do not achieve the requisite organisational changes may end up abandoning SAP altogether (Pereira, 1999).

According to Pereira (1999) one of the most interesting aspects of SAP implementation is how firms handle the process changes associated with this system. A major benefit of the software is its purported enablement of redesigned, highly integrated business processes. Simply put, the SAP system requires that companies design business processes to fit the software, not the other way round. Because the software is highly integrated and complex, it is difficult if not impossible to modify it substantially to support an existing set of company-specific processes. The SAP system allows a company to standardise its information systems and give employees in a re-engineered environment the data they need when they need it.

Chapter 3

THEORETICAL PERSPECTIVES

“Who is as the wise man? And who knoweth the interpretation of a thing? A man’s wisdom maketh his face to shine, and the boldness of his face shall be changed.” Eccles. 8:1(AKJV)

3.1 Theoretical Perspectives

The scientific method is a set of assumptions and procedures for knowledge acquisition that is consistent with scientific norms. Ontological, epistemological and methodological assumptions may be clustered in four main philosophical stances: (1) positivism, (2) realism, (3) critical theory, and (4) constructivism. Case study research is a versatile research strategy, because it can be aligned with these four stances. However, Researchers need to be aware, that these philosophical assumptions differ in terms of their focus on facts or value, in isolation or in relation to their context. Therefore, case study procedures for data collection and analysis as well as quality criteria differ equally. Statistical generalisation of factual measurement in particular, may be complemented with analytical generalisation of factual synthesis; factual triangulation may be replaced with value crystallisation; and factual validity and reliability criteria may be replaced with value trustworthiness and authenticity criteria (Morais, R, 2013).

This chapter seeks to understand the theoretical perspectives necessary for the implementation of an Enterprise Planning Software (ERP) such as Systems, Applications, and Productions in Data Processing (SAP), Benefits Realisation and Change Management in relation to maximising the organisational advantages to be gained from implementing an ERP technology. In contemporary organisations the philosophical antecedents of scientism and rational objectivism can be seen to persist. Dualism of physical and metaphysical aspects of the world historically, have allowed investigation of the concrete to flourish at the expense of the more intuitive and intangible aspects. Sociological predicates, carried this into the social arena and the scientific research culture persisted due to institutionalisation. The result is that super categories of meaning are embedded in the structures, systems and processes of organisations. These impact on research more than simply contextual phenomena but constrain emergence and produce conceptions. The need in business research to begin with

a defined business problem or issue is exacerbated by this. While it is possible to fulfil many of the requirements of symbolic interactionism, and to conduct generative qualitative research, the claim to grounded theory needs to be made on a case by case basis using researcher judgement (Whiteley, 2000). The term “grounded research” is an alternative which could be considered to grounded theory. The researcher will endeavour to apply this approach to the study.

The task addressed in this chapter is to set out a theoretical perspective that supports the understanding of an ERP implementation which has been successful, supported by a Benefits Realisation program in facilitating emerging and designed change. The chapter further seeks to assist in the understanding of assumptions of the theoretical model and of the findings of the research.

3.2 Ontology

The ontology of grounded theory method stretch back to the Mead-Blumer pragmatist view of what can be known, the roots which are related to and can be evaluated as leaning toward critical realism. Critical realism is prominent in symbolic interactionist ontology in the acceptance that the social and natural worlds have differing realities. Both forms of reality are probably apprehensible, albeit imperfectly. The classic grounded theory method is therefore based on symbolic interactionist ontology which reflects this critical realist view concerning the nature of a “real” reality. This is reinforced by the insistence of Glaser (1992, p 14), the preeminent contributor to grounded theory, that the classic mode focuses on “concepts of reality”, looking “for what is, not what might be”, (Glaser, 1992 p 67) while searching for “true meaning”, and that the generated grounded theory “really exists in the data” (Glaser, 1992, p 53).

A departure from underpinning grounded theory method exclusively in symbolic interactionism occurred with the work of Strauss and Corbin (1990a, 1990b, 1994) through the suggestion that a conditional matrix should be applied to data analysis. This ensures that the macrosocial factors need to be considered as possible conditions influencing social interaction. Therefore, it appears necessary to ascertain if an ontological shift has occurred with the move away from grounded theory’s theoretical roots.

Relativism is discernible on the insistence by Strauss and Corbin (1990a p.22) that a developed grounded theory is a rendition which is an interpretation of an unknown reality. Knowledge *per se* is linked closely with time, place and the enacting truth (Strauss and Corbin, 1994). Reality consists of local and specific constructed realities which are reflective of relativist ontology and which differ from a Blumerian view, which would maintain that time and place are social constructions but that the natural world has a reality apart from these constructions. Relativist ontology, with an emphasis on perspective, claims that reality exists only as a multiple mental constructions in maintaining that there is no differing social and natural world reality and that there is no “true state of affairs” to be apprehended probably, partially or otherwise, in the social or natural sciences. Truth is thus isolated to be prevailing consensus at any time regarding multiple perspectives of a phenomenon (Annells, 2013).

Ontology is derived from the Greek words “ontos” (being) and “logos” (theory or knowledge). (Heinemann Australian Dictionary, 1987 p. 731) It is a branch of metaphysics dealing with the essence of phenomena and the nature of their existence. Hence to consider the ontological status of something is to ask whether it is real or illusory. Here we are primarily concerned with the ontological status of social and natural reality.

A realist ontology assumes that social and natural reality exists independently of our cognitive structures: an extra-mental reality exists whether or not human beings can actually gain cognitive access to it. For example, things in themselves, the relationship between science and reality (Bhaskar, 1994, p 250).

A subjectivist ontology assumes that what we take to be external social and natural reality is merely a creation of our consciousness: reality is a protection of our cognitive structures with no independent status. In other words, the existence of Kant’s noumenal world is rejected – all that exists is the phenomenal world.

3.3 Epistemology

It is important to note that any theory or epistemology needs to be grounded rather than glossed over. Once saturation is attained, themes will start emerging and it is important that the changes that have occurred over the last 30 years are considered.

“An examination of the epistemological assumptions underlying various explications of grounded theory method also suggests some movement over the past 30 years. Noted is the opinion of Charmaz (1989, p 1171) that “grounded theory research analyses can be enriched by clarifying the researcher’s epistemological premises” and her warning regarding the potential to misuse grounded theory method if a researcher glosses over the epistemological assumptions of the method itself, especially if not fully appreciating the extant sociological theory from which it arose.”

The early statements of Glaser and Strauss (1967) proposing that research occurs in the real world (with phenomenological issues arising from such) presented a discernible post-positivist suggestion that the method is independent of the researcher and has separate existence. This can be identified as a modified objectivist epistemological view about the nature of the relationship between the knower and what can be known. Until recently, grounded theory method has appeared to lean more toward an objectivist orientation (Osborne, 1994). This has been fostered by classic mode directions such as Glaser’s procedural directions that explicitly lead the researcher toward the ideal “to come closer to objectivity” (Glaser, 1978, p 8).

More recent presentations of the method demonstrate a divergent movement toward subjectivist and transactional epistemology. Strauss (1987) clearly identified the researcher as being actively involved with the method and not separate to the method. This subjectivist orientation is also discernible from the insistence of Strauss and Corbin (1989) that researchers using this method should draw on their experiential knowledge to collect data, for suggesting hypotheses, when analysing data, and more recently recognizing that “the analyst is also a crucially significant interactant” in the research process (Strauss & Corbin, 1994 p. 278). Due to these contributions, it was increasingly recognised that grounded theorists were not demonstrating congruent epistemological premises for research (Charmaz, 1989).

The distinction between ontological and epistemological issues is an important one, and one that can be difficult to keep apart conceptually (Crotty, 1998). Some theorists, like Guba and Lincoln (1998) suggest that one's ontological view determines one's epistemological stance, as a part of a set of basic beliefs. However, it is not sufficient to be acquainted with an ontology to know its accompanying epistemology. An ontology based on realism is compatible with not just an objectivist epistemology, as posited by Guba and Lincoln (1998) but also a constructionist one (Crotty, 1998). So discussion of a real view must cover both ontological and epistemological considerations. One of the major ontological questions that philosophers have had to confront during the last few hundred years has been the debate between realism, the notion that reality exists outside the mind (Crotty, 1998) and idealism.

In the physical sciences, realism has traditionally been an axiom. Because it is taken for granted, physical scientists can progress with their research into the nature of reality without the need to start from first principles (Kuhn, 1962). In the social sciences, there is no such broad agreement on a paradigm. At the outset of many social science reports, space is allocated to the epistemological and/or ontological assumptions that inform the structure and techniques used in the study. Their philosophical underpinnings also directly influence the way the research is evaluated, because the outcomes of the research will reflect the opinions and experiences that underlie the methodology. In the case of this study, it is therefore advantageous if the same experiences that communicate ERP implementations are used as the basis for research.

The critical realism ontology has epistemological implications that are important for ERP/SAP users. Perhaps the most important is that meaning is to be found in the relationships in the real world, and is not something merely constructed. By exploring the real world, people gain understanding of it.

However, to understand this in critical realism, the notion of perspective needs to be introduced. Each person apprehends reality from a different point of view. To illustrate this, Bertrand Russell used the example of a table covered by a table cloth. If the table is completely covered by the table cloth we receive no sense data from it. How, then, do we know it is there or what it is? (Russell, 1912). People sitting around the table all see things from slightly different points of view, and so see something slightly different. Russell's concern was to identify the universal aspects that enabled individuals to agree that an object

was a table. However, for the critical realist, the properties that result in the identification of the table are emergent – and different aspects may be recognised by different people with different experiences in society (Russell, 1912).

This, however, seems to rectify the problem: emergence needs an interpretative agent. For a framework to understanding this, it is helpful to turn to the hermeneutics of Gadamer. For Gadamer (1989) understanding was obtained through language, in its broadest sense of expression, including both its descriptive and evocative aspects.

Gadamer (1989) emphasised the importance of what he called prejudices or people's past experience and tradition, in determining understanding. People drew on their experience and traditions to fill in gaps to round out their perception of an object at hand. Through this historically effected consciousness, science could penetrate beyond the empirical to the unseen, such as sub-atomic physics, microbiology and aspects of astronomy/cosmology, an idea that resonated with critical realism.

There is a relationship between a person and what he or she is trying to understand. What was understood from, e.g., a text, would not be the same as what was intended to be conveyed, because it would be comprehended from the perspective of the reader/listener. Because of this, views of the world were subjective, but by communicating people shared the horizons of their perceptions and broadened their knowledge (Gadamer, 1989). Furthermore, knowledge and understanding were in a continual state of flux, as communication altered understanding and consequently perspective.

Madison (2001) concluded that, for Gadamer, understanding was an interpretive process and truth and meaning were essentially relative, a shared understanding arrived at by exchange of opinions. Knowledge is therefore seen to be tentative, but adaptive (Fettes, 1999). What is held to be true may be negated by new evidence in the future. Each person's perceptions are limited by space, time and experience, and it becomes a nonsense for any individual or group to aspire to seek some sort of unbounded universal or total truth. The best we can do is broadening of our perspective by sharing.

This is a short selection of ideas from Gadamer's hermeneutics, and, it is compatible with a critical realist ontology, as an understanding of meaning that is relativist, not the concept of

reality. It provides an epistemological framework and this is sufficient for the understanding of an ERP/SAP implementation.

3.4 Methodological possibilities

Present variations in ontology and epistemology are causing methodological ramifications. When analysing the literature on grounded theory, the methodological question involves “the stance concerning how the inquirer should go about finding out what is believed can be known” (Guba and Lincoln, 1994). It is evident that the critical realist objectivity meaning of the classic mode, as first presented by Glaser and Strauss (1967), values the emic viewpoint. This grounds theory discovery and generation in a detailed qualitative research process rather than logico-deductive a priori assumptions, which comprise the first step of positivist research.

When defending the classic method of grounded theory generation, Glaser (1992) clearly presented that the systematic generation of grounded theory should be viewed in a relational sequence to verificational research with the ultimate aim of both being the consolidation of scientific facts. Furthermore, Glaser (1992) stated that if generated theory has the potential for “high impact on resolving the main concern of the participants, then a verificational study an experiment or survey can be made to verify its true import” (p.105). Emphasising this stance on the value of emic viewpoints to generate a theory, the supposed accumulation of knowledge, and an acceptance of verificational research (or Popperian-type falsificationism discussed further in section 3.8) is indicative of the classic mode’s postpositivist methodological view as to how the inquirer should find out what can be known.

Munhall and Oiler (1986) also placed the generation of grounded theory within a first level of scientific activity, which they see as leading to correlational or hypothesis-testing research. According to this view, grounded theory method can be an early step in a hierarchy of research approaches to theory development. This view supports the usefulness of translating grounded theory directly to practice if “fit” occurs (Glaser, 1978, 1992; Glaser & Strauss, 1967).

Guba and Lincoln (1989) considered grounded theory research as dealing with verification as well as discovery, an opinion identified by Strauss and Corbin (1994). Verified substantive theory that emerges from grounded theory research should provide a framework for action with a necessary practical application (Strauss & Corbin, 1990a, 1994). However, they do not use the term verified in the positivist sense where a statistical test of probability determines a verification concerning the capturing of “reality”. Neither does it relate to the attempted falsification of null hypotheses in the post-positivist sense. Rather, the steps within the constant comparative data analysis offer a verification, as conducted “throughout the course of a research project, rather than assuming that verification is possible only through follow-up quantitative research” (Strauss & Corbin, 1994, p. 274).

This represents a distinctive philosophical underpinning for a nonempiricist and nonpositivist account of natural science, and potentially a parallel account of social science. For critical realists, however, a unified view of science is tempered by attention to the particular properties of the realms of reality addressed by specific sciences. Two properties of the social sciences are of particular importance. Firstly, all human actors operate as characters with differing accounts of the social world that they inhabit; requiring a necessarily reflexive means. Therefore, experimentation as system closure makes the isolation of causal mechanisms/reasons more problematical in the social realm. This second feature, especially, leads to debate about the scope and limits of social science, due largely to the subjective nature of human experiences.

Critical realists are nevertheless united in two key features of their approach to social science, arising from their non-empiricist and stratified conception of social reality. Firstly, hermeneutic understanding of the meanings humans attribute to their activities is an essential but not sufficient feature of social science. Secondly, social structures are characterised by real powers and effects, though these structures are often unobservable. An influential development of these arguments is Archer’s (1998) insistence on the duality of structure and agency. Structures of social relations are not merely epiphenomena of social interaction, but have distinctive emergent and enduring properties that will constrain or enable different lines of action, although these properties may then be modified by ensuing individual or collective action.

Similarly, cultural discourses have their own emergent properties, but these must be assessed in terms of their interplay with structures of social relations and lines of reflexive action, rather than becoming the sole focus of analysis. Furthermore, such assessments of the interplay of structures, cultures, and their agential mediation require ontological depth. They need to address the ways in which agency is constrained and enabled by existing structures, which necessarily involves attention to temporality, to the role of precursor conditions and sequences of development (Elger, 2004).

Much of the advocacy of critical realism has remained at a high level of abstraction. Philosophers and social theorists have provided generic statements about this approach to analysis and explanation in the social sciences, but have rarely considered the implications for specific styles of social research. Nevertheless, growing numbers of researchers have found the programmatic stance of critical realism attractive because it offers a warrant for existing research approaches that do not conform to either positivist or social constructionist protocols (Elger, 2004).

Some recent discussions have addressed the implications of critical realism for different approaches to social research. Some commentators have identified specific affinities between critical realism and case study research, but others suggest case studies represent only one among a range of appropriate research designs. There is nevertheless widespread agreement that critical realism does not simply underwrite existing research designs and forms of analysis, but encourages their reappraisal and refinement in the light of its precepts (Mills et.al, 2010).

Even among critical realists there are important differences of position. Some are more optimistic and some more pessimistic about the scope for an explanatory social science. Writers also disagree about the character and implications of the critique implied by the term critical realism. But it is widely recognized that the work of Roy Bhaskar has been foundational in establishing and developing the implications of this distinctive approach to the philosophy science (Elger, 2004).

Bhaskar's early work concentrated on challenging empiricist and positivist accounts of the procedures and discoveries of natural science, and through extension challenged such approaches with social science. Key arguments focused on the theory-laden (not theory-

determined) character of observation and the inappropriateness of constant conjunction as a criterion for causality. These arguments suggested that the relationship between natural reality and scientific knowledge involved a stratified ontology marked by distinctions between the real, the actual, and the empirical (Elger, 2004).

While the “real” involves the underlying causal properties and powers of nature, the “actual” involves the particular ways in which these powers are expressed as they are triggered by particular conditions or as causal mechanisms interact. (Elger, 2004, p.1) Thus causal powers may not be triggered, so “exist unexercised,” or such powers may be disrupted, “exercised unactualised” (or in modified form). Since the outcomes of causal mechanisms may not be registered by observers (i.e., as the “empirical”). they may also be “actualised unperceived.” According to Elger (2004) these arguments frame a distinctive account of scientific experiments as efforts to isolate the operation of particular “causal mechanisms” by controlling the contexts within which they can operate. This is coupled with a sharp distinction between the system closure that may be achieved by experimentation and the open systems within which natural mechanisms typically operate.

Yet Strauss and Corbin stated that “doing analysis is, in fact, making interpretations” (1990a p.59). Elsewhere these authors argue that these interpretations must be based on “multiple perspectives” (Strauss & Corbin, 1994, p. 280). which, being embedded in the historical moment, are always only provisional. It could be suggested that these interpretations provide contrast and comparison between existing individual constructions regarding the inquiry focus, therefore apparently moving toward the dialectical constructivist answer to how should the inquirer go about finding out knowledge. Knowledge is created. Hence, a grounded theory supposedly verified during the research process by the Strauss and Corbin evolutionary mode can be seen to be producing local and specific constructed realities in the relativistic ontological sense.

Patton (1990) preferred a pragmatic approach to research that ignored issues of theoretical perspective. He was concerned that “pragmatic blinders” and routine ways of thinking locked researchers into “unconscious patterns of perception and behaviour,” resulting in biased and predetermined courses of action (1990, p. 21). Rather than basing methodology on ontological and epistemological frameworks, he preferred methodological appropriateness as the criterion of choice, choosing the method to suit the situation. Nevertheless, while this

may be an acceptable approach to methodology, one cannot avoid the theoretical perspective. Whatever methodological paths are taken, there will be assumptions that arise from and are embedded in the researcher's world view. As Cassell and Symon (1994) have pointed out, these assumptions affect what and how techniques are used and how the data are interpreted.

The task addressed in this chapter is to set out a theoretical perspective that aids the understanding for an ERP implementation.

3.5 Methodological Consequences

While the world view appears compatible with the application of SAP, it is also appropriate to consider its implications for the research methodology. In particular what does the world view tell us about the type of knowledge that is the goal of the research?

An important epistemological distinction that arises from the realism/ idealism issue is the objectivity and subjectivity of knowledge. In this section, the notion of objectivity is discussed and it is demonstrated that within a critical realist framework the notions of objectivity and subjectivity are simply different ends of the same conceptual continuum.

In the critical realist-based philosophy, meaning lies in the world around us and what we discover of it is based on our experiences of events and their underlying tendencies or mechanisms. Knowledge therefore requires a relationship between the individual and the world of which he or she is part. Understanding depends on the perspective of the individual, which is affected by cultural contextual factors such as his or her experience, history, and traditions. This precludes one notion of objectivity, value-free knowledge (Kirk and Miller, 1986). as a goal for research in this world view.

Facts are transitive and exist in the actual and/or empirical domain, but are dependent on tendencies and mechanisms that exist in the real domain (Bhaskar, 1989). This idea of ontological stratification applies in the natural world too, with relations of dependence and effect between strata (Collier, 1994). Bhaskar (1989) comments that laws or tendencies are transfactual, meaning that they apply regardless of what are perceived as facts.

Dey (1993) indicated that interpretation should not be at odds with what actually happened. If interpretations were treated as purely subjective with the possibility of error eliminated, this would be untenable and render research useless. Research outcomes need to be well grounded conceptually and empirically so that they are sound and defensible.

Following this idea, research outcomes that are backed by robust empirical and logical evidence are likely to be considered more soundly based than mere hunches, particularly for higher level concepts. This is because the transparency and breadth of the arguments makes them more open to scrutiny and potential refutation or modification.

3.6 Critical Realism

Critical realism provides a distinctive account of the bases of the natural and social sciences, challenging versions of empiricism and positivism but also offering an alternative to social constructionist and postmodernist accounts of the social. Thus it represents a distinctive approach to the ontological and epistemological underpinnings of social research, rejecting the polarised terms of much debate between these positions. In particular, it combines an ontological insistence on the existence of objective natural and social realities with recognition of the social construction and relationship between what is and what ought to be, rather than their stark separation. This often underpins an orientation to possibilities for social transformation; although those critical realists most cautious about the analysis of complex open social systems may be hesitant about the critical and transformative capacity of social science (Mills et al, 2010).

For Bhaskar, on whose work critical realism is founded, this did not deny the existence of socially constructed reality, which was all around us (Bhaskar, 2000). However, although social reality is constructed, it is not merely socially constructed, but exists independently of each of us. Ackroyd and Fleetwood (2000) argued that it was dependent on concepts, but not determined by concepts. For example, social relations can be easily recognisable by people who have no prior knowledge of them. Themes are an example of a socially constructed reality. They are just a group of stories, built from extant tacit knowledge and based on driving forces by the ERP trends that are perceived in the organisational environment.

They are constructed using real external world phenomena, as perceived by the participants, and their effects are assessed using real world criteria. Once constructed, they have an existence independent of the people who created them. On this view, the notion of reality as constructs, as posited in constructivism – or it is more social relation, social constructionism – may be seen as a necessity. It seems something more than mere construction is needed in ontology for an ERP implementation. Futurists, generally subscribe to a critical realist outlook on the world (Bell, 1997; van der Heijden, 2000).

Realism is a theory, not of knowledge or truth, but of the nature of being. As such it has an ontological rather than an epistemological status (Bhaskar, 1989). In the philosophy of science, Bhaskar argued that the objects of our knowledge and of our experiments could only be intelligible if they existed and acted independently of the patterns of events they generated. Furthermore, this was applicable to both the physical and social sciences.

Causal laws must be analysed as tendencies or mechanisms, only empirically invariant under relatively closed conditions. Tendencies may be exercised or not and may be realised perceived or not by people (Partington, 2000). The concept is essentially relational; whether a tendency is realised depends on the relationship or interplay between things (Collier, 1994).

The concept of tendencies is better understood with a comprehension of Bhaskar's notion of transcendental realism. This appears to be in direct contrast to Kant's influential theory that people have no insight into the transcendent, and can only know things in forms as they appear to them, not the properties of the things themselves (Tarnas, 1991). The influence of the Kantian concept of transcendental idealism can be seen in the development of phenomenology and in post-modern constructivism, particularly in the denial of a real world because it cannot be known.

Transcendental realism, by contrast, admits of a domain of reality that, while it cannot be known directly or empirically, can be known through relationships, such as cause and effect. The comparatively new concepts of string theory in subatomic physics are an example of this, as are aspects of microbiology and astronomy/cosmology – direct empirical evidence is impossible but through examination of the relationships, science can penetrate beyond the empirical to the unseen and the theory can be inferred (Collier, 1994).

3.7 Critical Realism and Social Research

These general ontological claims about the character of the social furnish grounds for rejecting positivist, social constructionist, and postmodernist rationales for social research. But critical realists make a strong distinction between such transcendental statements about key ontological features of social reality and the necessary fallible character of particular epistemologically grounded knowledge claims about specific features of the social world, including particular causal mechanisms and their combined effects. An adequate social science must be premised upon a search for social, cultural and agential entities with specific causal powers, coupled with recognition that such powers will operate in a mediated and cumulatively interactive fashion as they constitute open and evolving configurations. The elucidation of such entities, powers and interactions is inevitably provisional, but cannot be grounded in empiricist induction or covering law deduction (i.e. where an event is explained through deduction from a more general law and initial conditions). Instead it must be developed through a theoretically guided engagement with theoretically salient findings.

What, then, are the implications of these methodological guidelines for specific styles of research or research design? Firstly, much quantitative and survey research is constructed and justified in terms of positivist protocols that are attacked by critical realists. Statistical regularities are often treated as qualified forms of constant conjunction and theorised in terms of covering laws, while surveys often provide little evidence about contextualization or temporal sequencing. Meanwhile, case studies are relegated to a subsidiary exploratory role, subordinated to the requirements of a statistical generalisation from large data sets (Mills et al, 2010).

Qualitative and ethnographic research is often strong on contextualisation and temporal sequencing while repudiating a search for covering laws. Such research is usually conducted under the auspices of social constructionist or postmodern theorising, but critical realists dispute this one-sided focus on actors' interpretations or cultural discourses and their relativist disregard for the differential adequacy of contending explanations, which impoverishes the analytical and explanatory scope of case studies. When qualitative and ethnographic researchers are guided by critical realism, they endeavour to conduct that research in ways that overcome such limitations (Elger, 2004).

Critical realism therefore contests the polarised debate between positivism and constructivism as philosophies of social science. Critical realist reassessments of qualitative methods are compatible with an explicitly mixed methods approach to social research. They set some quite stringent criteria for assessing the adequacy of specific research designs. These emphasise explicit theorising, identification of causal processes, appropriate contextualisation, attention to temporal sequencing and interaction effects, and critical contextualisation of actors' accounts (Elger, 2004).

The critical realist ontology incorporates three overlapping levels or domains namely

1. experiences or observed events
2. actual domains
3. real domains

In the empirical domain, these are experiences or observed events. In the actual domain are events, both observed and unobserved. In the real domain are events, as well as the underlying tendencies or mechanisms, which include the laws of nature.

In closed systems such as scientific experiments, general laws or tendencies can be identified that operate within limits or boundaries, which is what allows science to produce predictive theories. Limits or boundaries may be spatial, geographical, dimensional, or a host of other properties, and are frequently epistemological. Unlike the closed boundaries that delimit the scientific generalisation, social structures are open to extraneous influences, so that cause/effect relationships are multiple, complex, interdependent and often indeterminate (Bhaskar, 1986).

Furthermore, although society would not exist without the constituent individuals, there is more to society than the sum of the concepts of the individuals the whole is greater than the sum of its parts, just as an army was something different from the sum of its soldiers. Bhaskar (1989) sought for an explanation of society in terms of the relationships between people and the phenomenon of intentionality that characterises human action. In providing some pragmatic examples he explained that the reason that the city council called for the collection of garbage was not necessarily the same as the motives of the garbage collector. Further to this, he considered that the motives of the garbage collector (e.g., to earn money) could have

other outcomes (e.g. another job). There were multiple causes or tendencies that resulted in the emergent phenomenon of rubbish collection, and some could have had alternative outcomes. The social structure was not identical to and existed before and continued after the participation of individuals in it, even though it was continuously changing and may be affected by the action of any individual in it. Bhaskar (1989) considered that society was a complex totality subject to transformation both in its components and their interrelationships. Although it cannot exist without its individuals, it can usually exist without any single or group of individuals, albeit sometimes in a transformed state. In line with this perspective, Porter (2000) argues that social structures can only be identified through their effects. As a consequence people can be considered causal agents, conscious participants capable of altering society (Manicas, 1998).

3.8 Application

Critical realism values several features of case study research design including the investigation of actors' discourses and negotiated meanings; concern to set specific social processes in context, both within and surrounding the case; and attention to the sequencing and dynamics of social processes over time. Nevertheless, critical realism contains other features with disputed currency including willingness to deploy mixed methods of data collection and analysis; reliance on explicit theorising to draw out the wider implications of specific case studies; and critical engagement with the limiting as well as penetrating features of actors' accounts. Together these features explain why critical realists take case studies seriously and why case study researchers appear increasingly attracted to critical realism.

Critical realism provides a programmatic alternative to several other philosophies of social science, combining an ontology that recognises the existence of stratified social mechanisms with distinct effects and a theoretically led, nonempiricist account of knowledge production. As discussed, this approach opposes the traditional dichotomies of positivist and constructionist epistemologies. The concern is to explain social phenomena (events and experiences) in terms of the causal powers of particular social mechanisms and their complex interaction in specific contexts has important affinities with some traditions of case study research. However, the implications of this affinity for a distinctively critical realist conception of case study research remain underdeveloped and are only now being discussed.

3.9 Limits of Knowledge

Because social systems are only manifested in open conditions, they cannot be the subject of predictive theories. Therefore theories in the social sciences must be explanatory, and will be confirmed or rejected on that basis. A theory may be developed in a non-ad hoc way to situate and explain a possibility, once, or even before, it is realised, but it can never predict it. Confidence in subjective explanatory criteria, if there are independently validated claims, is just as warranted as the theories of natural science. (Bhaskar, 1989) Social science theory can be tested empirically, but only with reference to its explanatory power, not as a prediction. This requires a modification of Popper's (1968) concept of "falsifiability", by which theoretical constructs are subject to empirical examination, testing and potential refutation (Collier, 1994).

In both social and natural sciences, knowledge, or what we hold to be true, is always bounded. As the boundaries of experimentation and theory have been extended, physical laws that were thought to operate universally have been found to have limits. "Newton, please forgive me," an anecdotal account of what Einstein was reputed to have said as he developed the theory of relativity that overrode the established concepts of absolutes in time. In social research, knowledge may be limited to the cases studied and comparisons or relationships drawn with other similar research.

Furthermore, in critical realism there is the implication that reality is both being and becoming and objects or processes can have apparently contradictory properties. Physical features endure, and yet are also in a constant state of change. Social institutions may be less enduring, and subject to greater flux. Concepts of the properties of stasis or kinesis are a matter of perspective – for example, the solid enduring structures of The Vatican and the mighty Mt. Snowdon are, at a sub-atomic level, seething with change. A consequence of this is that something can be true and false at the same time, depending on one's perspective. Putting your cold foot into a warm bath will result in a perception that the bath is too hot for you. But someone taking his or her foot out of a warm slipper and putting it into the same bath may feel it is just the right temperature. Both are equally valid, depending on perspective, which in turn is affected by Gadamerian prejudice (Gadamer, 1989).

It is from the notion of an external reality existing independent of our consciousness that the realisation follows that much of what we hold to be true depends on our perspective and our assumptions. With this realisation, knowledge becomes a voyage of discovery and emergence from the world around us rather than merely of the creation of constructs, and objectivity becomes a concept relating not to universality but to a shared understanding that carries a risk of falsifiability (Kirk and Miller, 1986) or modification. The limitations are important in deciding methodology and designing method, both for research and for scenario planning, because they assist in defining the types of knowledge that is being sought.

3.10 Summary of theoretical perspective

The world view based on critical realism and hermeneutics has been shown to be compatible with and will provide an appropriate framework for understanding the application of ERP/SAP. Meaning is emergent in a real, dynamic world and understanding is subjective. Each individual viewpoint may have validity from a particular perspective but will most likely contain similarities, differences, subtleties and complexities when compared with others.

ERP is designed to be a system/tool by which their perspectives can be shared and the people in the organisation arrive at a broader understanding. Through combined perspectives, change in the organisational culture may occur. In the undertaking of ERP/SAP, there should be an acceptance of the fallibility of current assumptions and beliefs and the co-existence of permanence and change.

Pierre Wack, in his influential 1985 articles, came to the view that, by learning to re-perceive their environment, managers could begin to see the relevance of information that otherwise would go un-noticed because they failed to see its significance. (Wack, 1985b) The world view that has been highlighted in this chapter provides a framework for understanding the assumptions and processes that underlie this view of management.

The discussion has also included epistemological considerations that reveal the type of knowledge that is sought both for ERP/SAP implementations and forms the basis for the adopted methodological framework for the research outlined in the following chapter.

Chapter 4

RESEARCH METHODOLOGY

“Happy is the man that findeth wisdom, and the man that getteth understanding.” Prov. 3:13(AKJV)

4.1 Research Methodology

As this study is aimed at exploring experiences and the perceptions of participants about the implementation of SAP, Benefits Realisation and its effects on organisational change, an exploratory qualitative approach was considered to be more appropriate than a quantitative methodology. The methodology was developed in the context of the Grounded Research theory. This chapter looks at research methodology, and “the fit” between information systems features and the organisational context. It does so by examining the significance, the business case, approach to findings of the study, the research paradigm and research process, data collection and sample.

The research adopts a grounded research approach. Whitley et al (2002) presents grounded research as an alternative to the grounded theory. Grounded Research is a modified grounded theory for the business setting with the inclusion of interpretative theory based upon responded data. The philosophical antecedents of scientism and rational objectivity are present in contemporary organisation taking into account that organisations possess sub-categories of meaning embedded in their structures, systems and processes. These impact on research, constrain emergence and produce preconceptions. This is exacerbated by the need in business research to begin with a defined business problem or issue e.g. in this study “**How have the organisations implemented and utilised SAP-IT?**” Therefore, while it is possible to generate qualitative research, and to fulfil many of the requirements of Mead-Blumer pragmatism (or symbolic interactionism) the claim to be undertaking a grounded approach needs to be made on a case by case basis using researcher judgement. The researcher’s stance is that grounded theory and grounded research include similar approaches and hence the essence of a grounded approach could be utilised/applied relevantly and realistically in this qualitative research.

This study researches a successful SAP implementation in the Water Corporation, WA and WestNet Group Infrastructure WA exploring the factors that determine success or failure. A

qualitative study using grounded research in a business setting will look at what benefits are realised and how changes occurred as a consequence of implementing SAP and initiating a benefit realisation program. Results of these two utility enterprises will then be compared and contrasted.

A possible outcome of this study will be the realising of benefits that could recur both annually and longer term as well as reflecting significant changes occurring as a result of an integrated approach. This integrated approach would account for economic, technical, human and organisational facets of change in both the Water Corporation and WestNet Group Infrastructure.

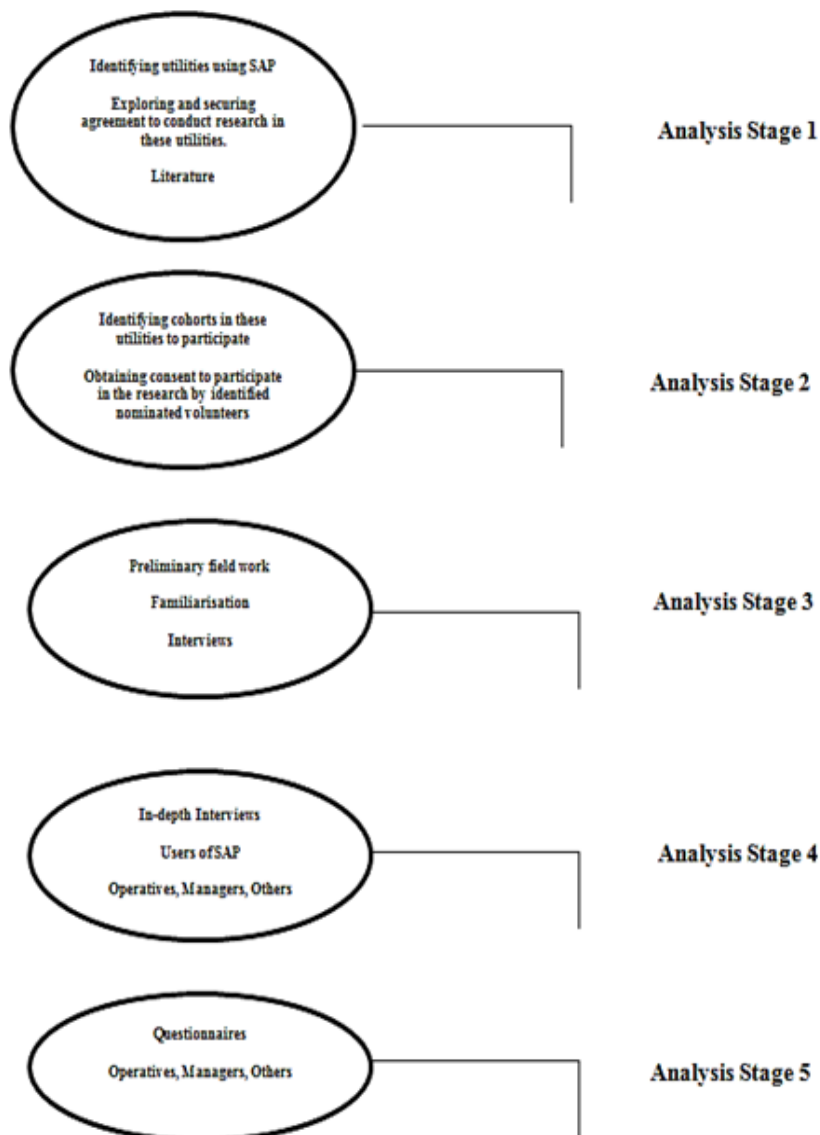


Figure 4.1. 5 Stage Approach adopted in the study

Source: Blick, G, 2012

4.2 Fit between information systems features and the organisational context

Central to understanding the interaction of the information system with its original context is the concept of “fit”. The organisation, its strategy, its business processes, its environment is intuitively appealing. Hong and Kim (2002) identified critical success factors of ERP implementation in terms of “organisational fit of ERP” and “contingency variables”. Based on a cross-sectional survey the authors concluded that ERP implementation success significantly depends on the organisational fit of ERP and certain contingency variables. Systems that do not fit political dynamics (Markus, 1983), managerial assumptions (Zuboff, 1988), users of cognitive technology frames (Orlikowski & Gash, 1994) or users incentives (Markus & Keil, 1994) are likely to be revisited (DeLuca, 1993), underused, misused, and/or actively sabotaged. This suggests that organisations wishing to introduce new systems conduct a careful diagnosis of users and their needs, prior to systems development, to produce a system that fits well enough to promote positive effects, system successes, and the notion of benefits realisation.

The Business Process Re-engineering approach (Davenport, 1993), (Hammer & Champy, 1993) was developed precisely to address the tension between the need for fit and the need for change. Elsewhere, Hammer (1990) has argued that systems developers have for years sought fit at the expense of change by “automating” flawed business processes, rather than re-engineering them. In so doing, they have merely “paved over the cowpaths”, providing, at best, incremental improvements. Re-engineering aims to accomplish radical improvements by complete redesign of the business process suggested and enabled by the use of information technology. This will also support the realisation of benefits both tangible and intangible.

4.3 Significance

Information technology is capable not only of enabling a new economic infrastructure for industry, but also of transforming society - how people work, shop, play and go to school (Thorp, 1998). This could be an example of the realisation of benefits from the application of technology at a personal level.

The expected long-term impact of information technology supported by benefits realisation will make a contribution through a unique benefits realisation process that has been practised, is highly successful and which could make a significant contribution to the literature.

From the practical perspective it is expected that a better understanding of the approach to realising benefits for business and organisations will follow and that a framework will assist users of SAP to successfully implement a Benefits Realisation methodology in business and in particular utilities. In addition this study will provide users with an opportunity to find out how to use ERP technology, specifically SAP as an enabler for change.

4.4 The Water Corporation Business case for SAP

The “Systems 2000 Project” of the Water Corporation prepared a business case for SAP. It included a detailed cost justification for the implementation of all of the functionalities of SAP.

The Case was built around a structure identifying the major sources of costs and benefits from implementing SAP as the Corporation’s information system (over a life of 8 years). SAP Implementation and Ongoing Costs (Costs), net of Avoided Legacy System Costs (Avoided Costs) are subtracted from the Process Improvement Benefits (Benefits) resulting from the SAP implementation, to reach the Net Savings. The Costs, Avoided Costs and Benefits were analysed using accepted The Water Corporation investment financial models to form the basis for decision-making (assistance was sought from the “Commercial Division” of the Water Corporation vetting all models and assumptions used).

There were assumptions behind each primary area’s Costs, Avoided Costs and Benefits, which were detailed in the full report. (The Water Corporation, 1997b) For example, one important assumption was the implementation timeline used in the business case was subject to adjustments that will affect the timing of costs. To cater for such uncertainties a contingency was included in the project budget.

The results from the business case indicated an after-tax Net Present Value (NPV) of AUD 22.01 million based on Costs of AUD 39.76 million over an eight year period. The NPV equated to an internal rate of return of 33 per cent and investment payback in three years. Most of the Costs would occur during the initial two years of implementation and were more than offset by the benefits resulting from implementation of SAP in the following years. Internal and consulting resources accounted for 66 per cent of the one-off Costs. Other ongoing costs such as annual licence fees and configuration and application development (ABAP) support were also a significant component of total costs. The main Avoided Costs related to not having to repair

existing systems, including financials. The two areas with the largest percentage of total Benefits were Projects (Capital Works) 44 per cent and Finance 23 per cent.

This report recommended that the Water Corporation proceed with the SAP implementation based not only on the quantifiable benefits, but also the qualitative benefits that may accrue. Such qualitative items included improved organisational decision-making; improved issue resolution through system integration and user-friendliness; and, enhanced service to external and internal customers. The initiative was in alignment with the Corporation's strategic information technology plan (called the CIMS) and would tightly integrate information within the firm's mission-critical and reporting functions.

The qualitative benefits that had been identified in CIMS emerged as substantive categories and significant themes from the data analysed. In particular, these themes included improved organisational decision making, user friendliness, integration and enhanced customer service. This suggests that the pre-implementation planning by the Water Corporation in particular was appropriate. There were additional themes that also emerged and which are identified later in this chapter.

4.5 Benefit Realisation Structure

Services of Deloitte ICS consulting were used to implement the operational aspects of SAP. However, to reap maximum benefit what was required was a culture-shift and associated behavioural changes in the corporation's management and staff. As discussed previously, it is this supporting program of cultural change that will ultimately ensure the realisation and continuous reinforcement of the benefits identified for each of the process streams. SAP alone will deliver only a fraction of the benefits identified if the implementation is not complemented by vigorous executive leadership. Fundamental cultural changes are required to bring about a commercially aware and operationally astute the Water Corporation of the future.

The requirement for a cultural shift and associated behavioural changes in the Corporations' management and staff, identified in the review by Deloitte ICS, became apparent as it emerged as a significant theme from the data collected and analysed. This situation also arose in WestNet Group Infrastructure. The data suggests that the Water Corporation was endeavouring to shift into a more commercially viable Government Business enterprise whilst WestNet group Infrastructure

was moving to combine a number of businesses into a single entity using SAP as a facilitator to accommodate the different requirements.

A project management approach was therefore undertaken to implement SAP. In the Water Corporation's case a formal project was defined for SAP implementation and within this project a "Benefit Realisation Strategy and Realisation Process" was considered to be a critical factor in order to deal with the change management process and thus maximise the implementation prospects of SAP. It was also recognised that the benefits identified for the business case would need refining and discussion on "redesign" of the business process was ongoing as the impact of the new processes became more clearly understood. In other words benefit realisation for SAP is not static, it is very much dynamic. The end users must be aware of the benefits of SAP in a formal and ongoing way.

The Water Corporation's (WC) structured, well thought through and well planned approach appears quite strategic by contrast to the approach undertaken by WestNet Group Infrastructure (WNGI). WestNet Group Infrastructure appeared to have a requirement to meet an operational imperative which was a consequence of inheriting a number of SAP systems from Alinta Gas before its takeover by Babcock and Brown and other company additions which are now part of WNGI in WA. It seemed that all the existing systems and information were cobbled together with the acquisition of SAP EC66 in order to provide the best operational IT service for all of its sub-companies. This appeared to be the mandate given to the project team led by the Manager Application, WestNet Group Infrastructure. Access to a business case was not provided and so in this regard a direct comparison with that of the Water Corporation is difficult to make. The Water Corporation had a pre-implementation, implementation and post implementation plan. The researcher was unable to discern if WestNet Group Infrastructure had a similar approach. However, without concrete information, it appears that the approach adopted was to piggy back off an implementation template, purchased from another utility. There is evidence that such a template was purchased from Shared Services, Power Corporation in Melbourne and provided WNGI the facility to fast track the implementation of SAP into their organisation. Twenty six million dollars has been expended on the project, the majority of which was spent on servers and other IT infrastructure as part of the implementation. The researcher was not granted access to the template for contractual and commercial-in-confidence reasons. Although it was understood in informal discussions, that around AUD 9 million dollars had been spent on SAP alone. By contrast, The Water Corporation expended AUD 42 million dollars on its SAP project.

As discussed, The Water Corporation had a formal Benefits Realisation Program in place as part of the business case. WNGI lacked a similar approach but carried out a project implementation review after each project was concluded.

There were five major aspects that contribute to the study approach: Identification of utilities using SAP, identifying cohorts, preliminary fieldwork, in-depth interviews, and questionnaires (See Figure 4.1 p 57)

4.6 The Research Paradigm

The Research Paradigm uses Grounded Research as the method of research (Whiteley 2000). The central idea is to discover the meaning without bringing any preconceptions to the task (Glaser & Strauss 1967). The approach will be to keep discovering and generating theory in a systematic yet emergent way. Whiteley (2000) argues that Grounded Research is for the discovery of concepts and hypotheses, not for testing or replicating them. The researcher has to be continually coding, comparing, analysing and memorising while asking of the data what category or property of category is indicated (Glaser & Strauss 1967).

The primary purpose of this study is to develop a framework of Benefits Realisation and change that is based upon research guided by the principal research question, **“How have the Water Corporation of WA and WestNet Group Infrastructure WA implemented and utilised SAP-IT?”** For the purposes of this study, grounded research is defined as theory generated from data systematically obtained and analysed through the constant comparative method (Conrad 1978). The primary purpose of this study is to develop a framework of Benefits Realisation change that is based upon research guided by three major research questions in chapter 1, p.3. These include: Generation or co-creation which is purposeful interaction towards the changed environment on the basis of meaning for reconstructing from symbols/words. The product may be a hybrid combining the strengths of generation or co-creation, or it could be a totally new approach grown from the rethinking of the players from both perspectives (Whiteley et al, 2000). This approach may be significant in sustaining and supporting the findings in another utility.

The type of methods to be used in this study include:

1. Observation
2. In-depth interviews
3. Review of old documentation
4. Survey
5. Ontological, Epistemological, and Methodological Choices

As discussed in the previous chapter, the constructivist ontology is predicated upon multiple perceived and intangible "realities". An interpretive epistemology study requires the researcher to adopt an insider role, be interview-subjective, interpersonal and could bring value to the research activity. Methodologically, a constructivist study will employ a qualitative methodology of authenticity, relevance and contextual applicability. It is argued that a constructivist ontology, interpretivist epistemology and qualitative methodology will facilitate the discovery of both tangible and intangible benefits in the Benefit Realisation process.

Practical Perspective

The Information Technology (IT) Interaction model (Silver, Markus & Beath, 1995) rests on the premise that the consequences of Information Systems in organisations follow from the interaction of the technology with the organisation and its environment. Understanding the nature of this interaction, therefore, is central to leveraging the benefits for organisations and this will help to determine how successful was the approach adopted by the Water Corporation. This information will then be used to compare/contrast findings for WNGI. A Benefit Realisation Strategy is predicted to be a key factor in the successful implementation of SAP.

4.7 Data Collection

4.7.1 Sample Selection

The sample will be determined in two phases. Preliminary interviews will be conducted in with managers to determine the appropriate ongoing sample for study. The sample will be selected in line with the protocols established by Strauss and Corbin (1990) which incorporates theoretical

sampling conducted “on the basis of concepts that have proven theoretical relevance to the evolving theory.” Initially, data will be collected from the Water Corporation and used to develop a model. Findings will be compared/contrasted with WNGI another utility and the model will be validated based on the finding. Data collection will include in-depth interviews to be collected in two phases over a 12 month period. In addition to managers and relevant staff, in-depth interviews will be conducted with Process Owners and other identified Stakeholders. If necessary, follow-up interviews will be conducted at the end of the data analysis stage to ensure all the data required is collected.

4.7.2 Data Collection Method

Qualitative researchers regard interviewing as a way of generating subjective data about the social world by asking people to talk about their life experiences (Holstein & Gubrium, 1997). Marshall and Rossman (1995) define the interview method in qualitative study as an “in-depth interview” to distinguish it from the approach used in a quantitative study. In a marked contrast to the latter, an in-depth interview is non-directive, unstructured, non-standardised and open-ended conversation between equals rather than the formal, question-and-answer exchange (Taylor & Bogdan, 1996). Flexible and dynamic, such interviews enable the researcher and the informants to repeatedly communicate face-to-face towards an understanding of the informant’s perspectives on their lives, experiences or situations expressed in their own words.

4.7.3 Data Analysis

Data collection and data analysis will proceed simultaneously. Interviews will be transcribed verbatim. Rules and protocols such as are espoused by Tesch (1990). Dey (1998), King (1998) and Whiteley (1999) will be employed in the data analysis process. Focus for analysis will be found by reading through the transcripts carefully (Tesch, 1990) and reflecting upon the data (Dey, 1998). Then the data will be analysed on a bit-by-bit basis (Dey, 1998).

Conceptualising and categorising the interview data will follow the rules and protocols set out by Strauss and Corbin (1990). Dey (1998) King (1998) and Whiteley (1999). Each construct will be coded and categorised. Categories will be set up according to the research problem and purpose. This is the most important rule and the researcher will check continuously to see that, the categories are being set up in compliance with a grounded approach (Whiteley, 1999). Vigorous links between themes and sub themes will be identified.

4.8 Research Process

This research is divided into several sequential steps as follows:

Step 1: Literature Review or desktop analysis

This stage aims to identify potential themes from past research. This will be done by reviewing literature from journals, books, seminar proceedings, working papers and the other sources. The researcher will incorporate the related literature into the final section of this study where it could be used to compare and contrast with the results (themes or sub themes) that emerge from the study. Literature will be used inductively in support of the grounded research approach.

Step 2: Interview Guide Design

The themes obtained from the previous stage and research objectives will be used to develop a tentative interview guide. This will include broad topic questions and specific prompts.

Step 3: Trialling of Interview Schedule/guide

The tentative interview guide will be trialled in two phases to enhance content authenticity. Firstly, a trial interview will be conducted with a small sample of SAP users to assess the research instrument in terms of the language, content and length. The feedback from this phase will be used to refine the question schedule. The refined interview guide will then be trialled with a small sample of SAP users within the Water Corporation. The assessment sheet will be provided to respondents for comments or suggestions for incorporation into the final guide. These steps are anticipated to detect any problems in advance of the actual study.

Step 4: Interviews

Samples will be drawn from the two identified utilities that use SAP. The target sample is SAP users who use SAP to support their tasks in order to ascertain the benefits that are realised through this usage. The researcher has access to these utilities and to interview SAP users.

Step 5: Data analysis

For analysis, data will be organised categorically and chronologically, reviewed repeatedly and continually coded as per a grounded research approach. A list of major ideas that surface will be chronicled (Merriam, 1988). Field notes and shared entries will be regularly reviewed. It is anticipated that NVIVO will be used for data management.

The primary strategy utilised in this project to ensure external rigour will be the provision of rich, thick, detailed descriptions so that anyone interested in transferability will have a solid framework for comparison (Merriam, 1988). Three techniques to ensure authenticity will be employed in this study. Firstly, the researcher will provide a detailed account of the focus of the study, the researcher's role, the informant's position and basis for selection, and the context from which data will be gathered (Le Compte & Goetz, 1984). Second, triangulation of multiple methods of data collection and analysis will be used, which strengthens authenticity as well as internal rigour (Merriam, 1988). Finally, data collection and analysis strategies will be reported in detail in order to provide a clear and accurate picture of the methods used in this study. All phases of this project will be subject to scrutiny by an external auditor who is experienced in qualitative research methods.

4.9 The use of axial coding and a single paradigm

Glaser (1998) objected strongly to the idea of axial coding in Strauss and Corbin (1990) arguing that it was an unnecessary step that formalised a process where theoretical sensitivity rather than a preconceived framework was paramount for the concepts to emerge. Of particular exception was Strass and Corbin's reliance on a single coding paradigm. Glaser further argued that the use of one paradigm was "preconception and forcing theoretical coding concepts on data to the max," (Glaser, 1992, p 63). Glaser's contention was that theoretical codes should simply emerge from the coding for categories and properties. Use of a preconceived framework would result in a conceptual description that was forced on the data and could not lead to a grounded theory that emerged in its own terms from the data.

4.10 Relevance

The detailed naming of data incidents advocated by Strauss and Corbin (1990) in open coding was seen as a laborious tedious waste of time by Glaser (1992), who questioned the need to summarise data and label every piece of data: much of it was irrelevant, and it was simpler and better to place data directly into categories and properties, reducing the number of data incidents that needed to be named.

In this research, detailed analysis of the meanings of each phrase uttered by an interviewee is considered unnecessary. The perceptions and ideas that are expressed in the interviews will be the focus of the research, so the fragments of the data to be coded could vary from a single phrase

to several paragraphs. No analysis beyond the expressed idea or perception will be required, therefore, the detailed naming proposed by Strauss and Corbin while considered, has been determined as inappropriate for the context of this research.

4.11 Evaluation issues

Inherent in the choice of methodology are assumptions about how the research will be evaluated. Denzin and Lincoln (1998a) stated that “multiple criteria for evaluating qualitative research now exist.... There is no single interpretive truth.... There are multiple interpretive communities, each having its own criteria for evaluating an interpretation.” Whiteley (2002) provided a list of some of the qualitative criteria in use.

Construction of the evaluation criteria is partly the responsibility of the researcher, through transparency of philosophical perspective and procedures, choice of methodology and suitability of research processes. Scrutiny of the research methodology should be performed:

1. Using an agreed set of rules, applied as appropriate to the goal of the research
2. Appropriate to the paradigm that informs the research
3. Using objectivity as a standard
4. Inclusive of both research process and outcomes.

The thesis structure and content have been explicitly planned for transparency of how these criteria are met.

4.12 Rigour

Rigour is a way of maintaining the validity and reliability of processes. Rigour is concerned with thoroughness rather than outcomes, i.e., knowledge, which may be arrived at and disputed from a variety of methodologies and paradigms. So reliability, which is concerned with the replicability of processes, falls within the ambit of rigour. However, validity, the extent to which the research process provides an accurate answer, may encompass both the process and the outcome. If appraisal of an outcome shows it to be unaligned with current knowledge, both the current knowledge and the research process may be called into question. Rigour is built into

methodologies as checks during the research process. A discussion of techniques considered for this research follows.

4.13 Triangulation

Whiteley (2002, p. 18) argues that triangulation in qualitative data evaluation is essential for “cross-checking emergent insights.” Further to this, Marshall and Rossman (1995 p. 194) stated unequivocally that triangulation could “greatly strengthen a study’s usefulness for other settings.” Nevertheless, in this thesis most of the data that were gathered were neither factual nor observational, but represented the personal opinions and experiences of the participants, and were subject to interpretation by the researcher. So it may be argued that there is the potential for subjectivity to dominate. Goulding (2002) makes the point by posing a question of a grounded theory, “whose research is it?”. In an emergent approach such as grounded theory, the research findings are the experiences and ideas of the participants.

4.14 Dependability

Another approach which Marshall and Rossman (1999) subscribe to is dependability in which the researcher attempts to account for changing conditions in the phenomenon chosen for study and changes in the design created by an increasingly refined understanding of the setting. This represents a set of assumptions very different from those shaping the concept of reliability. Positivist notions of reliability assume an unchanging universe where inquiry could, quite logically, be replicated. This assumption of an unchanging social world is in direct contrast to the qualitative/interpretive assumption that the social world is always being constructed and that the concept of replication is itself problematic.

4.15 Confirmability

Additionally, confirmability captures the traditional concept of objectivity. Guba and Lincoln (1998) stress the need to ask whether the findings of the study could be confirmed by another. By doing so, they remove evaluation from some inherent characteristic of the researcher (objectivity) and place it squarely on the data themselves. Thus, the qualitative criterion is do the data help confirm the general findings and lead to the implications? This is the appropriate qualitative criterion.

4.16 Summary of methodology

In summary, a series of interesting and important research issues relating to the adoption of ERP technology have been identified. The researcher has found that this is an area of importance and that there remains a gap that is under researched. The approach in this study was based around the main research objectives which were, “What are the key factors in successful implementation of ERP; how can the benefits be realised and which changes were necessary to do them. The research methodology is based around qualitative analysis supplemented with survey and review of documents which provided data triangulation and rich insights. The research design in p 71 is clearly illustrated and the grounded approach in this study provided interesting and appropriate new insights which can be found in Chapter 6, 7 and 8.

The grounded research approach was chosen for this study because it provided a means of allowing theory to emerge as far as possible independent of preconceptions and influences of the body of extant literature that may have been considered to be less than impartial. It was adapted for the purpose of this research by the necessary identification of an area of study in advance and the approach by Whiteley et al. (2000) was selected as the preferred approach because it appears more relevant to the business context of this thesis.

The next chapter describes the way in which the methodology developed in this chapter was translated into a research design.

Chapter 5

RESEARCH DESIGN

“One generation shall praise thy works to another, and shall declare thy mighty acts.” Psalm 145:4(AKJV)

5.1 Research Design

In depth interviews using scheduled questions was conducted in the Water Corporation of WA (WCWA) and West Net Group Infrastructure (WNGI) over a period of 12 months. Transcriptions and codes using the Grounded Research approach commenced whilst the interviewing was in progress to allow early emerging constructs to evolve. A semi-structured questionnaire design was selected, to enable the interviewer to guide the direction of the discussion while having minimal effect on the content of the emerging data.

5.2 Planning and Preliminary Study

This chapter describes the research process. It sets out the research and design, providing a step-by-step account of the method, which is set out in *Figure 5.1*. These are planning and preliminary study, data collection, transcription, analysis stage 1, 2 and 3. These are discussed later in the chapter in detail.

5.2.1 Designing the interview guide

The purpose of the interview guide is to encourage the participants to provide data, much of which was their perceptions and experience. How it was designed would have a direct effect on the quality of the data gathered. For concepts and theory to emerge for grounded research, data must be collected as far as possible without influence from an intermediary. Glaser (1992) stated that the issue for research, as well as the theory, would emerge through the constant comparison process.

However, focusing the data represents a ‘lens’ that is used as a starting point, which could begin at the interview stage. The ideal structure for this type of emergence is the unstructured interview, where the interview progress and broad direction is set by the interviewer. Several research questions had been developed to help explore the relationship with the principal research question. The interview guide was designed to assist understanding in the areas of those questions. Additionally, the corporations involved in the research for this study were given details about the structure of interviews and the content. They were allowing people to be interviewed and in company time.

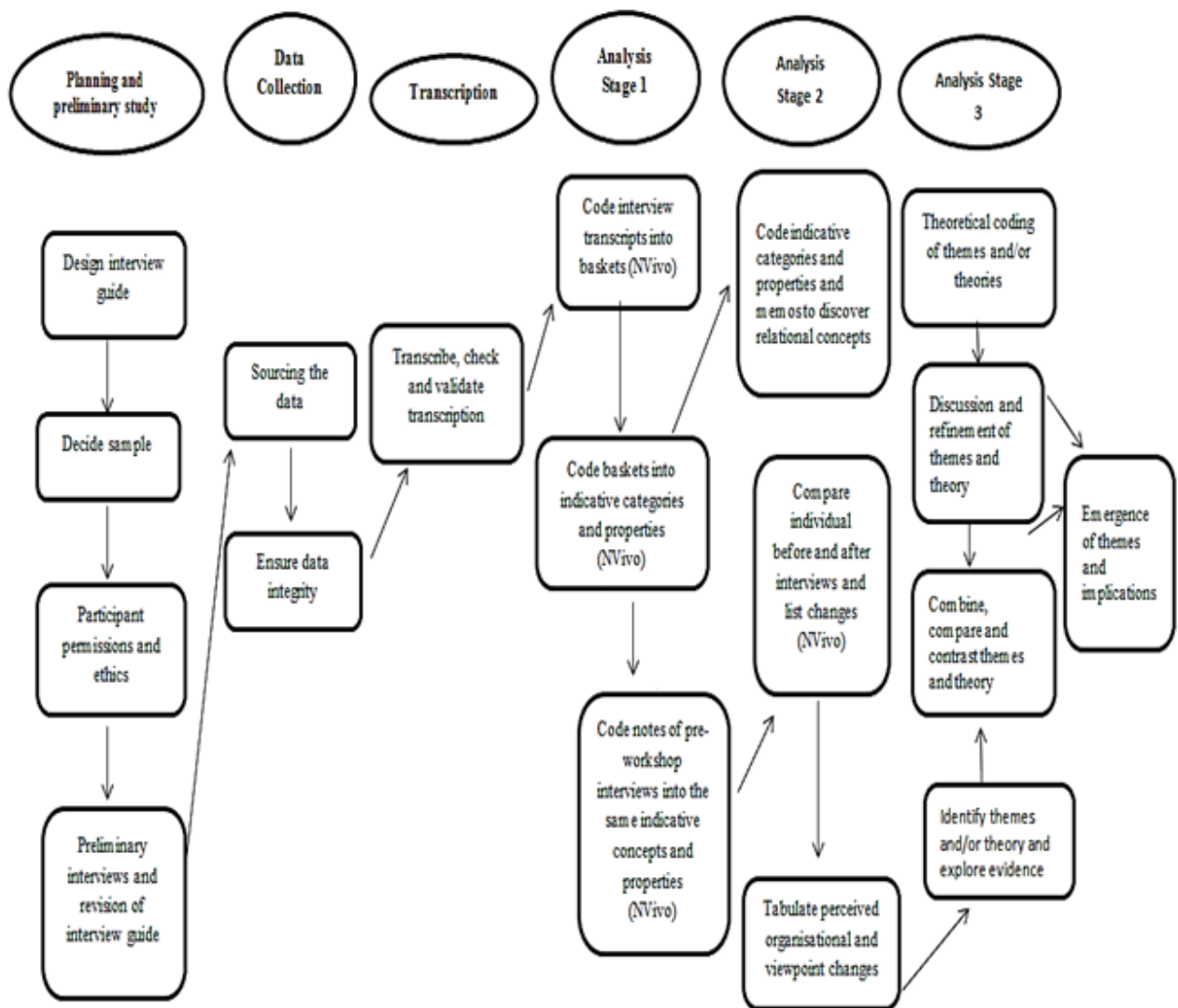


Figure 5.1 Research Design

Source: Nicol, 2005

NOTE: For simplicity, the research design is presented in a linear form. Each step could not have been performed without its predecessors. However, the process was iterative and this is shown in Figure 5.1. This is the process of constant comparison.

A structured questionnaire design was selected, because this enabled the interviewer to focus on the topics and provide direction of the discussion while having minimal effect on the content of the emerging data and constructs. The interview guide contains twelve areas/parts as depicted in Table 5.1, below. Its purpose and reasons with the actual questions are provided below and in Table 5.1. The principal research question in the research was: “**How have the Water Corporation of WA and WestNet Group Infrastructure WA implemented and utilised SAP-IT?**” to be ascertained through a range of question areas. These included: Participants’ understanding of SAP, the main factors influencing establishment in a business and factors, success and challenges in implementing SAP in an organisation (Questions 1,2,3 & 4). Questions were posed about what encourages people to use SAP-IT, of the types of benefits that have been realised, benefits program, and changes to organisation (Questions 5, 6, and 7). Gaining knowledge about barriers to placing benefits realisation in place in an organisation and what needs to happen for an effective program to be put in place shaped the next two questions (Questions 8 and 9). Understanding the outcomes of establishing a Benefits Realisation program from both a Management and End-User perspective informed (Questions 10 and 11). Finally the last question sought to understand the ways that technology could be used as a facilitator/catalyst for change (Question 12). The questions in the final interview guide and the purpose of each one are shown below in *Table 1 Interview Guide*.

Table 5.1 Interview Guide

QUESTION	PURPOSE/PROMPTS
<p>1. What is your perception of SAP-IT? What are some elements of an effective SAP-IT system? What role do you see SAP-IT playing in your organisation? (General perceptions and understanding of Sap-IT; measurable variables of SAP-IT characteristics).</p>	<ul style="list-style-type: none"> • Please tell me about your SAP-IT system (soft and hard parts of the Company’s SAP-IT) • What made the Company choose SAP-IT? Why not another system? (Adoption) • Who initiated SAP-IT in your Company? How did SAP-IT get started? What did you do to get it going? (Initiation) • How do you know people are using SAP-IT? (Implementation)
<p>2. What do you think are the main factors that influence the establishment of SAP-IT in an organisation?</p>	<ul style="list-style-type: none"> • End-user Difference/Benefits • Organisational Factors • Management Support • SAP-IT Characteristics

<p>3. What are the factors that lead to successful implementation of SAP in The Water Corporation and the realisation of benefits from the implementation of SAP?</p>	<ul style="list-style-type: none"> • Pre-implementation, Implementation and post implementation plan for SAP • Organisations culture and link between organisational culture with usefulness, etc. • Management support and link between Management support with usefulness, etc.
<p>4. What do you think are some of the difficulties to putting SAP IT in place in an organisation?</p>	<ul style="list-style-type: none"> • Changes to way of doing business
<p>5. What sort of things would encourage people to use SAP-IT and what sort of benefits have been realised?</p>	<ul style="list-style-type: none"> • Usefulness of SAP • Ease of use/User friendliness of SAP • Measurable variables of SAP-IT: Trainability, Complexity, Relative Advantage, Visibility, Capability • Link between usefulness and use of SAP-IT • Links between ease of use/user friendliness and usefulness, etc. • Link between subject norms with the SAP-IT: peer influence, superiors' expectation, subordinates' expectation • Link between voluntariness with use of SAP-IT, job description, requirement from Management, and using SAP-IT voluntarily • Link between subject norms with usefulness
<p>6. What are some of the changes that Water Corporation had to go through to successfully implement SAP-IT? What are some of the changes that The Water Corporation had to go through to Realise Benefits from SAP-IT?</p>	
<p>7. Does The Water Corporation have a Benefits Realisation program? What is the structure of this program and how was it implemented? What Benefits have been realised and what changes have occurred as a result of implementing a Benefits Realisation program with respect to SAP in The Water Corporation WA</p>	
<p>8. What do you think are some of the barriers to putting a Benefits</p>	

Realisation program in place in an organisation?	
9. What needs to happen in order for an effective Benefits Realisation program to be put in place?	<ul style="list-style-type: none"> • Internal resources (Budget, IT infrastructure, MIS department and their links with usefulness of Benefits Realisation) • Internal support (training, management support and their links with usefulness of Benefits Realisation) • Benefits Realisation Strategy, Strategic Planning and their links with the usefulness of Benefits Realisation • People’s skills, experiences, and innovativeness (both end-users and management) and their link with usefulness of Benefits Realisation) • Organisational culture and organisational structure and their links with the usefulness of Benefits Realisation
10. From a management perspective, what do you see as the benefits of a Benefits Realisation program? Why is it important? How can Benefits Realisation help you to achieve all this?	<ul style="list-style-type: none"> • Link between management support and perceived usefulness • Elements of perceived usefulness
11. From end-users perspective, what do you see as the benefits of a Benefits Realisation program? Why is it important? How can a Benefits Realisation program help you to do that?	<ul style="list-style-type: none"> • Link between end-users and perceived usefulness • Elements of perceived usefulness
12. Is there a case for organisations to use Technology as the main facilitator? Catalyst for change?	

The purpose of the questions was to initiate a conversation while providing some structure to it. From the preliminary study (5.2.2). p 76, it was learnt that the questions should be clear and targeted with respect to an area of interest, so that the conversation did not become repetitive. In some cases, double questions were used to ensure adequate inclusiveness e.g. questions 10 and 11.

5.2.2 Preliminary Study

The Interview Guide was designed to inform data collected from two sets, one from interviews conducted within The Water Corporation and the other from WNGI including perspectives, establishments, implementation, user friendliness, and changes to the organisation. Notes from the preliminary interviews also formed part of the primary data source. This is shown in Figure 5.2 below.

The intention was to make it amenable to ascertain similarities and differences of participants' perceptions between the establishment of SAP and Benefits Realisation (actual change). These similarities and differences could then be compared and contrasted with the accounts the participants gave of changes during the period of operation (perceived change). This could test the adequacy of the interview.

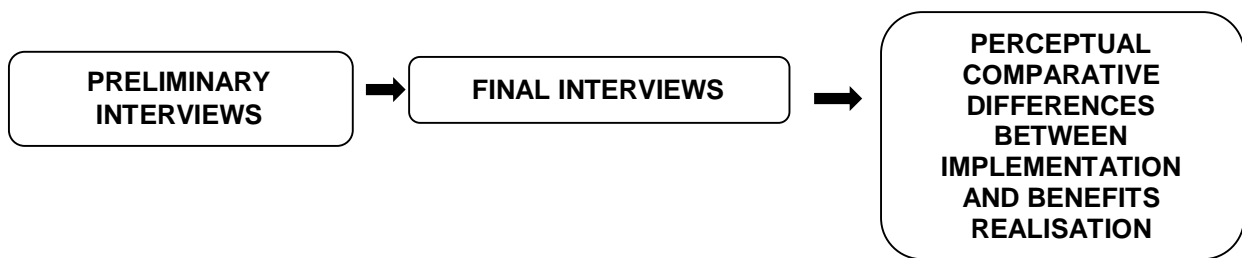


Figure 5.2: Description of two sets of primary data

The primary purpose of the preliminary interviews was to test the adequacy of pilot data collection and analysis procedures, including introductory letters and consent forms, the interview guide, interview techniques and equipment, transcription techniques and NVivo analysis of data. Three people were interviewed for the preliminary phase. Some minor adjustments were made to the interview guide (See Appendix II Evaluation Sheet Doctoral Research, p. 186). In the experience of the researcher, an important factor in the construction of questions or interview guides is avoiding a structure or wording that results in repetition in the interviewee's replies. Participants can become irritated if the interview structure leads them into repetition, and this can detract from the quality of the discussion. Following the initial interviews, some re-wording of the interview schedule occurred to improve clarity, not intent of the questions. There were some minor difficulties with recording interviews, which were identified and corrected. The major challenge was transcription. The researcher transcribed three interviews initially with some help using a whiteboard to record the conversation/discussion and certain utterances, which helped visually to

unravel and decipher some difficult interview transcriptions. Repeated repetitive listening to the taped interviews ultimately produced accurate transcriptions although in the initial stage some errors were encountered which were resolved through further checking. Forty-five minute interviews produced comprehensive and rich sources of data. The researcher acquired the help of a professional transcriber to complete the task.

5.2.3 Sample

Initially, verbal consent to conduct research for the project with the identified utilities was granted following a period of negotiation with the two organisations. Data collection was carried out over a period of three years due to the difficulty in securing access to another Utility in WA. After a number of failed attempts access was finally provided by WestNet Group Infrastructure.

As a first step, the researcher wrote to the CEOs of the respective organisations providing the title of the proposal and overview, to seek the support and assistance of the CEOs to research the successful SAP implementation, exploring the factors that determine success or failure in their organisations. Included in the correspondence was information describing what the study would investigate, namely what and how benefits have been realised and what changes had occurred as a consequence of Benefits Realisation. Both utilities understood that it was a comparative study and that results would be compared and contrasted. Material arising from the study would in the first instance inform the doctoral thesis and secondly, contribute to the body of knowledge about Benefits Realisation and Change Management, through published articles. Also identified was that at the conclusion of the study, a User's Guide for the Benefits Realisation from SAP may be an additional output.

Written consent (via email) was received from both organisations. Following this correspondence was sent to respective Managing Directors with a request to identify suitable candidates. A copy of this letter is contained in the Appendices.

The sampling procedure was informed by techniques from grounded theory described by both Glaser (1998) and Strauss & Corbin (1990) in which data collection becomes progressively purposive as categories begin to emerge from the analysis and coding becomes more relational. Sampling and coding continues to saturation which represents a state where no new data is appearing and the relationships between categories has been well established. (Strauss and Corbin, 1990) Glaser (1998) maintained that there was little point in collecting and coding data that was

not relevant. Both utilities selected participants from their workforce, based on a set of criteria provided by the researcher, namely their participation, knowledge, and utilisation of SAP in support of their tasks and employees who determine the benefits that are realised through this software usage. To obtain a representative view selection criteria also included participants with operatives, supervision, middle and senior management roles within the two utilities being researched. This supports Becker's (1993) approach distinguishing between selective sampling as undertaken by both utilities. Clearly, participants were selected by the organisation based on these criterion and not by the researcher, although their participation was not mandated. Interviews were undertaken with the least disruption possible.

In the case of the Water Corporation some 30 personnel were listed as potential participants by the organisation. Ultimately 23 were interviewed, a cross sectional sample of the organisation's demography. The researcher was familiar with the Water Corporation, its operations, and structure. WestNet Group Infrastructure provided a similar cohort and like the Water Corporation were supportive and enthusiastic about the study. Twenty three WestNet Group Infrastructure participants were also interviewed with a cross sectional sample of the organisations demographics. The sample group of interviewees from the Water Corporation was slightly larger than WestNet Group Infrastructure due to the pilot data being incorporated into the study.

5.2.4 Data Collection

The purpose of these interviews has been to discover key factors pertaining to the implementation of SAP, Benefits Realisation and Change Management in both utilities. They were used in the research for this thesis as the base from which to establish either the success or failure of implementing SAP, a Benefits Realisation and Change Management program.

5.2.4.1 Data Sources

Participants' accounts of their experiences using SAP in the organisation and in their personal approach to their work were covered in the interview. This approach included both Benefits Realisation and Change Management.

Data collection was carried out over a period of three years. Initially the researcher had difficulty securing access to another Utility in WA. After a number of failed attempts access to WNGI was provided.

5.3 Researcher and participant integrity

5.3.1 Data integrity

Data has no intrinsic value on its own: “all is data”. (Glaser, 2001) Its qualities and properties such as applicability, accuracy, dependability, and plausibility are a matter of interpretation by the researcher(s) and others who read the research outcomes. Silverman (1993) borrowed from interactionism the concept of interview data as displays of perspectives or moral forms rather than as true or false reports of reality. The conclusion from this is that all data may be admissible. But, if this is the case, it needs to be considered whether the validity of the research could be affected by lack of data integrity, which could originate from either interviewees or the researcher. Whiteley (2002, p.4) claims that organisations come equipped with super-categories of meaning embedded in their structures, systems and processes. This impacts on research more than simply as contextual phenomenon and constrain emergence and produce misconceptions necessitating that researchers need to make a judgement on a case by case basis.

The integrity of some of the data can be checked by looking for corroborating evidence and for inconsistent and conflicting evidence, which may have been fabricated, misinterpreted or even discounted, perhaps from the researcher or the participant following his or her own interests or agenda (Dey, 1993). On the other hand, because qualitative data mainly consists of the perceptions, tacit knowledge and opinions of the interviewees, the capacity to verify is limited. One technique for checking the integrity of research is replication which is not possible in social research as the factors are sensitive to time and place. Instead a proxy of internal replication is required, or as Dey (1993) argues the procedures can be inspected. The approaches undertaken in this study have taken transparency into consideration in relation to research design and conduct. This is discussed further in section 5.5.

In discussing data integrity, Glaser (1998) identifies four types of data that may emerge in the course of an interview:

- *Baseline*: The best description a participant can offer.
- *Properline*: what the participant thinks it is proper to tell the researcher.
- *Interpreted*: What is told by a professional to make others see the data his professional way, despite the fact that it alters the normal way of seeing it.
- *Vaguing out*: There is no gain for the participants in telling the researcher anything, or it is considered none of the researcher's business, so the participant gives uninformed replies, that Glaser called vagaries.

It is possible that an interview would contain a mix of these types, and it would be an impossible task for a researcher to classify them through a whole interview, even using the checks suggested by Dey (1993). However, this need not devalue the data. All data types represent different perspectives and can add to understanding and this is the approach taken in this thesis. Glaser (2001) was adamant that no matter what type of data was being obtained, it must be allowed to emerge and its meaning must be induced, even if the researcher doesn't agree with it. All types of data can be conceptual or factual, or a mix of the two. Secondary analysis of other data sources can also add to knowledge and understanding. Grounded theory, according to Glaser (2001), is not about facts, but about concepts and theory building.

Participants' experiences have been treated as their reality in this thesis but could be subject to re-interpretation at different times and from different perspectives or world views. Therefore, it was decided that, unless there was compelling evidence that data is questionable, all data will be accepted for analysis. Glaser's (1998) four types of data integrity as cited earlier were used to guide interpretation.

5.4 Retrospective data

There are issues in methods for collection and analysis of retrospective data that need to be addressed. Retrospective data are based on second-hand accounts, in contrast to the direct experience by the researcher that is approximated by the participant observation used in, e.g., symbolic interactionism (Partington, 2000). In some cases, where the interviewee has not directly observed the event, the experience may be third-hand or even more remote. This is a source of potential distortion.

Some of the issues that are specific to retrospective data include:

- Position: The participant needs to have been in a position to observe and have paid sufficient attention to be able to talk meaningfully about the research subject (Hindley, 1979).
- Interpretation: Remembering is a reconstructive process. It is affected by people's assumptions and beliefs, so that people will often recall their interpretation of an incident rather than what they literally saw (Baddeley, 1979). Subsequent events or influences can distort memory of what happened and, as goals and projects alter, so perceived meanings can change. (Weick, 1995)
- Memory reliability: Memory may not be reliable, often tailing off quite quickly, then more gradually (Baddeley, 1979; Hindley, 1979).
- Expectations: Memory may be affected by how the expectations of the person were realised by the outcome of a data incident or process (Baddeley, 1979, Hindley, 1979).

The problem for the researcher may often be in choosing which of many possible meanings in the data are to be used in sense-making (Weick, 1995), an issue that is compatible with Glaser's (1992) idea of data sampling and analysis becoming progressively purposive.

5.5 Interviewing

There are a range of matters that need to be addressed with the interviewing process, in particular:

1. *Discounting evidence*: The researcher's biases and pre-existing beliefs can lead to data that don't suit being omitted (Dey, 1993 also noted by Glaser, 2001) namely inappropriate follow-up questions during interviews or notes that are incomplete.
2. *Contextual effects*, such as the interpretation of paralinguistics, e.g. gesticulation, tone of voice, the spatial relationship of the people in the room, gender, relative status and timing (both of the interview appointment and of the way the questions are timed in the interview) can also affect the meaning of the data that were gathered (Whiteley et al., 1998).
3. *Phrasing of questions* (Hindley, 1979) can affect the way the interviewee responds.

5.6 Addressing retrospective data and interviewing issues

The following techniques were used to address the retrospective data and interviewing issues.

- The interview guide was planned to allow for follow-up questions to prompt the memory of the participant, as the researcher thought appropriate. Questions were framed to avoid leading by using phrasing like “Could you tell me more about...”
- Collection of data from most of the participants allowed for data triangulation through constant comparison, i.e., checking for consistency.
- Some secondary data sources were also collected, which could be compared with primary data as appropriate. These included annual reports, results of an internal survey conducted soon after the implementation of SAP and supporting documents.

Interpretation:

Participants’ interpretations of the questions pertaining to the use of SAP, at the time of the interviews, were the data that was sought, including any distortions. All data were captured, with no attempt to correct any statements, at the time of the interview even if they did not appear to fit the researcher’s understanding, which, as expected in the methodology, developed as the research progressed. Distortions were identified through repeated listening to transcripts and comparing responses when distortions were suspected.

Expectations:

The data sought were the experiences and perceptions of the participants, regardless of influences. Where it seemed that the interviewee’s comments may have been influenced by or tailored to what he or she thought was expected by the interviewer, follow-up questions were used to qualify the nature of the expectations and any bias resulting from the outcomes differing from expectations.

Position:

The first question in the interview guide was designed to qualify the participants’ present position by establishing their recollection of general perception and their understanding of SAP.

Thus, the researcher was able to determine what data participants were able to provide because of their involvement in the SAP project.

Phrasing:

The researcher is an experienced interviewer and practised at phrasing questions that are clear to interviewees in order to avoid leading them. The semi-structured interview format was used to encourage the interviewees to express their opinions and experiences with a minimum of guidance from the interviewer, to reduce the possibility of interviewer influence.

Contextual:

Language such as tone of voice and gesticulation on the part of the interviewee can affect the meaning of what is being said and needs to be recorded where relevant as part of the data capture. This was an issue because of the diverse range of participants with different accents which impacted on transcription time and efficiency. How the interviewer behaves can also affect the quality and nature of the data gathered. The interviewer was careful to allow the interviewee plenty of time to complete answers without interruption.

Proximity to the interviewee was a mix of what was practicable and what appeared comfortable to the interviewee. The recording device for the interview was placed on a table between the interviewer and interviewee with a tape sufficient to capture the entire interview in most cases, and therefore avoid interruption of the flow of conversation while a tape was being changed. The duration for the interview had been agreed in advance. Timing of the interview appointments was mutually agreed and postponements accepted if necessary. Issues of status and gender were handled through the sensitivity of the interviewer to the issues.

There was one data collection event with each research participant. No opportunity was provided for participants to review the transcripts or to provide any sort of feedback. This is commensurate with Glaser's (2002) insistence that the theory transcends the viewpoints of any of the participants, and with the critical realist paradigm, in which perspectives will change with time and new experience. Viewpoints may have changed by the time of participant reviewed the transcript, which may invalidate this process.

Discounting evidence:

The semi-structured interview format encouraged interviewees to expound their views fully. The interviews were recorded on tape in full, to prevent loss of data. Notes were taken during the interview of any non-verbal events that may have affected the meaning of what was said. All interviews were conducted face-to-face, because this enabled better appreciation of innuendo and unspoken meanings. The researcher began with no preconceived ideas of the direction the research might take, and was careful to avoid allowing early apparent directions delimiting later evidence that, if allowed to emerge freely, could either reinforce or contradict earlier impressions.

Transcription:

All the data were transcribed verbatim and in keeping with the approach taken to sampling, no attempt was made to identify themes or theory to limit the amount of data to be transcribed. The researcher's approach was to capture all the data. Transcription commenced as soon as possible after each interview. A significant effort was concentrated on achieving accuracy of transcription. This was done by repeated listening and transcribers comparing transcripts and notes in some instances.

Of the 43 completed interviews, 13 were transcribed by the researcher and the remainder by another transcriber. The error rate was moderate. Two correction runs were made for all interviews, listening to the tapes again. The first was the main correction run and the second a recheck that suggested corrections had all been made. Where a comment on the tape could not be deciphered, this was noted. All correcting was performed by the researcher, who had also conducted all the interviews and was therefore familiar with the context and content.

5.7 Analysis Stage 1

The primary research tool in this stage was NVivo, which enables emergent categories or concepts to be coded, i.e. labelled "nodes" or "containers for ideas" ready for analysis. For the initial open coding the data was categorised into broad nodes that were termed "baskets" into which the units of meaning were inserted in this thesis. The question that was asked of the data was "What information is the participant sharing here?" The first step was merely a way of organising the data into manageable groups of broadly similar subject matter for further analysis. No value distinctions were made within the baskets and the same or overlapping data could be

coded into more than one basket. Some argue that each has to be unique. The baskets were not intended to be permanent and held no importance beyond organising the data (Nicol, 2005).

This was followed by a third iteration, which produced either properties of categories or sub-categories, with the question (now informed by emerging concepts and themes): “What in this node needs to be coded in more detail to increase understanding.” Reasons for the need for more detail could include the presence of elements coded in a category that did not seem to fit, necessitating a new category, or the emergence of relationships of data as subcategories or properties. In both these iterations, the context of the phrase sentence or paragraphs(s) that constituted the unit of analysis was carefully considered, because of the importance of the context in establishing the meaning of what was said (Locke, 2001).

At the end of this phase, a database of some 230 nodes of indicative concepts had been established. So far, the process had been largely one of data collection and sorting. But in qualitative research data are selected, not merely collected (Dey, 1993). Whiteley (2000) expressed a concern that business research will often not fit the internal integrity of the original grounded theory. She advocates axial coding which is a set of procedures whereby data are put back together in new ways after open coding, by making connections between categories/themes. (See p. 92, Table 6.1 and Table 6.2 p. 107). This interpretation of grounded research strongly influences the approach adopted in this study. In Analysis Stage 2, the coding became selective, i.e., purposive. However, the coding process remained iterative, with some interim development of relational and theoretical concepts was also taking place in the earlier phases. It was necessary from time to time in Analysis Stage 2 to refer back to or recode or amend coding of some of the data. These amendments were to remove duplications and some redundant coding, as well as reconceptualisation.

A model of the construction of part of the coding hierarchy at the conclusion of Analysis Stage 1 is illustrated in Figure 5.3, p. 85.

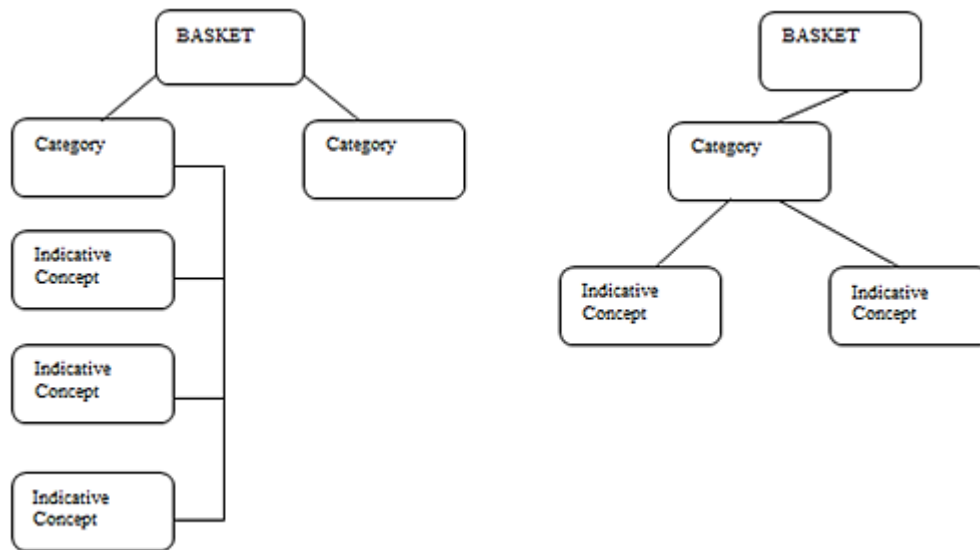


Figure 5.3 Analysis Stage 1

Source: Nicol, 2005.

5.8 Analysis Stage 2

The second stage of the analysis was an exploration of the categories that emerged from Analysis Stage One. This proceeded in two parts: exploration of participants' perceptions of factors affecting the implementation of SAP and Benefits Realisation. The analysis is the interpretation of the data. The first stage was predominantly an exploration of what the participants were saying, with the output a conceptual data base. In the second stage theoretical concepts emerge.

The data that were sought were the experiences and opinions of the participants, so the unit of analysis was the expressed idea or perception. According to Glaser (1992) in grounded theory, whether the analysis is undertaken line by line, in sentences or paragraphs or even entire documents, depends upon the type of data collected, the skills of the data collector, the density of ideas, and the nature of interviews. For Glaser (2003), theoretical concepts, which were latent patterns discovered through naming of categories and properties, were enduring and abstract for time, place and people. Interview transcripts and the audio recordings continued to be referred

to throughout the analysis where context was needed to clarify meaning or new trains of thought arose.

5.8.1 Exploration of the implementation process

This stage of the analysis was an interrogation of the data with specific questions. The data questions could be sourced from:

- The interview guide where specific information was being sought, e.g. **“How have the Water Corporation WA and WestNet Group Infrastructure WA implemented and utilised SAP-IT?”**
- Emerging concepts, sourced from constant comparison as the coding progressed.

While questions were directed at encouraging participants to talk about a specific topic, neither the interviewee nor the questions asked of the data were limited to these topics. In the analysis, the principle of emergence has been applied to the data and concepts, in that no hypothesis was tested, no preconceived ideas were brought to the analysis and no limitations were placed on the scope of the subject matter included in the analysis. Glaser held that grounded theory was not description. The participant discussed what was going on and their particular perspective adding the interviewer’s interpretations to the recording of it “would be an unwarranted intrusion of the researcher” (Glaser, 2003, p. 169). The cataloguing of the participants’ perceptions is what was achieved in Analysis Stage One.

However, grounded research analysis is conceptualisation of the data provided by the participants, and the product of the process is abstractions that transcend limits of time, place and people (Glaser, 2002). It explores and theorises about the way the participant sees the world, a position which critical realists could hardly dispute. An outcome of the exploration may be the emergence of patterns and theories which the individual participants themselves are not aware of. It is this theoretical conceptualisation that is the objective of Analysis Stage Two.

An implication of this is that theoretical concepts that emerge at this stage are not validated. From these concepts, theory will be formed, and the theory can then be tested and adjusted as required. For Glaser (2003), the criteria for assessing the adequacy of emergent theory was that it matched the situation, that it was relevant and that it worked, which in the case of this research meant it assisted people in making sense of their experience. However, this view applies to the

outcome of the research, the theoretical output. It remains incumbent on the researcher to demonstrate how conclusions were reached and that they were reasonable.

In this phase of the analysis, it was anticipated that a number of core theoretical concepts would emerge, within each of the research question areas. However, concepts and theories might also emerge in unforeseen areas.

5.9 Analysis Stage 3

The third stage of the analysis was the development of theoretical concepts. The analysis at this stage depended heavily on the researcher's theoretical sensitivity (Glaser, 1978) which has been described as an awareness of the subtle meanings of data and the ability to recognise what is important in the data and give meaning to it (Strauss and Corbin, 1990). The importance of the researcher as a research instrument was very much in evidence at this stage.

5.10 Audit Trail

Transparency is important in this thesis. The following critical records have been kept:

- Audio recordings of interviews (confidential)
- Transcripts of interviews (confidential)
- List of nodes
- Complete NVivo project

5.11 Participant consent and ethics

Once the sample had been determined, a letter was written to all potential participants. See Appendix 5. This detailed the study and included confidentiality provisions and a request for their participation in a recorded interview, and where applicable, permission for the notes from their pre-workshop interviews to be used as part of the research. A written consent form was attached to the letter, to be completed prior to the interview. In addition, a letter encouraging their support was emailed to each person from the participants respective Senior Manager. The letter was followed up by a telephone call to each participant, to provide further explanation of

the research, what would be required from the participant, and to set an appointment for the interview. All potential participants gave their consent via a consent form. This form appears in Appendix V.

To ensure anonymity, each interview was given a code number, with which it was labelled immediately on completion of the interview. The audio recording and transcript are identifiable only by that code, the key being held solely by the researcher in a password protected computer file. The researcher has also taken care that quotations from transcripts cannot be linked back to their source because of context or content. In accordance with the Curtin University *Code of conduct for the responsible practice of research*, the transcripts have been stored electronically under password protection and the cassettes of recorded interviews have been stored in a secure place.

Participants were very comfortable with the researcher's approach and felt assured that their anonymity was sufficiently protected. This was certainly evident in the way in which they shared a great deal of information in relation to *SAP-IT* and their respective organisation. In the following chapter the findings of the data collected from participants will be outlined.

5.12 Summary

This chapter has explained how the research method was designed to meet the objectives of the research within the framework of the chosen methodology. Discussion also included the ways in which grounded theory and/or research was adapted to the special circumstances that dictated the sampling process.

Descriptions have been provided of the procedures for authenticating the data and transcriptions and of the adapted grounded theory methods and terminology employed in the analysis. In the next chapter (Chapter 6) the indicative and some relational concepts that were relevant to findings of the research are reported. In the chapter following (Chapter 7) the remaining relational concepts and the emergent theoretical concepts and hypotheses are discussed.

Chapter 6

FINDINGS

“But who may abide the day of his coming? And who shall stand when he appeareth? For he is like a refiner’s fire, and like fullers’ soap.” Mal. 3:2(AKJV)

6.1 Findings

In a previous chapter, Research Design, two phases of data coding were described, the outcome of which gave 21 major themes containing data relevant to the use of SAP and realisation of benefits in the two utilities researched.

When using NVivo to organise data, each node in the model is linked to the documents and passages coded to that node. This enabled the researcher to browse the data coded at any particular node. During the second phase of coding it was important when reorganising nodes that data be copied from one node to another rather than just moved. This is to ensure that data is retained at higher node levels. This is critical for this study to ensure all data be available at a particular node. Hard copies of all data are retained as a safeguard against digital data failure.

Glaser and Strauss (1967). Strauss and Corbin (1990). Creswell (1998). Locke (2001) and Goulding (2002) describe the first stage of analysis, using the grounded theory method, as open coding allowing categories to emerge from the data. Quotes best illustrative of main themes and sub themes have been selected from the interview transcripts which have been listed below each construct and the cluster of supporting concepts. These quotes best demonstrate the development of themes and sub themes from grounded research as depicted in Table 6.1, p 92, Water Corporation WA and Table 6.2, p. 107, WestNet Group Infrastructure. Following the grounded research what the participants identified formed the basis of Stage 1 Coding. The inductive process of letting the data speak led to the development of 500 nodes. Stage 2 was the integration of Stage 1 Coding into 235 nodes and Stage 3, the deductive process, is where the hierarchy of themes and sub themes were developed and refined into 21 themes. What is found, for example, is that “Integrative” is emphasised and authenticated as a theme. Different quotes from the interviews are used to support this contention, for example, “The impression I get is that SAP is

incredibly powerful integrated software.” Constructs are grounded by pulling quotes from different interviews supporting the construct. This is an important aspect of grounded research.

The main objective of this chapter is to present the research findings, what respondents said about SAP and realisation of benefits, the challenges, issues and uncertainties the two utilities experienced during the implementation of SAP. The findings are presented firstly by the researcher’s comments. Then secondly, as quotes, in italics, from the interview transcripts allowing the respondents to speak for themselves in illustrating the issues (Whiteley, 2002). Finally, this is followed by a diagram showing the category, concepts and constructs followed.

For the purpose of clarification where quotes from respondents are used they have been slightly modified to remove duplicated words. This in no way has altered the meaning of the response. For example, “The corporation ah at the time ah SAP was implemented had a very siloed um or a lot of um introspective view of the way it operated.” Rewritten thus, “The corporation at the time SAP was implemented had a very siloed or introspective view of the way it operated.” Quotes from respondents are identified by being within the symbols //...// and in italics. Where pauses in transcripts or sections have been deleted, these are represented by three dots.

Whilst the objective of this research is to uncover the critical issues for the implementation of SAP and realisation of benefits there are important events that have occurred in the application of SAP and realisation of benefits which have shaped the utilities and continue to provide uncertainty. Question one of the interviews asked about these events and is referred to in the previous chapter, **“How have the Water Corporation WA and WestNet Group Infrastructure WA implemented and utilised SAP-IT?”**

6.2 Defining Themes

According to Marshall and Rossman (1989, p 114), the process of qualitative analysis is based on data “reduction” and “interpretation”. The researcher takes a voluminous amount of information and reduces it to certain patterns, categories, or themes and then interprets this information by using some schema. Tesch (1990) called this process “de-contextualization.” This process results in a “higher level” analysis: “While much work in the analysis process

consists of “taking apart” (for instance, into smaller pieces) the final goal is the emergence of a larger, consolidated picture” (Tesch, 1990, p 97).

Miles and Huberman (1984) support the concept of displays of the information, a spatial format that presents information systematically to the reader. These displays are tables of tabular information. They show the relationship between categories of information, display categories by informants, site, demographic variables, time ordering of the information, role ordering, and many other possibilities. In this thesis, the tabulated information are the tables of themes, sub themes and tables showing similarities and differences.

The coding procedure used to reduce the information to themes or categories provides flexible rules governing how one goes about sorting through interview transcriptions, observational notes, documents, and visual material. It is clear, however, that one forms categories of information and attaches codes to these categories. These categories and codes form the basis for the emerging story to be told by the qualitative researcher. This process involves what has been called “segmenting” the information (Tesch, 1990). developing “coding categories” (Bogdan and Biklen, 1992). and “generating categories, themes or patterns”. (Marshall and Rossman, 1989)

The themes are defined as a fundamental class of data. In the context of this study they represent a fundamental issue or topic concerning the use of SAP in both utilities. The structure of findings falls under a number of major themes, further subdivided into sub themes as shown in Table 6.1, p 92 and Table 6.2, p 107 as they relate to the Water Corporation and WestNet Group Infrastructure. Each theme is graphically illustrated.

6.3 The Interview Guide

The purpose of the interview guide is to encourage the participants to provide data, much of which was their perceptions and experience. How it was designed would have a direct effect on the quality of the data gathered. For concepts and theory to emerge for grounded theory, data must be collected without, as far as possible, influence from an intermediary. Glaser (1992) stated that the issue for research, as well as the theory, would emerge through the constant comparison process. This was discussed in detail in Chapter 5.

Table 6.1 Themes and Sub Themes: The Water Corporation - WA

	Themes	Sub Themes
1	Integrative	Partial Integration Integrate multiple systems into one Integrate IT into business thinking
2	Process Analyst	Standardised functions created Process Accountability Accountability Framework
3	Leadership	Executive Backing Influencing Take calculated risks Supportive Dedicated Resource
4	User Friendliness	Flexible to users' needs Makes the job easier Some adaptation Standardised process Increased confidence
5	Problem Solver	Supportive
6	Planning	Y2K Clarity in strategic direction Organisation Business knowledge Good lead in time
7	Best Practice and Global Product	Credible process Requires a systemic view Framing questions of being framed by them Benchmarking
8	Change	Communication Lack of clarity about expectations Thinking outside boundaries Clarity in strategic direction Move away from silos Desire to change Breaking down silos Visionary tools Current and future use Better communication Technology as an enabler Better access to information
9	Reliability of Information	Good system Managing Information
10	Resources	Well managed process Highly skilled dedicated resources Getting good support in system Highly skilled team Dedicated resources

The findings from interviews of the Water Corporation are discussed below according to emergent themes, followed by separate findings from WNGI. Quotes from respondents are reported in the text as // ... // Quotes used best reflect the major ideas presented by respondents. This is the essence of what is being communicated and what best reflects what people say.

6.4 The Water Corporation

6.4.1 Integrative (Water Corporation)

The Integrative theme is concerned mainly with integrating past IT iterations, and providing a seamless service so that utilities can move forward and invest in new projects and infrastructure based on the needs of the user. This is undertaken through efficiency gains, cost reductions, system and process improvement. There are two sub themes that emerge from the findings about integration, these are one, integrated multiple systems and two integrate IT into business thinking. As discussed in the literature section and reinforced by an interview respondent SAP is “an incredibly powerful integrated software and it supports the business because it forces integration”. In contrast, respondents indicated that the integration was a painful experience and it was difficult to integrate SAP with existing brands of software currently used at the time of implementation.

This was further illustrated by other respondents’ statements including:

- Integrative.** //The impression I get is that SAP is an incredibly powerful integrated software.//
- Integrate multiples systems into one.** //It’s brought together a lot of benefits within the organisation in terms of disparate systems.//
- Integrate IT into business thinking.** //It is extremely large and it is a very integrated tool. But the tool itself supports the business because it forces integration.//

6.4.1 Water Corporation- Integrative



6.4.2 Process Analyst

A number of respondents indicated that Process Analyst eventuated while a benefits realisation team was in place to oversee the outcomes required. However, momentum was lost once the benefits realisation project team was disbanded as the supporting and facilitating attributes of the benefits realisation team disappeared. So did a good measure of accountability for the realising of benefits. Comments are:

Process Analyst. //The Corporation was able to achieve this by implementing a process of what we would call Process Analyst where senior managers usually general managers from across the organisation were made accountable for a particular process.//

Process Accountability. //As a result they're responsible for the process across the whole organisation.//

Standardised functions created. //This enabled the corporation to move into an area where they could actually put arguments safely, implement standardised accounting functions; standardise procurement functions; standardise asset management functions etc.//

Accountability Framework. //This subsequently has been the ground work that's enabled the corporation now to move to its new accountability framework.//

6.4.2 Process Analyst



6.4.3 Leadership (Water Corporation)

Respondents acknowledged the requirement for The Water Corporation executive commitment but particularly the requirement for sign on from management. Interviewees also indicated the need for management and employees to understand that SAP implementation was about realising benefits, initiating and managing change and that this needed to be followed through from an executive level downwards. There was an overall sense that The Water Corporation as an organisation needed to clearly communicate its commitment to SAP across the organisation.

Investment made on a competent analysis of the business environment was a prime consideration. Participants considered that management needed to demonstrate its capacity to select the right kind of investment and in doing so develop a track record of making well-considered and sound investments. As the Benefit Realisation process is part of building a track record and of making sound investments, participants made the following comments about leadership:

Executive backing. //You definitely need the normal executive sign on but probably over and above that you need to sign on from the management and you need management and employees to understand that this is about benefits.//

Influencing. //From an organisation's perspective it has certainly driven the organisation in a certain way.// //Large and complex, it is used to supply a fair bit to the business.//

Leadership. //There needs to be sponsorship right from the very top.//

Supportive. //SAP has to be innovative, creative and different but it does support us.// //It's a bedrock and once you've got that bedrock in place you can do lots and lots of things.//

Take calculated risks. //I think that invariably on many occasions some of the types of investments we need to make are in fact leaps of faith.// //They can be based on you know the industry knowledge and intelligence gathered from the industry.//

Dedicated resources. //You know you need to have dedicated resources to manage an implementation program.//

6.4.3 Water Corporation- Leadership



6.4.4 User Friendliness (Water Corporation)

Findings from interviewees indicate that SAP has been implemented as a total group system, rather than a number of separate systems which have integrated and combined. Generally speaking respondents have been quite comfortable with SAP particularly as it did provide a lot of advantages for the corporation for those who were regular users although it was portrayed as not particularly user-friendly by some. For the occasional user it was difficult to use. More recent versions are more complex as one interviewee discussed.

Navigation was way too many clicks of the button to get to be where you needed to be and the navigation paths weren't well cored or logical. More intuitive back then. While SAP was considered by a respondent to provide benefits of total integration, the needs of both users and business were key aspects for success as identified by another respondent.

Flexible to users' needs. //It's got to be matched to the needs of the users that is business needs of the organisation. If it is implemented without considering both of those things, then they may not get the flexibility they are seeking.//

User Friendliness. //People think it's difficult to use.// //I wouldn't suggest that the first implementation 3.1H was user friendly albeit it did provide a lot of advantages for the corporation for those who were regular users like dedicated materials management people or purchasing officers. But from an occasional user's viewpoint they found it reasonably difficult.//

Makes the job easier. // Any system will get used if people see that it helps them do their job. Helps them make the process easy. Helps them make their work life easy. Provides information that that they need to do their job.//

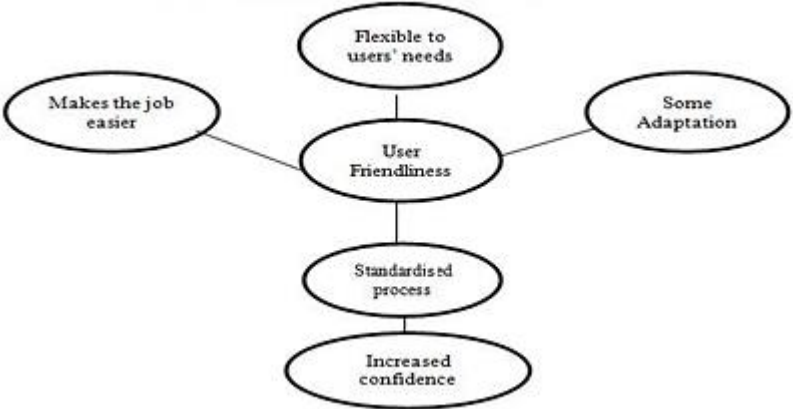
Some adaptation. //So there's a fair bit of adaptation. There's a fair bit of making it reasonably user-friendly because when we first put it in the expectation was that it could be used by all managers.//

Standardised process. // Ah from end-users perspective what they what we're able to deliver was standardised processes, across a whole raft of things which whilst admitting there was significant amount of growth which you know, which is to be expected.//

Increased confidence. // I guess as an end user it gives you that sense that the business is, does hold itself accountable for making sure that things are delivered and the outcomes are

achieved.// //I guess as an end-user you'd like to think that it was actually giving and that ensures the system provides you with the functionality that was promised.//

6.4.4 Water Corporation- User Friendliness



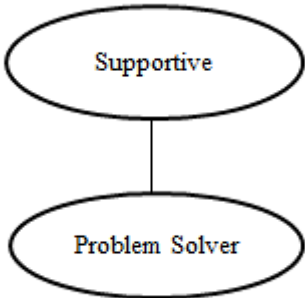
6.4.5 Problem Solver (Water Corporation)

For respondents, the notion of flexibility, alongside a standardised process were important attributes for users of SAP encouraging greater confidence in users. Furthermore, some adaptation to the business of the Water Corporation and local conditions were reported to have made the job easier for program users. Comments made by respondents include:

Supportive. //SAP has to be innovative, creative and different but it does support us. It's bedrock and once you've got that bedrock in place you can do lots and lots of things.//

Problem Solver. //As a problem solver, SAP can provide the answers to almost any question anybody has asked that's relevant.//

6.4.5 Water Corporation- Problem Solver



6.4.6. Planning (Water Corporation)

Participants remarked that planning was a prime consideration for the implementation of SAP and the realisation of benefits. They identified factors that lead to successful implementation were focused around Y2K which was a key influencer and also an identified need for forward planning. Additionally, the Business Case requirements which the Water Corporation, WA tabled with its Board of Directors also had a clear pre-implementation, implementation, and post implementation requirement contained within it. The Water Corporation was required to and did respond to this approach, acknowledged respondents. Below are comments from respondents:

Y2K. //Well when I reflect on our implementation of SAP my understanding is it was driven by the need to have some new IT architecture in place for the Y2K situation.//

Clarity in strategic direction. //Simply by knowing what is in the program and having really developed some realistic goals of what you want to achieve. You can promote people to follow it and of course the other thing is the will and the motivation to do it.//

// What it should be doing – benefits – a benefits realisation process needs to have a vision: set of objectives. And whilst those those objectives need to be a balance on how they make – how they improve the business. Anything that improves the business is ultimately a benefit to the end-user. It makes their life much easier. //

Planning. //You need to have a well-developed plan to ensure that you are focusing on all the areas that need to be covered and that you are effectively managing to that plan.//

//Planning up front in terms of understanding the business.//

// The planning went pretty well. //

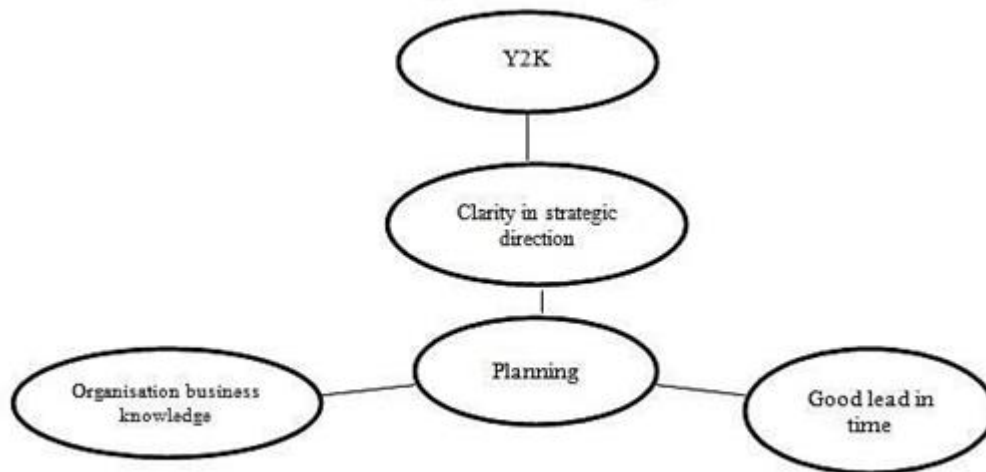
Organisation business knowledge. //So we had enough time to do a lot of the planning around Organisation Business Knowledge and what this would mean given the business had a lot of disparate (basically unlike or different) systems and a lot of integration that that wasn't as good as possibly what it could be. So that was pretty critical.//

//We did go and visit other sites and had a clear indication of what we were taking up especially in respect of retaining people at the end of the day because they learn a lot and the paths of educational and training were actually improved by SAP. //

//Every site that we visited that implemented one of the modules of SAP and said don't underestimate what you're taking on and don't underestimate the effort, the length, the education and training required.//

Good lead in time. //The good lead in time was a factor that led to successful implementation.//

6.4.6 Water Corporation- Planning



6.4.7. Best Practice and Global Product (Water Corporation)

The introduction of Best Practice and Benchmarking shows that Water Corporation was under pressure to think more globally. There was an awareness that pursuing best practice would provide global reach in providing the Water Corporation with the ability to think beyond past boundaries, and in doing so support the organisation to think about change in a different way through utilising SAP. This was also a requirement for a credible process in place to drive benefits realisation systematically across the organisation. For interview respondents this included:

Credible Process. //There needs to be a Credible Process group of highly skilled individuals put together to drive benefits realisation processes with high credibility in the organisation as well as trust and empathy//

Requires a systemic view. //If you find that people are held at a very narrow focus and say well that is all I'm interested in and don't consider my entering all the information and completing all the various fields – they're really impacting on the whole corporation.//

//The fact that it has such a wide, quite a wide base across the world gives it a lot of global reach from the point of view of best practice.//

Best practice and global product. //Benefits realisation we'd look at as well; what is it costing us now we'd done these figures previously and we've been involved in Australian benchmarking consulting stuff and other forms of benchmarking studies and how efficiently we can make the product, benefit realisation and what it would cost. //

//So whenever we developed a business case we developed a program of how we realise benefits.//

Framing questions or being framed. //I know that the feedback I get from talking to the those who are closer to SAP than I am is that it's an incredibly powerful tool that can pretty much do whatever you want it to do. //

//Perhaps the intelligence that the organisation has in both framing the questions it wants to ask but also in setting up the SAP implementation that enables you to have the questions you might want to ask in the future answered so you really need to think through those business processes, think through the kind of questions you may want to answer down the track so that you implement it in a way so those questions can be asked. I think every time I ask the questions. SAP will tell you whatever you want.//

Benchmarking. //The last major IT related thing that I was involved in here was part of the result of the corporation wanting to look forward to electronic trading. Whatever else, I had to go and investigate electronic trading so we had to then look at benchmarking.//

6.4.7 Water Corporation- best Practice and Global Products



6.4.8. Change (Water Corporation)

As an ERP tool SAP was considered by respondents to be centralised, an operating hub for a number of core processes with the business and fundamental for the business success of the Water Corporation and the attainments of its business goals. Furthermore, interview respondents indicated that the SAP system would be essential to their business for decades to come. Implementing an ERP change was identified by interviewees as a very substantial business decision. In doing so, study participants recognised that the Water Corporation underwent a cultural change as well as an operational change. Accordingly, there were significant improvements in finance, materials managements, assets management, operational management, project management, and HR functions as a result of implementing the functionality of SAP. SAP was also considered by respondents to be a driver of operational, cultural and continual

change, as well as breaking down barriers and boundaries of a traditional siloed business of the Water Corporation making the utility less introspective. According to respondents:

Communication. //There needs to be a very effective communications process put in place as well as a reporting process.//

Better Communication. //I don't think the communication was well articulated and through the planning up front as to whether those targets were real and whether they were achievable. Secondly I think lack of leadership and commitment from executives for driving efficiency and thirdly I should add all this was being managed by a manager a realisation manager who was coordinating all this. Once that position no longer existed I think that you removed the ability to drive that train. //

Thinking outside boundaries. //There're lots of Thinking Outside Boundaries. What SAP does is, it gives you the ability to think beyond the boundaries, to rise to get what you currently have and it supports a rapid ability in an organisation to think about change in a different way.//
//Very much a provider of the tools that keep the business running.//

Desire to change. //Well, I believe the major factors that influence an organisation's desire to have a system like SAP is it's driven by desire to change. // //I think you could say you know, it's just an effective accounting system and what not but it isn't.//

Change. //The corporation was going through a cultural change as well as an operational change.//

// It's very much the operating hub for a number of core processes within the business. It's not the be all and end all for all processes so other processes may hang off the side of it but SAP has to be the core.//

//Now that the software is in place, it has to really drive the core processes, a lot of the core processes for all of the organisation.//

//You're only limited in your applications with SAP by your own imagination; and your own ability to change the environment you're in. Therefore, you can set the bar as high or as low as you like. For argument's sake, the Water Corporation significantly improved its finance; materials management; asset management; operational, project management functions and HR functions as a result of implementing the functionality of SAP.//

//So that - we're actually expecting them to do more: with less resources. // // In order to enable – for them to do that you need to give them the right tools. So BR is a process that is a tool of change. So change is more of a tool to be used to improve our business.//

Technology as an enabler. //So I guess I would say that the technology is more an enabler. So yes, it can be used to say hey we want to focus on this process. We're going to bring some technology in but you – but the reason you're bringing in the technology is because you do want to change the process.//

Lack of clarity about expectations. //Ah I think some of the barriers probably would be an issue of a lack of clarity about what the expectations were. More the expectations not being documented in a way that's easily measured.//

Siloed view. //The corporation at the time SAP was implemented had a very siloed or introspective view of the way it operated.//

//There were a number of operating divisions with operators as entities in their own rights i.e. little or separate businesses if you like.//

Clarity in strategic direction. //So that major change that was required of SAP was to convince the board and senior managers that a top down approach was necessary in order for SAP to be successful.//

//What it should be doing is providing clarity in strategic direction, a benefits realisation process needs to have a vision: set of objectives and those objectives need to be a balance. How they make – how they improve the business. Anything that improves the business is ultimately a benefit to the end-user. It makes their life much easier. It makes - it actually challenges them as well which is another important thing. //

//Respondents said additionally that it provides clarity if it's successfully completed. If some change has been identified some benefits are going to be obtained from that and if it is successfully completed then it should result in the change process being completed and therefore from the end-users point of view this is the chance which was one of those we'll now we have quality.// //If it hasn't been successfully done then what you might find is that the end-user is doing all the work or his role hasn't changed or has changed in a way that wasn't originally planned.//

Visionary tool. //It's a visionary tool so to speak; it's not like Microsoft office (which is very good). but it's a visionary tool set.//

//Well, I guess it's like all of those types of systems – once you've got them in place, they become almost the backbone under which you operate. You become captive somewhat to the system.//

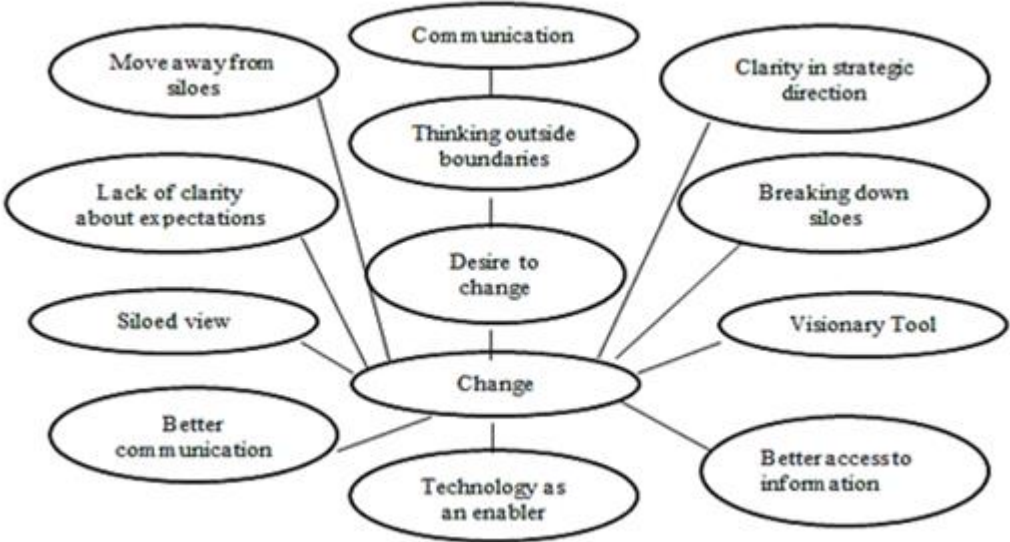
Breaking down siloes. //The accountability model the corporation's been trying to set up in the past couple of years has been partly to try to break down the silos.//

Move away from siloes. //The corporation at the time SAP was implemented, the corporation had a very silo-ed or interim view of the way it operated. There were a number of operating

divisions with operators as entities in their own rights i.e. little businesses if you like. So that major change that that was required of SAP was to convince the board and senior managers that a top down approach was necessary in order for SAP to be successful. //

Better access to information. //They are now able to access information more readily, have more control over their working environment. They are able to become – they are more productive!//

6.4.8 Water Corporation- Change



6.4.9. Reliability of Information (Water Corporation)

Findings show that in the utility one of the premises about the implementation of SAP was that users would be trying to eliminate as much interference by putting in mandatory fields and barriers for people entering data. This was contrary to the view that one entered the information once and you entered it correctly. People have underestimated the implications of that. It’s really about people managing the information properly in terms of quality and understanding. Study respondents viewed the reliability of information as follows:

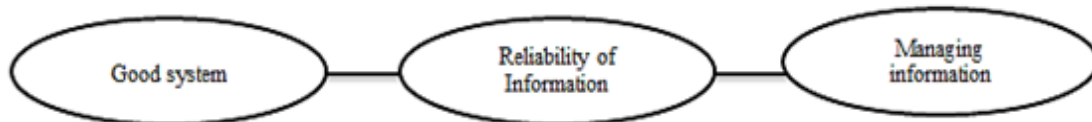
Reliability of information. //It’s reliable to the extent that the information put in is reliable. Garbage in, garbage out. We do see that. //

//From my experience, the implementation of SAP or I guess the 8 years we have had it in the organisation; people tend to be critical of some aspects of SAP mainly because of labour quality issues. There’s nothing wrong with SAP; it’s the way that people are entering the information.//

Good system. //Therefore, part of the issue is that users have when people say, “It’s not a good system it is a problem you can do nothing about.”//

Managing information. //It’s really about people not understanding it and that if you don’t if you don’t manage your information properly in terms of quality; what you enter is what you get out of it.//

6.4.9 Water Corporation- Reliability of Information



6.4.10. Resources (Water Corporation)

Findings show the implementation of SAP was well managed. It was implemented in a timely manner. It did not try to overachieve. As the implementation process was supported by a robust business case participants identified an excellent project management methodology. In addition, the Water Corporation took the view that if it was going to make the level of investment it was going to make, then the benefits/results needed to be very evident. Therefore, it would have more of these expensive business investments in order that the required business changes and associated benefits could be identified and subsequently monitored, which is what they did. Additionally, users identified receiving good SAP system support in the use of the SAP system, had access to dedicated resources providing expertise and other services when needed. A highly skilled dedicated resource (Benefits Realisation Team) was tasked with managing the focus of Benefits Realisation and the delivery of benefits as stated in the Business Case for The Water Corporation. Respondents discussed resourcing as followed:

Well managed process. //I think that we did have a pretty structured process which was around quite a lot and we were supposed to have had a structured process which we could actually follow. So there was genuinely management commitment; Y2K certainly helped because there was this well we’ve got to do something so let’s make sure we try and do it right but at the same time we try to do it we tried to make a successful SAP process change.//

//Well I’m glad that we’re given the tight time frames that existed. It was imperative that we had very tight planning to deliver so yeah I would think you’d need to have very good planning.//

Highly skilled dedicated resources. //Well the original what I should have said in the last question was the corporation made a strong commitment to benefit realisation as part of the initial implementation of SAP and as a result would have ideally put together a team of highly skilled dedicated resources to deal to manage the focus or assist the business in the management of the delivery of those benefits.//

Highly skilled team. //There needs to be a group of highly skilled individuals put together to drive benefits realisation processes with high credibility in the organisation as well as trust and empathy and do it.//

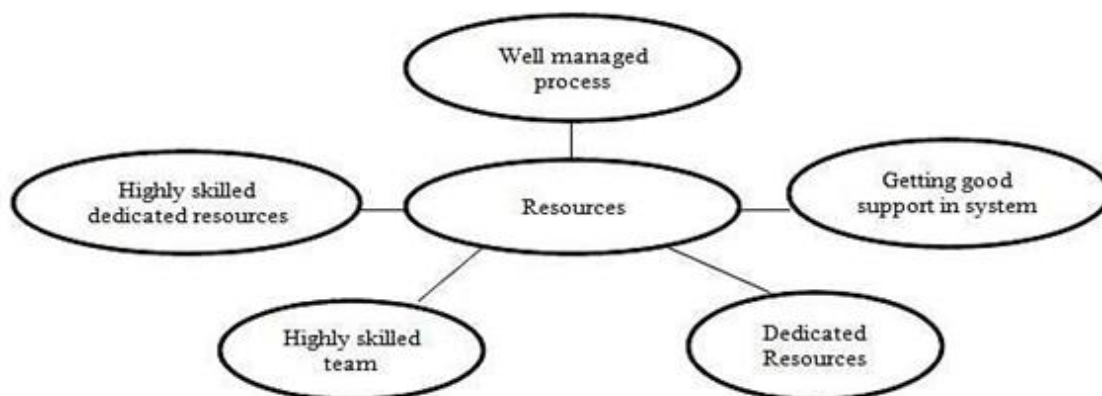
Resources. //It's very difficult to put, to develop a benefits realisation program and then create a team of people to manage that if you're not getting very strong support from the leadership of the organisation. By the leadership I mean the senior management of the organisation that really need to support the realisation program managers and the support people. They need to be held accountable for that.//

Getting good support in system. //If you're talking now, I think it is very much around trying to get a support system in place or a system in place that has a very good support capability and again drive the integration of the business together. But hopefully it then makes the bottom line for the business better because if it's not making the bottom line for the business better, then it's not going to be much use.//

//Look, I suppose the biggest thing at the end of the day that influenced the establishment was we had to have a system that would handle the 21st century.//

Dedicated Resources. //Also it was it was required to report back to the executive and board. So the structure was; there was a project director, and several other key resources supported by appropriate external resources when required in an admin function. So it wasn't a large team but it had extensive exposure to the executive and the Managing Director.//

6.4.10 Water Corporation- Resources



6.5 WestNet Group Infrastructure

The commentary and accounts provided by participants in WestNet Group Infrastructure is shown as findings below:

6.5.1. Integrated system (WNGI)

Findings from the interviews conducted with WNGI for this study indicate that the transitioning from multiple systems into one system has successfully occurred and respondents believe that integrating all systems into one system will enable benefits to be realised. Additionally there has been an opportunity to better understand process flow, its system impact and its impact on the business. Participants acknowledged that SAP was a good product, integrative and was a functional improvement on what existed previously. They supported its standard integration which worked well as long as the functionality remained static. Comments from respondents in relation to integrated systems are provided below:

Integrative. //It's a good product. It's very integrative but it only works if you have sort of a more standard integration and don't tend to change the functionality too much. //

//We've had no major problems around rear end or reporting or people using the system.//

Integrate multiple systems into one. //I think the fact that it's all one system is great and you can pull anything out of it as in group reports or anything. //

Partial Integration. //On the back of the requirements to implement it, it's really been a matter of a number of people within my team in the finance and administration team to understand the system, understand the impact of some of the entries the journals and the processes that they're dealing with.//

//We got three systems into one system and you know we've been able to restructure some of the financials and obviously as you said help with things like out at Jandakot, the longer term goal of getting all aspects onto SAP is really where the final benefits realisation will come.//

Integrate IT into business thinking. //Whereas before they would be fairly isolated, fairly specific activities, now what we are asking them to do is understand the whole process flow so that they are fully aware of what the impact is throughout the business throughout the system. In a nutshell it is working well. //

//So WNGI still has a task ahead of it to get to that point which would include maybe getting SAP onto WestNet Rail or along those lines. So there's been changes that has you know been put into place to get some benefits realisation as discussed.//

6.5.1 WestNet Group Infrastructure- Integrative

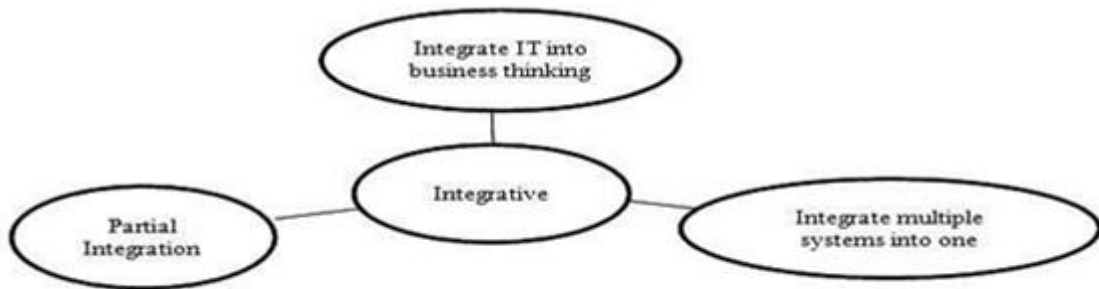


Table 6.2 Themes and Sub Themes West Net Group Infrastructure

	Themes	Sub Themes
1	Integrative	Integrate IT into business thinking Partial integration Integrate multiple systems into one
2	Leadership	Holistic view Need a mandate Future focus Ownership Co-ordinated approach Well managed process Clarity in strategic direction Operational clarity Lead to other initiatives Ground up approach Project team Quality of investment decision Hindsight
3	User Friendliness	Don't utilise full capacity Ease of use Flexible to user needs Reporting capacity Differentiated use Upgrades IT knowledge and systems Better understanding of the process Workflow Better functionality
4	Problem Solving	Core process Consolidated view of business Operational clarity SAP-IT's capacity Better functionality Prior knowledge of system Reporting capacity

		Reliable access to quality data
5	Planning	No baseline measure Cut-off period Short term view Reporting capacity Operational clarity Used a consultant's system Long term implementation or view Reliable access to quality data Enormity of the task Planned versus reactive Getting the timing right Pre-planning and interaction
6	Best Practice and Global Product	Visionary Tool Good System Upgrade of IT knowledge and systems Long Term investment or view Reliable access to quality data Keep up with technological change Upgrade of existing system
7	Culture/Change	Driver of cultural change Corporate culture Culture change Catalyst for cultural-change management Not always apparent Resistance to change Process change Cultural connection-change Technology as an enabler Reluctant to change
8	Communication	No formal or well-articulated BR system Not clearly understood BR Preview the software Reporting capacity Expectations Need a mandate Developing an understanding of why it's needed Communication
9	Reliability of Information	Current and future use Workflow Good System Multiple IT assets Appropriateness Reliable access to quality data Better understanding of the process Used a consultant's system Getting a good support system in place Better functionality
10	Training	Need for training – IT knowledge prior to implementation Better understanding of the process Better functionality Training prior to use Training
11	Realising Benefits	Greater business understanding Future improvements Business case checks and balances Delivery of benefits Recording of improvements/mistakes Benefits for investment Return on investment Quality of investment decisions

		Expenditure justification Money well spent Confidence in the product Business confidence in SAP Meeting business needs Built around business case Operational benefits Good system Beneficial Limited realisation No baseline measure Not clearly understood BR Compared with other companies Costs/Resourcing Don't utilise full capacity Not at the BR end No knowledge of BR programme No formal or well-articulated BR System Post implementation review Steps towards BR
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6.5.2. Leadership (WNGI)

Central to the issue of a successful SAP implementation was the role leadership management played in WNGI. Respondents stated that the analysis they carried out on SAP, the decision to adopt a Greenfields approach and build everything from the ground up, bringing together the project team, the structure and sourcing a supplier were influential factors contributing to a successful SAP implementation. Study interviews identified that improvements could be made by focusing on a more co-ordinated approach, appointing Process Owners and the inclusion of a Benefits Realisation program. Comments from participants included:

Operational Clarity. //I suppose presentation of the operational side of it would then show its ease of use and the benefits that it would realise. It is quite a simple tool to use especially with the reporting functionality of it. //

Project Team. //The project team was successful. I think it was having the correct people on the team to implement it and it was also the right people in place.//

Need a mandate. //You need a bit of a mandate from maybe the CFO (Chief Financial Officer) or somebody to sort of do that because a lot of people find it difficult from a jurisdiction point of view to go to a General Manager and say hey you have not really realised any benefits. It really has got to be the CFO who has to go and say you have not really achieved this so next time round don't expect me to sign off on something or whatever. So yes, it needs to be that way //

Future focus. //I guess that coordinated approach is obviously something that needs to be focused on in the future.//

Ownership. //I think that there needs to be an owner for the process. At the moment the owners are kind of dispersed across the business.//

//Everyone’s maybe looking at it piecemeal or not at all and at this stage you know if you were to actually do it across the whole of WNGI you would need to have someone ultimately responsible for that process and programme.//

Well managed process. //It is a coordinated approach putting on my finance hat. Obviously there are capital and operating expenditure restrictions. We need to make sure we get the best bang for our buck That’s not always easy.//

Quality of investment decision. //The quality of investment decision and the need to allocate the right amount of cash flow to the right project is significant. So I think that benefits realisation will have to play a bigger part in the future.//

Hindsight. //This is because you will need to justify these projects a lot more succinctly than we did before and as the regulatory regime, the access arrangement and the likeness to one of their works, it puts pressure on you as well to become more accurate around those benefits. So I guess the benefits realisation is starting to become much more important when you have got a scarce cash flow to forward, that previously the linkage to funding was not that important. But I think the tragedy is that the businesses do not understand that.//

Holistic view. //Well quite simply it’s looked at as an overall picture, holistic view on the whole process from product implementation or right at the beginning of deciding that you need a new product. Then right through to an after implementation feedback session, when you capture all of that.//

Clarity in strategic direction. //Clarity assists by enabling the end user to understand that there are other priorities within the business not specifically as in our case finance driven. Whereas in addition there is obviously a significant workload there in regards to operational requirements.//

6.5.2 WestNet Group Infrastructure- Leadership



6.5.3 User Friendliness (WNGI)

Interviewees utilising SAPs' full capacity remarked on the easy use of the program, particularly if they were aware of its full capacity. Encouraging people to use SAP became beneficial and assisted not only the user but the organisation more broadly. Interview participants stated that the reporting capabilities of SAP was of great benefit, due to its flexibility and better functionality. Greater understanding of the process provided more differentiated use, and over time familiarity with the structure increasing the level of people's knowledge during implementation helped to provide users with an understanding of the direction they were proceeding in. Furthermore, the application of workflow for users made the tasks easier and made it simpler for them to come to terms with the application.

Interview respondents comments about user friendliness included:

Flexible to user's needs. //SAP is such a big beast that you can spend your whole life putting every single bit of every piece together in it. So I guess you know it needs to be flexible to users' needs.//

User Friendliness. //Quite difficult to use without adequate training/

Ease of use. //Respondents indicate that the most important element would be the ease of use or the simplicity of use. The current system they were using was easy to use but they needed to know the structure to follow the process.//

Workflow. //I guess one of the areas that we haven't really worked on very well within WestNet Group Infrastructure is the workflow. The application itself. Obviously it's one of the major benefits. This is workflow for your end user, because you can circumnavigate many transactions by having an automatic workflow. That's something we haven't looked at significantly. Other organisations have been part of, have implemented a whole lot of workflow around legal approval, purchase order approval, whole ranges of different tasks. That makes it simpler for the user to come to grips with the application.//

Upgrades IT knowledge and systems. //The general users knew how more they were trained as monkey pressing buttons than actually fully understanding SAP as users. So one of the changes we needed to focus on was somehow to increase people's level of knowledge as we were implementing SAP so that they understood the ways we were going to go.//

Better Functionality. //It is important that better functionality can help us do a job in the most efficient manner.//

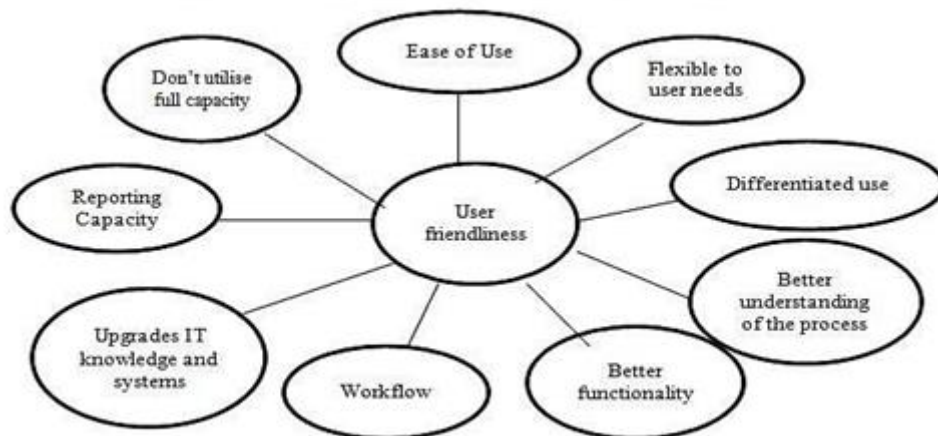
Better Understanding of the Process. //Better understanding of the process and relatively easy to use system are making improvements where we can be going forward.//

Differentiated Use. //Yes. In saying that, I don't know how much other areas use so I believe that some areas would be using but for us I think that you could do so much more with it. It's just knowing how to use it.// //I believe we can do a lot more with the system than we do currently.//

Reporting Capacity. //I think the things that would encourage people to use SAP would be the fact one of things that, in doing their jobs they've got to use it, but I think the reporting capabilities of SAP is subject from my personal view, I find that it is of is of great benefit.//

Don't utilise full capacity. //A lot easier, especially if we know everything it can do. I think it just, we don't have anybody down here that's a SAP guru as such, there's a I mean there's a couple in town that know a lot about it but we don't have someone down here. So if we all knew how to use it to its' full benefit it would be great.//

6.5.3 WestNet Group Infrastructure- User Friendliness



6.5.4. Problem Solver (WNGI)

The implementation of SAP was not considered by prime participants to be a truly new implementation as most of what was done was based on existing SAP usage previously in Alinta Gas. The previous SAP knowledge made it easier for WNGI managers to implement SAP. Respondents felt that the organisation knew what was needed and what they needed, to successfully implement SAP. Additionally a single SAP system provided operational clarity, reliable access to quality data, the opportunity to reduce IT costs going forward by consolidating many different applications onto the one application suite. It would also provide consistency

across the whole enterprise and was perceived to be the glue that would hold WNGI together and facilitate new business opportunities. Participants generally considered that SAP had become the source of truth across the organisation. Respondents' statements detailing the above summation are provided below:

Consolidated view of business. //I guess provide a consistency across the whole enterprise by having one in place, you know class system, dealing with the, we call it the fundamental data that runs the operation.// //Obviously each asset will have slightly different variants of data, but SAP is, was perceived to be the glue that will hold it all together plus facilitate any new assets or opportunities coming in across the organisation.// //So we can't, you know if we do consolidate our SAP digitally, there's no major asset sales or anything to transition the systems off or over to other companies. So I think for us it's more of a consolidation tool. It allows us to reduce IT costs going forward. It also allows us to add functionality to the processes that we do.//

Problem Solving. //Well I see it as a as an opportunity obviously to reduce IT costs going forward by consolidating many different applications onto the one application suite. Functionality and scope of SAP is at a point where you can utilise it.// //It's a role that is significant as it is now. It's a role that will increase in its significance. It is pretty much fundamental to one business already in regards to its utilisation and the expectation is that will be expanded across the organisation.

Core Process. //Well SAP is a core process in WestNet Group Infrastructure and is really the hub of it. It's become the source of truth across the organisation.// //It plays a big role. Everything is recorded in the SAP finance side of it; claiming side of it, maintenance side of it, reactive work. Everything is recorded in SAP. So it's a major part. // //I see the SAP-IT role as one that that covers all of the main business components of WestNet Infrastructure Group in an efficient way.//

SAP capacity. // Probably the expandability of the process and the support that we are currently finding with the new process.//

Reliable access to quality data. //Reliable access to quality data provides future expandability that we can see what is going into other areas.//

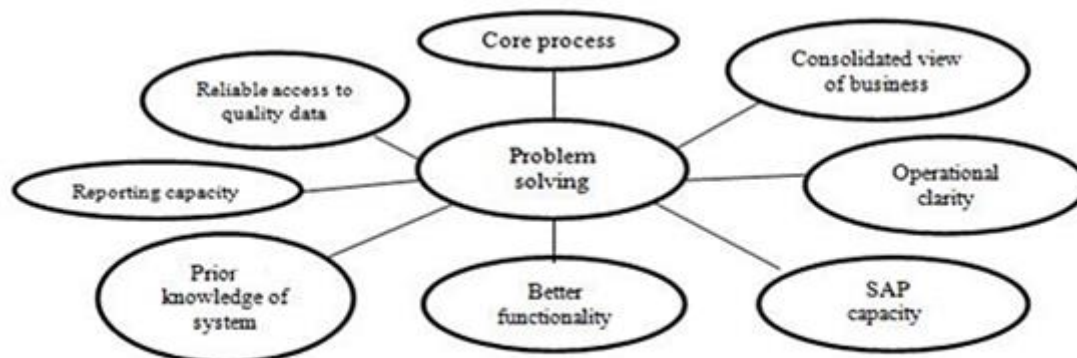
Reporting capacity. //The changes and the benefit realisation from where I'm coming from is fairly significant in that we now have individuals within the finance and administration realm who are able to extract very, very good data from the system and as I indicated before that is something that we will build on in the future.// //I think the reporting capabilities of SAP is of great benefit.//

Better functionality. //I think the things that would encourage people to use SAP would be the fact that one of things is that in doing their jobs they've got to use it.// //SAP's better functionality helps us do a job in the most efficient manner.//

Operational clarity. // Up front the things to encourage people to use it is a clear I suppose presentation of the operational side of it and that would then show it's ease of use and the benefits of that it would realise it is quite a simple tool to use especially with the reporting functionality of it.// //I tend to feel at the moment it's viewed as a transactional system, as opposed to a mechanism for finding out what you need to find out.//

Prior knowledge of system. //Well obviously we implemented SAP so it's the plate version for its' benefits, so it wasn't a true new implementation most of what we did was based on existing SAP that we used in Alinta Gas. That made it easier to make it a successful implementation because we had knowledge, we knew what we needed. There were very few changes. We didn't change how our chart accounts work or anything like that, or how the businesses are constructed, or what parts of the system they used. We just took three SAP systems and put them into one.//

6.5.4 WestNet Group Infrastructure- Problem Solving



6.5.5. Planning (WNGI)

According to research participants, the introduction of SAP was conducted in very much a project orientated way with significant detail and forward planning. It appeared clear to interviewees that WNGI was cognisant of the direction in which it was heading, as it had

experience utilising an unsupported version of SAP. Furthermore, respondents stated that one of the things that they had done differently with their implementation of SAP at WNGI was to use a template which was developed by Shared Services, PowerCorp, a Melbourne based utility company. Shared Services had invested considerably in developing their model. WNGI was reported by interview participants to have used this as a foundation to configure their SAP implementation. This made it a lot simpler than developing the model from the ground up. Nevertheless, interviewees identified that no baseline had been established which would have allowed WNGI to ascertain where costs have improved because of implementing SAP. Neither was there an established Benefits Realisation program put in place. It was reported by participants that in the end, SAP implementation cost the utility less despite having to pay for program configuration, tasks were shorter and did not require as much time. More time was spent on testing and making sure the business was happy with the functionality being rolled out. That approach was considered preferable from the WNGI point of view. Comments from participants in regard to planning are provided below:

Pre-planning and interaction. //I think the analysis we did up front on how do we go about SAP; our decision to take on a Greenfields approach and build everything from the ground up; build the project team and the structure; go out and source a supplier that came in with a level of competency in that space. I think those factors with the some engagement with the business we started from ground up was, was why the implementation was such a success.//

Operational clarity. //It didn't go, smoothly along the whole way but when you know we did hit the bumps along the way we had everyone's focus and buy-in to get over those bumps that happened in the SAP implementation.//

//Participants indicate that in a work plan, there's a lot of upfront planning in regards to the implementation of SAP.// //Up front the things to encourage people to use it is a clear I suppose presentation of the operational side of it and that would then show its' ease of use and the benefits of that it would realise it is quite a simple tool to use especially with the reporting functionality of it.// //I tend to feel at the moment it's viewed as a transactional system, as opposed to a mechanism for finding out what you need to find out//

No baseline measure. //There was no baseline, not a true baseline you know so that you can come back to in three years and say this is really how cost was based, and identify the specific areas where costs have improved because of implementing SAP. You don't tend to go to that level of detail.//

Getting the timing right. //There were barriers, a timing issue of getting you know project team together and if there's a deadline that's got to be met that is a barrier.//

Planned versus reactive. //As it is all reactive work we need some sort of, stresses to see what's ahead for us because it's reactive it's not planned//

Short term view. //A benefits realisation program is really strategic or I believe that it is a strategic approach to managing your assets in an organisation and I think that at the moment we are very short term. That's our fundamental issue. We are very short term. //

//I am not so sure that it is the nature of the business. So many utilities have a very clear direction they have obviously had the maturity to think about what their 5 to 10 year plans are so it is not that. I think it's maybe the size of the organisation.//

// If you are a much larger utility with many more customers or more loads on the distribution network. By default you have to have done this sort of stuff. But with the Perth distribution the network does not appear to be small but it doesn't appear to be dynamic. It kind of doesn't change that much. //

Long term implementation or view. //So you don't tend to focus on those 10 year views of things. You kind of look more, you tend to roll out annual things. So from that point of view the view is very short term so that benefits realisation which occurs over 3 to 5 years is not something that has been contemplated because your view is very short term. So yes that's what I think is a fundamental barrier.//

Cut off period. //What the main one I can think they went through, was they had to work out a cut off point rather than try and copy all the old records into the new system. So they picked on a 12 month process of keeping that record in the new system and everything else still goes accessibility into the old system as a read only.//

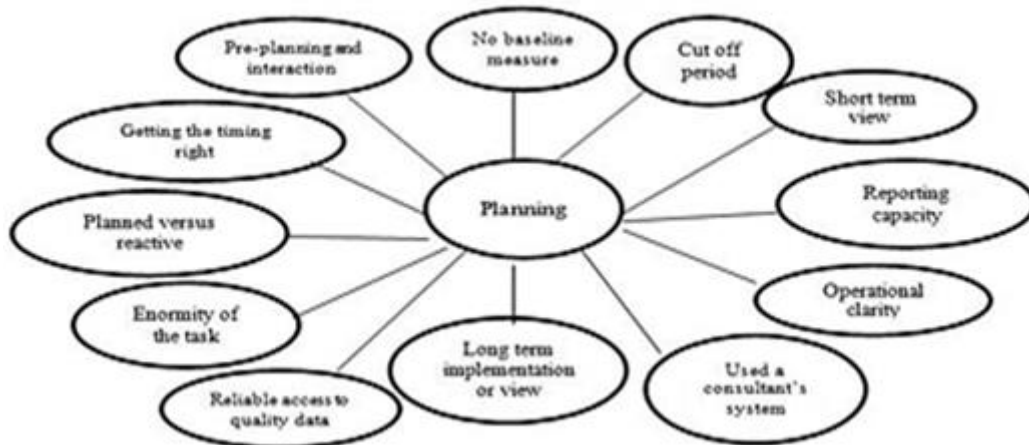
Reporting Capacity. //I think the things that would encourage people to use SAP would be the fact one of things that, in doing their jobs they've got to use it, but I think the reporting capabilities of SAP from my personal view is of great benefit.//

Used a consultant's system. //Yeah I think one of the things that we've done differently with our implementation of SAP here at WestNet is that we effectively used a consultant's template.

Reliable access to quality data. //The changes and the realisation that from where I'm coming from is fairly significant in that we now have individuals within the finance and administration realm who are able to extract very good data from the system. As I indicated before that is something that we will build on in the future.//

Enormity of the task. //It's one of those things I think people do underestimate. Data migration is huge! And we had three systems to bring data in from.

6.5.5 WestNet Group Infrastructure- Planning



6.5.6. Best Practice and Global Product (WNGI)

Respondents viewed SAP as a good system, a global product and as best practice. While WNGI had already used SAP with some success, it was reported by participants that users did not fully understand its capacity, strategies, capability and how to use the system effectively. According to research interviewees what became the focus was, increasing peoples' level of knowledge so as to take advantage of better functionality and more benefits through improved training. What had not been realised was the enormity of the tasks, the difficulty encountered in getting the timing right and the importance of establishing a clear cut off period. Respondents comments included:

Good system. // My perception of SAP-IT is it is a good system and easy to use. It makes you get the knowledge and I think it makes the system at WestNet Infrastructure Group real fast.//

Upgrade of existing system. //Well we I guess we basically did a functional upgrade from the earlier version of SAP that was implemented here at WestNet.//

Upgrading IT knowledge and systems. //The general users knew how they were more trained as monkey pressing buttons than actually fully understanding SAP as users so one of the changes we needed to focus on was somehow increase people's level of knowledge as we were implementing SAP. So that they understood the ways we were going to go do it.//

Long term investment or view. //For us to take advantage of the new functionality or the better functionality out of SAP we had to re-train them slightly and get them to understand the benefits out of that training which they did.//

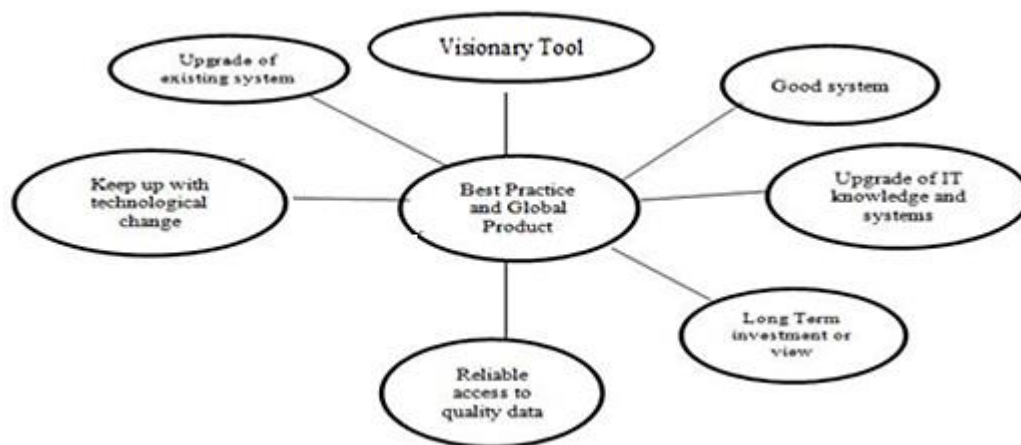
Best practice and global product. //However, that change management in any ERP system is crucial. If you get user buy in too. So it was more of just a changing of culture of actually understanding what the new system would do and how you know how it differs to how they had previously did their work.//

Reliable access to quality data. //The changes and the realisation from where I'm coming from is fairly significant in that we now have individuals within the finance and administration realm who are able to extract very, good data from the system and as I indicated before that is something that we will build on in the future.//

Visionary Tool. //The sort of things are obviously what you can extract from the system, the various interfaces that can be applied to the system, the seemingly infinite amount of use that you can apply to the system, the ability to extract the portal system to be able deal with quite complex data and that as indicated has been roughly some of the benefits that we have we're seeing at the moment.//

Keeping up with technological change. //Technology is always changing isn't it, so the case for an organisation to use it as the main source of information.//

6.5.6 WestNet Group Infrastructure- Best Practice and Global Product



6.5.7. Culture/Change (WNGI)

At the time WNGI was changing across its entire business which included human resources consequences according to respondents. WNGI was introducing new technology and therefore

introducing change to the business which according to interviewees was accompanied by resistance to change by employees particularly those who were not computer literate. As SAP was acknowledged by interviewees as a facilitator or catalyst for change so was the understanding that new technology would necessitate change management. Respondents acknowledged that many changes initiated by SAP were not apparent to them at the front end of the business. The template acquired from PowerCorp was designed to fast track the consolidation of SAP into a single system. According to interviewees, many employees did not like and were indeed scared of change.

Cultural connection/change. //I don't know if SAP is going to benefit the company and everybody in it and put a new culture in. I don't think there should be any barriers.//

//Again it might be change, people might think why; you are always going to get people that ask why; but I don't think that there should be any barriers.//

Resistance to change. //People don't like change. People, they're scared. So they're probably the main barrier.// //Also training if you've got it. If you have the right training, people will be happy to use it.//

Driver of cultural change. //The changes were really that the company was changing altogether at the same time and we were you know. But some of the areas that we needed to change within WestNet Infrastructure Group was with SAP which was quite heavily used before the level of knowledge of the business which wasn't that high. // //So I think, that's what made it a much easier implementation than if you were to do it from scratch and if you had no experiences. So maybe your column moves or something like that.//

Not always apparent. //A lot of the changes weren't apparent to us at the front end. I think most of it was done with IT. Although we did have interaction with the SAP Team who were looking at our operation and were taking back on board what we did to implement into the product itself.//

Process change. //Some of the process changes took place I think. I believe that our latest implementation was based on our existing business processes. So it was to suit our current business processes.//

//Yes process change. We used the template system. Yes it was brought in by the consultants from PowerCorp. I think one of the benefits would be to have consistent processes.//

Reluctance to change. //Yes I know. I don't know if it's going to benefit the company and everybody in it and put a new culture in. I don't think there should be any barriers. Again it might be change, people might think why. You are always going to get people that ask why, but I don't think that there should be any barriers.//

Cultural change. //If you can change the culture within a company you don't want to be the one standing over their shoulder. You feel like you are being a mother half the time and spoon feeding people. But if it was the culture it would make your job a lot easier.//

Catalyst for cultural change-Change Management. //Well I, to be honest I think, these days, I would challenge to say other than maybe some real fundamental IT infrastructure type projects. The majority of application projects in IT are change projects. If you're a project manager that doesn't understand that, you're going to fail more times than you'll succeed, in the IT space.//

// You cannot be someone who doesn't understand how a business ticks and expect to be able to project manage an application project for instance. You know most application projects have a targeted business requirement and most times you will introduce some element of change into the organisation. There are very few times where you just plug something in and everyone gets up the next day and it all looks the same and away you go. SAP is as you know an example of that.//

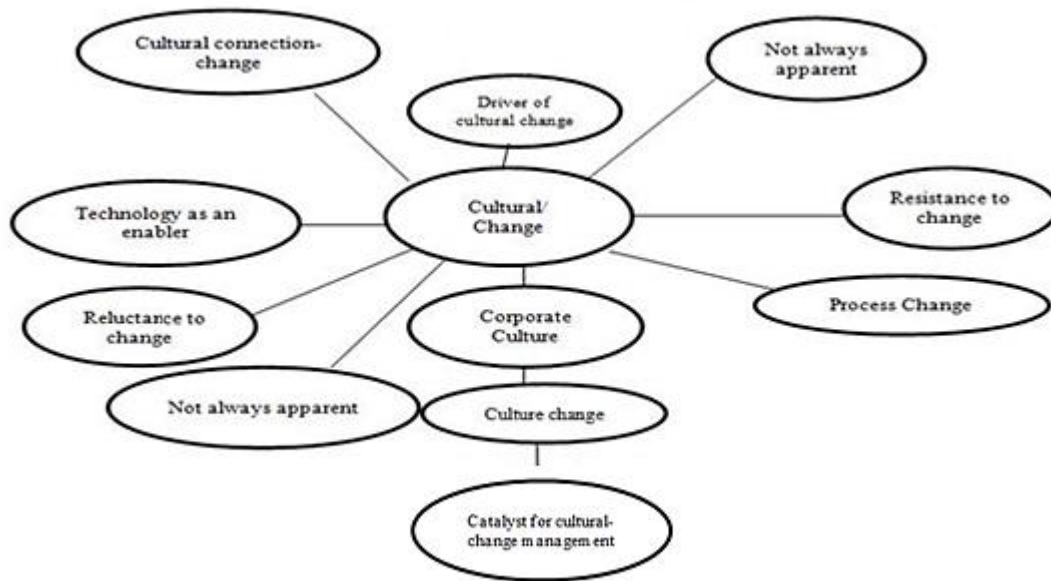
//Nearly everything that I've ever dealt with on the technology front will have an element of change management in your project an engagement of business and users because they will be impacted to some extent. Might be minimal might be massive. I think there are in most cases. I would say at the moment you introduce technology in an organisation there is an element of change and you know, a catalyst for change within that type of project.//

//It's a good question. I don't know whether to use it as a main catalyst for change. I guess going on what what's happened for us the catalyst for change was more I guess the situation, the corporate situation and the need for separation and having separate systems. I think the main catalyst of change is looking at the overall business processes and procedures and using technology to you know compliment that or to help drive that.//

Technology as an enabler. //I'm sure that there is other systems out there, I mean there's thousands of companies out there that probably don't have SAP, but because I think it's such a good system and I'm happy, I think we've done better with it.//

Corporate culture. It could be a timing issue it could be a cost issue it also, it might be less so, but to me it could be because I guess from an owner's perspective there are owner's about in the corporate world and, so it's not just WNGI's decision but WNGI's owners call. So I think that could be a barrier.//

6.5.7 WestNet Group Infrastructure- Culture/Change



6.5.8. Communication (WNGI)

Central to the successful implementation of SAP in WNGI was a clear communication strategy according to respondents which was up front and clear. It identified the “ground up” implementation and proposed a coordinated group or individuals that took leadership as well as identifying teams who were also involved. The mandate was to convert multiple systems into one SAP system. Nevertheless, perceived by some interviewees, was the lack of a formal or well-articulated outcome to realise benefits. Expectations were not clear and neither was Benefits Realisation clearly understood within WNGI. These themes are identified by respondents as outlined below:

Not clearly understood BR. //Benefits realisation is a difficult one you know is not clearly understood BR. Traditionally companies don't really do that very well. Nobody really tends to look two-three years down the track to see whether or not a project has actually delivered on its promises. The kind of same sort of approach is I guess what we are seeing here. It is more of a, nobody really wants to commit to have benefit realisation whether it be Full Time Equivalents (FTEs) or seeing what the savings are. I don't think there will be a future where we will be able to see the benefits like that and being able to document.// //We haven't captured a baseline or anything so we don't really know, how much implementing SAP has improved or reduced the

cost base. It may have obviously increased it in the short term but we don't have that initial baseline and that's the thing that you needed to do when you want to look at benefits realisation. You establish that baseline up front well before you do the project, so you know you've got something to compare to three years down the track after it's been bedded down in a steady state.

//

Reporting capacity. //I think the things that would encourage people to use SAP would be the fact that one of things that they are doing in their jobs makes them use it. However I think the reporting capabilities of SAP is of great benefit.//

//So they've got more visibility around staff and their staff movements. There are other improvements. Yes, I mean obviously costs around reporting has improved, and there's a bit more focus on grade improvement and around reporting. It's good to see a cost centre you know, the cost centre report by our general major accounting and the fact you can drill down into the purchasing transaction and things is helpful. I don't think we have been really well trained. So, at the moment we haven't got the full benefit of introducing SAP from the management accounting point of view. //

Preview to software. //A lot of the changes weren't apparent to us at the front end. I think most of it was done with IT. Although we did have interaction with the SAP Team who were looking at our operation and were taking back on board what we did to implement into the product itself.//

No formal or well articulated outcome. //No formal or well articulated BR system existed but projects are monitored within the structure of the PIR (Project Implementation Review) of the projects and tracks the progress of these projects which are generally based on the Princeton methodology which always has a sort of 360 degree review at the end of the project as a project limitation review and then further down the track is a benefits realisation. But across the whole board as a you know there is a continual review at a higher management level of have we got the benefits out of all these areas.//

Need a mandate. //You need a bit of a mandate from maybe the CFO (Chief Financial Officer) or somebody to sort of do that because a lot of people find it difficult from a jurisdiction point of view to go to a General Manager and say hey, you have not really realised any benefits. It really has got to be the CFO who has to go and say you have not really achieved this so next time round don't expect me to sign off on something or whatever. So it needs to be that way. //

Developing an understanding of why it's needed. //Usually getting everyone's understanding that is why you need to do it and it is usually the first step. This as I said this one was a little bit interesting in that even if there has been no benefits realisation you have to do the project. You, the company could be sold and you've got to split up so it was our, you know our focus was not

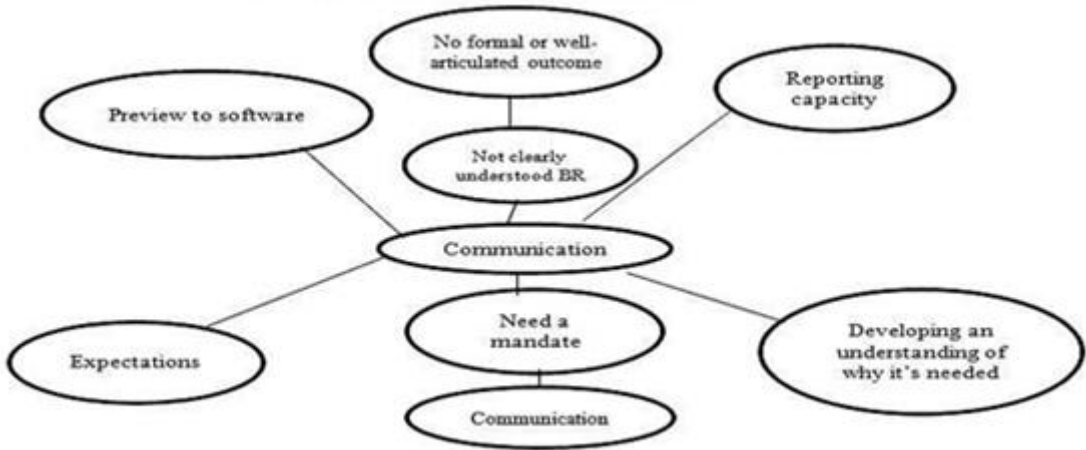
so much on benefits, it was getting the company separated but doing it in such a manner that we got the best bang for our bucks.//

//We had to go and spend making sure that the company got those benefits out of the split and SAP. You know if we're going to go into SAP then we do it well and put something in place that's going to set WestNet Infrastructure Group up for the future.//

Communication. //I think right upfront is quite a clear communication strategy, communication from the point of view of identifying appropriate individuals and teams and growing it from the bottom up to a coordinated group or individuals that take leadership in that program.//

Expectations. //I definitely think it is because like all things you go down the road of purchasing or implementing a program, you want to make sure that a) you're getting the best for, best for your dollar and b) that it is being used as you want it to be used.//

6.5.8 WestNet Group Infrastructure- Communication



6.5.9. Reliability of Information (WNGI)

WNGI clearly took a different approach to the implementation of SAP. Interviewees claimed that this made it a lot simpler than developing it from scratch, as it cost less due to time saved. Additionally WestNet Group Infrastructure was happy with the functionality being rolled out. Respondents thought that this approach was made better from a WestNet Group Infrastructure point of view and commented accordingly:

Workflow. //I guess one of the areas that we haven't really worked on very well within WestNet is the workflow. The application itself. Obviously one of the major benefits is workflow for your end user, because you can circumnavigate many transactions by having an automatic workflow and that's somewhere we haven't looked at significantly. Other organisations have been part of, have implemented whole lot of workflow around legal approval, purchase order approval, and a whole range of different tasks that make it simpler for the user to come to grips with the application.//

Current and future use. //At the moment it's a fairly established process but I can see in the future its use expanding to other areas as well and other applications.//

Getting a good support system in place. //So what happens is you do have those drivers to simplify your application landscape and SAP gives you the opportunity of doing that because it covers such a functional scope //

Reliable access to quality data. //The changes and the realisation from where I'm coming from is fairly significant in that we now have individuals within the finance and administration realm who are able to extract very, very good data from the system. As I indicated before that is something that we will build on in the future.//

Multiple IT assets. //SAP has got a lot of bolt-ons like you know they've built business objects and bought a whole other raft of different plug-ins to it. Other third parties have built similar plug-ins. So the breadth that you can get across an organisation in terms of just having everything in SAP you know is obviously as you get bigger in size is appealing to a company because you can leverage off one asset rather than have multiple IT assets out there trying to cover the same space.//

Good system. //Relatively easy to use system which gives better understanding of the process and they are making improvements where we can going forward.//

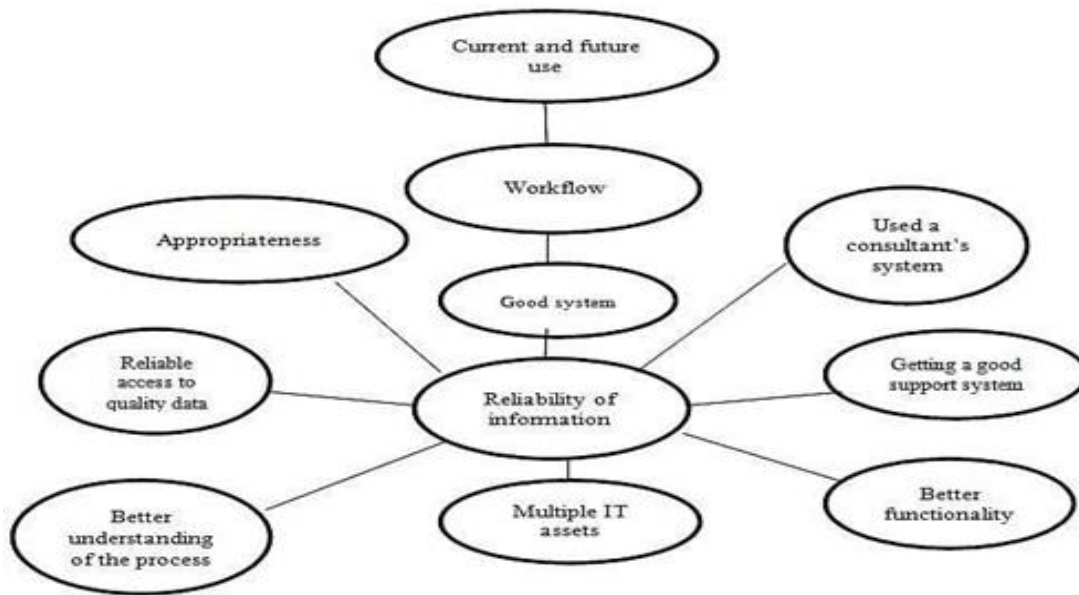
Appropriateness. //Appropriateness is probably the biggest thing with any SAP-IT system.//

Used a consultant's system. //I think one of the things that we we've done differently with our implementation of SAP here at WestNet is that we effectively used a consultant's template.//

Better functionality. //It is important the aspect of we can do a job in the most efficient manner.//

Better understanding of the process. //For us to take advantage of the new functionality or the better functionality out of SAP we had to re-train them slightly and get them to understand the benefits out of that training which they did. //

6.5.9 WestNet Group Infrastructure- Reliability of Information



6.5.10. Training (WNGI)

WNGI looks at a distributive user approach where users are self-sufficient and everyone can be considered a SAP user. So the first barrier to adequate implementation in WNGI was computer literacy of employees. Interviewees identified the first challenge associated with SAP was to bring people up to a speed so they had a rudimentary knowledge to function in an IT context. Developing computer literacy and exposure to the user interface of SAP systems was reported by participants as an initial yet difficult step. Interviewees identified that many employees struggled with the technology and seeking input across the company before designing and implementing training was an important step. This led to high training costs due to co-ordinating training and providing clarity so that users could extract the greatest benefit. Interviewees considered that training is purely orientational to enable them to rapidly reach a level of functionality where they are using most of their information.

Comments include:

Training prior to use. //Training's a big issue and getting peoples' input before they implement it is probably the most important part. //

//Obviously I think one of the more important elements that we are grappling with at the moment is on the human interface with, the training, and extracting as much as we possibly can get from our investment in SAP.//

Need for training-IT knowledge prior to implementation. //Yes, there's no point bringing it in and then having training. You need some training before it's implemented as well, because you can't train everybody at once. //

//Probably the main barrier, unless an organisation has exposure to SAP, could be because it has a lot of functionality in it. So unless the people have experience at that and/or it is not put to them properly then it might frighten off, frighten them away with its complexity.//

//It can be frustrating to get a better understanding of the process from the point of view of the time taken and the amount of cost and resources required to make what I consider to be fairly simple and straightforward changes.//

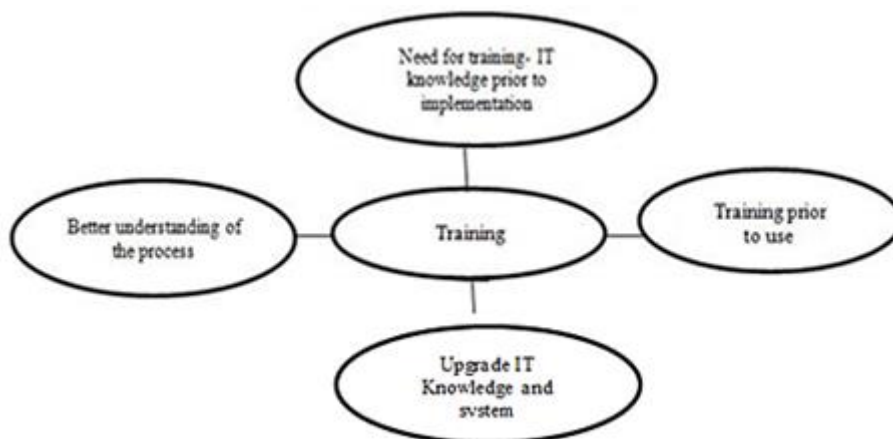
//There were very few areas of major change. So there was very limited training done.// But there was a lot of communication about if the system will do the work, what data will be transferred across, what month, what needs to be migrated, what we can do and what we can't do.//

Better understanding of the process. //For us to take advantage of the new functionality or the better functionality out of SAP we had to re-train them slightly and get them to understand the benefits out of that training which they did. //

//That change management in any ERP system is crucial if you are to get user buy in to it. So it was more of just a changing of culture, of actually understanding what the new system would do and how different to how they had previously done their work.//

Upgrade IT knowledge and system. //Training is purely education now to get them to a level where they are actually owning more of their information than we are. So, I suppose the benefits are not too changeable at the moment apart from where we've replaced three systems and set up one.//

6.5.9 WestNet Group Infrastructure- Reliability of Information



6.5.11. Realising Benefits (WNGI)

Benefits realisation had proved difficult for WNGI and was not clearly understood reported interviewees. Traditionally companies tend to not undertake this aspect as few companies plan to evaluate the effectiveness of an organisational change some two or three years down the track and determine whether it has met its promised deliverables. This was the case reported by WNGI study respondents, who acknowledged a lack of commitment to any benefit realisation analysis. As WNGI did not capture a baseline, it would not be possible for them to ascertain if implementing SAP has improved or reduced the cost base. Establishing a baseline before project implementation is essential to understanding the realisation of benefits. It was reported by interview participants that management in WNGI did not take into account the importance of monitoring benefits that accrued from running the SAP system. Existing systems included tracking benefits on a project only basis through the Princeton methodology. Nevertheless, study participants did acknowledge that the realising of benefits was informally undertaken through continual reviews conducted by upper management. Study participants in general, had a reasonable understanding of the imperative to obtain a business benefit from implementing SAP-IT not just a system benefit.

Beneficial. //SAP-IT system has been very successfully implemented in WestNet Group Infrastructure and going down the path of the Greenfields implementation has added a lot of benefits to the business so far. So across the business it has been perceived as a success what we've put in place.// //I think it could be for people that really need to know the benefits I think it's very beneficial.//

Good system. //My perception of SAP-IT is it is a good system and easy to use. It makes you get the knowledge and think it makes the system at WestNet Infrastructure Group real fast.//

Meeting business needs.//A lot of systems have been brought in without getting input from the people that use it in certain areas. So it was coming down here and getting feedback from people to see what they wanted rather than just bringing it in and then no one knowing how to use it or not using it correctly. So it's getting that feedback before.//

//Well if we didn't have an all-in-one system we would have to have more than one system. So there'd be extra costs and there'd be the fact of trying to build enhancements so that one system can talk to another.//

No baseline measure. //Yes no baseline, not a true baseline you know so that you can come back to in three years and say this is really how it is cost based, and kind of identify that these are the

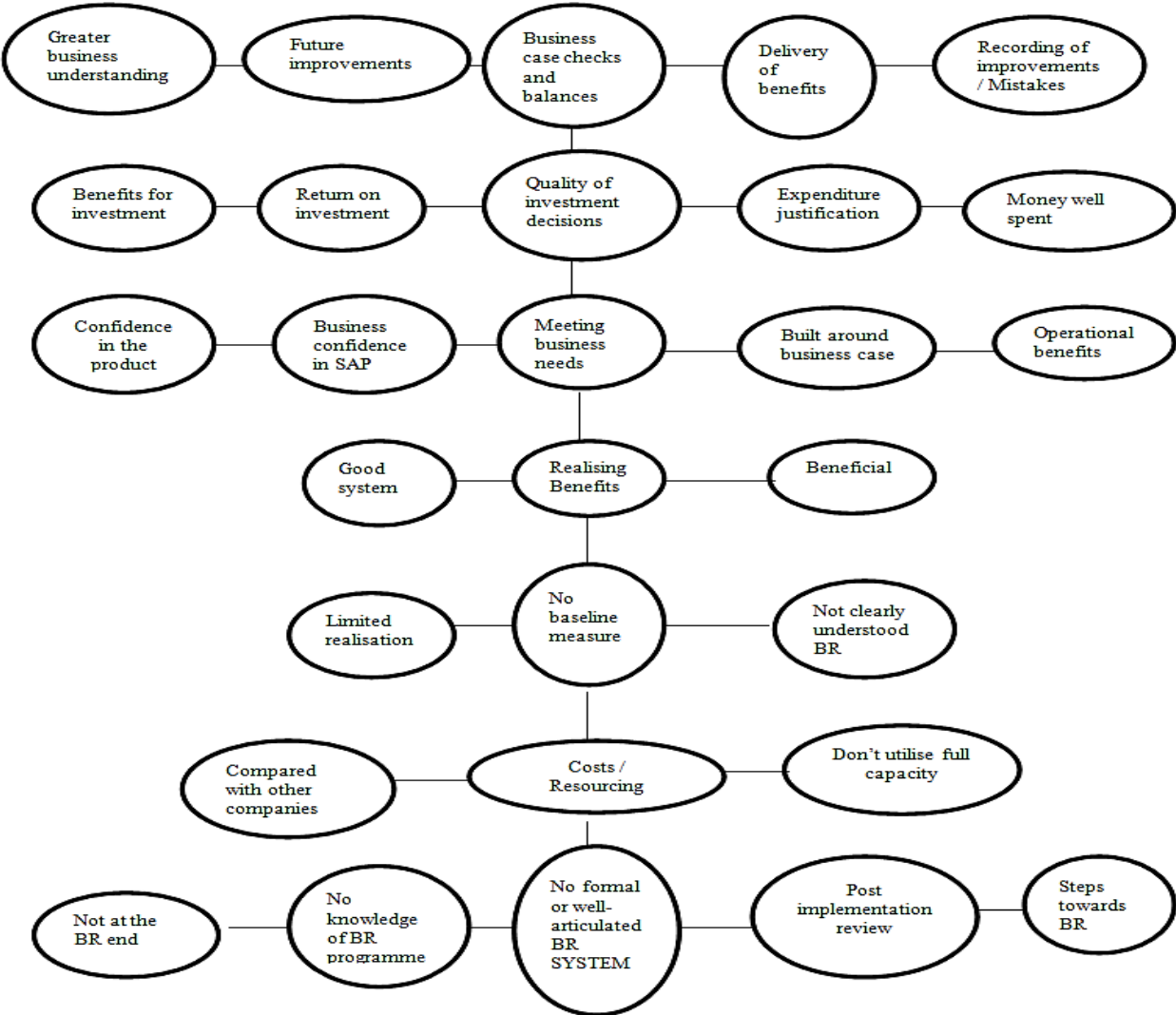
specific areas where costs have improved because of implementing SAP. You don't tend to go to that level of detail.

Cost/Resourcing. //I think one of the barriers to be putting SAP in place would be cost, but cost is a barrier to putting any new system in, or enhancing or updating a system.

//I definitely think it is because like all things you go down the road of purchasing or implementing a program, you want to make sure that a) you're getting the best for your dollar and b) that it is being used as you want it to be used. Obviously cost is one and the other is resources.

//The significant ones are of knowing what you want up front and sticking to that, otherwise your cost just blows out. I suppose from my point of view the biggest cost is implementing a new system with functionality but we all knew before it could change. We also had to test migration as well which was costly.

6.5.11 WestNet Group Infrastructure- Benefits Realisation



//We have an issue at the moment people don't believe that we do have any benefits from running the system. They think it's just an expensive lump. But what's happened is they've said the IT transition cost 26 million and they all believe that's what SAP costs. SAP wasn't even a third of that so, how can you say that that was a big cost when actually most of the cost was on servers and apps, and other things. Such as networks, phone systems and everything else that was needed to set the business up on its own infrastructure. People seem to think that SAP was the big cost, but it wasn't. I think maybe we should have had someone working in that situation where we, could influence the costs. //

Limited Realisation. //It is, but I don't think people realise, and I know you said realise, don't think people realise what that benefit has really been to them, because it's only been a matter of months. You know 8 months since SAP went live. So I think there are huge benefits to be had which is why I said that they realised it but they're using 50-75% of the system and we need to get that other 25% which would really make business, would make everything in the business easier for everybody and that would be a significant benefit. At the moment, they'd just see it as like-for-like.//

Not at the BR end. //I don't think we have got to the BR end, not at that point yet. I don't think that we have run the benefits out of SAP itself. At the moment it kind of seems that it is the back end system collecting data but is not seen as a tool to facilitate decision making.//

Steps towards BR. //I think that the changes of the business need to embrace the applications and start looking at some of these functionalities and start looking outside of the standard cluster of these reporting items. Looking at some other ways we can use the system to predict asset – asset, future asset values and things like this to get more out of it. Using it in conjunction with other systems such as business intelligence, things like business objects and other tools which we can combine data from SAP with such equipment as the history with geographical information loads within our GIA system so that it is kind of where benefits realisation will start to come once we start taking that approach. From SAP itself I think we still need to explore its functionality and we need to turn on functionality but resistance to change is a big issue. Just can't keep on introducing this new functionality if the business does not really want it or are comfortable doing it the way they have always done it which could be an issue in its own right. Yes that is a challenge in its own right. //

No formal or well articulated BR system. //No BR system within the structure of the capital projects. Tracks projects but are generally based on a Princeton methodology which always has

a sort of 360 degree review at the end of the project as a project limitation review and then further down the track is a benefits realisation. // So across the whole board as you know there is a continual review at a higher management level of have we got the benefits out of all these areas.//

Post implementation review. //There was post implementation review but it has never been finalised and it's never been published. It has been collected. Only two people have seen it I believe. I'm sure if you spoke, to the SAP Application Manager, I'm sure he has custodianship of it. It's just never been published, but it was done, soon after we went live.//

Built around business case. //From a management perspective, you know, you have basically brought a whole bunch of business cases and you know, opportunities that you need to assess as you are going along and obviously a business case is based always around some type of perceived pay back or benefit to the organisation. So the reality is if you don't have some sort of benefits realisation project to track the program you'll never know whether or not what you actually paid for is what you've received at the end of the day or whether the metrics within the business case has come to fruition or not.//

Future improvements. //The benefits of such a program would be to I guess justify the decision to go with SAP. It can be used also for future projects and it can be used for improvements going forward.//

Quality of investment decision. //We need to allocate the right amount of cash flow to the right project and demonstrate the quality of investment decisions. So I think that benefits realisation will have to play a bigger part in the future because you will need to justify these projects a lot more succinctly than we did before. The regulatory regime, the access arrangement and the likeness to one of their works puts pressure on you as well to become more accurate around those benefits. So I guess the benefits realisation is starting to become much more important when you have got a scarce cash flow to forward that previously the linkage to funding was not that important. But I think the tragedy is that the businesses do not understand that. //

Return on Investment. //Return on investment would be communicating exactly what you've done and reliably what you've spent and why your return on investment. I don't think people realise that. They really don't. I mean they probably think from a management perspective it would be really useful if they did realise exactly what had really happened.//

//I think you know and examine which benefit type day-to-day.//

//Yes, definitely it would be a huge benefit. I think it would stop a lot of the questions throughout the project.//

Confidence in the Product. //Benefits are important because they give you confidence in the product you've got. It also lets you see that your processes in purchasing and viewing products is robust.//

Expenditure justification. //Well if you don't have benefits you wouldn't spend the money. The reality is you're not going to spend it if you're not going to get it so.//

Operational Benefits. //Well everybody would be doing it as a whole wouldn't they? Rather than just the one person.//

//From an Operational Benefits view, it's easier in the future to sell things if you realise the benefits of what you're doing. If you don't realise but you have some benefits it's very difficult and that's where we're at the moment.//

//I believe that it would make a huge difference if everyone in this business knew what exactly that system does that we use everyday. It's not just a finance system. It works also as an asset management system. It manages plants, it manages jobs, it manages projects, it manages payroll, it manages finances and I think that would then influence their decision. I don't think they realise it. So, the benefits are that important because we need to obviously keep the system going. What are we going to do? Are we going to turn it off? You can't turn it off.//

Benefits for Investment. //For me from an IT perspective I guess the benefits realisation program would mean that only those projects with a true benefit would get up. Would make it through the authorisation process and we would have less of an overhead of the projects to complete and deliver on time. I think that it is sort of like a natural selection process you end up getting only the cream that floats to the top so as to speak and you end up with a program of work that is much more focused, much more concentrated and strategically aligned.//

Delivery of Benefits. //I think delivery of benefits I've covered previously. It's more around as I said making sure that if there is any money invested it's actually invested towards the business goal. You know not getting to the case where using IT as the industry little hiccup that seems to be brought up all the time. You know IT's there to facilitate business not business to facilitate IT you know. Make sure if you do something like implement SAP-IT you're going to get a business benefit out of it. Not just a system benefit. Commercially it is important because you are taking people on that journey with you. //

Greater business understanding. //Greater business understanding is very important. Something that we use continuously, which we get all our information out of, we put all our information into it. So understanding what it can do is very important.//

Not Clearly Understood BR. //Benefits realisation is a difficult one you know traditionally companies don't really do that very well. Nobody really tends to look two-three years down the

track to see whether or not a project has actually delivered on its promised. The kind of the same sort of approach is I guess what we are seeing here is more sort of a, nobody really wants to commit to have benefit realisation whether it be FTEs seeing what the savings are.//

No Knowledge of BR Program. //I don't know!//

Compared with other companies. //The benefits realisation that I have been involved in, in other companies people were coming back 2 or 3 years later reviewing the business cases, reviewing the benefits. Then going back to businesses and obviously having this baseline to be able to go back and say OK well you know your costs have not really reduced in this area you have actually employed more people. That's where you realise those benefits and then recording that.//

Business confidence in SAP. //The benefits there would be a) a realisation that yes the product was worth buying and b) that the meat and what's that we were seeing before the product was bought are actually being met.//

Business case checks and balances. //Well I mean as I said one is you're going to basically track to see if you know once you've signed something off if you're going to get a 360 review back to tell you that, whether you have achieved it but also you tend to find it will have a flow on effect to even when business cases are prepared. Because if people know that you actually will come back to assess to see whether things were achieved, you'll less, you're more likely to be a bit more robust and realistic in your uh upfront estimates as well and also you'll give your mechanisms a check against business cases that have come in.//

Recording of improvements/mistakes. We know what we wanted to achieve. That would have been set up in the documents. This realisation program would record and show actually what the benefits were realised. If there were any what the negatives were well it would document you know the improvements, the benefits to the company.

6.6 Summary

This chapter outlined the major categories of findings related to the use of SAP and realisation of benefits in the two utilities researched. It presented the research findings in dominant themes or sub themes in relation to participants' understanding of SAP, realisation of benefits, the challenges, issues and uncertainties in the two utilities experienced during the implementation of SAP. These are discussed further in Chapter 7 and Chapter 8, where conclusions are drawn in relation to the implementation of SAP, Realising Benefits and Change Management.

In summary, the 21 themes illustrated with data from the transcripts were presented as findings in this chapter. The findings presented covered many issues companies face when implementing

an Enterprise Resource Planning (ERP) system such as SAP. This is complemented by the complexities of technological adoption by employees. Issues included leadership, political and economic implications on the respective workforces. These issues are notionally supported by some of the literature cited in previous chapters and confirmed in this chapter and also Chapter 7.

Chapter 7:

DISCUSSION

“And I will rebuke the devourer for your sakes, and he shall not destroy the fruits of your ground; neither shall your vine cast her fruit before the time in the field, saith the LORD of hosts.” Mal. 3:11(AKJV)

7.1 Discussion

In Chapter 4, Methodology, the phases of data analysis were described. The outcome of this resulted in 21 themes containing data relevant to the implementation of SAP and the realisation of benefits in the two utilities. These were the Water Corporation of W.A (WCWA) and WestNet Group Infrastructure WA (WNGI). This chapter works to bring the issues that have emerged and been discussed throughout this thesis back to a concluding overview.

The 21 themes, illustrated with data from the transcripts, were presented as findings in Chapter 6. In order to answer the research question, (**“How have the Water Corporation of WA and WestNet Group Infrastructure WA implemented and utilised SAP-IT?”**) the researcher using the grounded theory principle of emergence took the 21 themes presented as findings. A further level of analysis is described in section 7.2 of this chapter, in order to support the data as it unfolded inductively and deductively. The researcher kept in mind that the grounded theory task is to keep discovering and generating theory in a systematic yet emergent way. (Glaser & Strauss, 1967) The researcher also took into account Whiteley’s view that when researching business organisations there are antecedents impinging on the method that affects the extent of the emergence. Whiteley describes that “some forcing of constructs will usually happen simply because of the existing meaning, structures and functions operating as the organisational framework”. (Whiteley, 2000, p 4)

The researcher, informed by the approach recommended in grounded theory chose to analyse the data carefully, working through it, crafting the responses from interviewees as they articulated their stories in relation to the application of SAP and the realisation of benefits. This measured process highlighted the major issues emerging as findings and reflected upon, the current and future applications of SAP and Benefits Realisation in both utilities.

In Chapter 6, the findings presented covered many issues companies face when implementing an Enterprise Resource Planning (ERP) system such as SAP. This is complicated by the complexities of technological adoption by employees. Issues included leadership, political and economic implications and the effect on the respective workforces. These issues are notionally supported by some of the literature cited in previous chapters and confirmed in this chapter.

7.2 Supporting the data

Following the principles of grounded research (Whiteley 2002) it was imperative to use the data from respondents to ground the study. The following phases were undertaken in a further analysis of data.

Phase 1	Read for understanding. Let the data speak. 500 non-hierarchical nodes developed for initial interpretation.
Phase 2	Merge data into broad themes retaining non-hierarchical structure.
Phase 3	Develop a node coding hierarchy.
Phase 4	Each of the node coding reports was analysed for keywords/ concepts.
Phase 5	With each node using associated node report, look for similarities, differences, subtleties and complexities with each theme to form sub themes e.g Process Analyst.
Phase 6	These results were then combined into one coding framework.
Phase 7	The data was reviewed and grouped into 21 themes: 10 for The Water Corporation and 11 for WestNet Group Infrastructure.

7.3 Themes/Sub Themes

The key themes that emerged for a comparative study of Benefits Realisation and Change Management using ERP Technology (SAP) in two Western Australian utility enterprises are as follows:-

1. **Integration** was a frequently repeated theme across all interviews and was considered key to the successful implementation of SAP as an ERP product operating seamlessly across the business in its totality.
2. **Process Analyst** role was designated to senior managers across the organisation to be accountable throughout the implementation process, in the Water Corporation. This appears to be both an outcome and a theme.
3. **Leadership** indicated that the sponsorship of the projects in each utility has provided a mandate to manage the respective SAP implementations. This theme also appeared in most interviews.
4. **User Friendliness** challenged SAP-IT users to look at their business in different ways, improving and adding benefits to the business which ultimately was to the advantage of system users.
5. **Problem solving** enabled consistency across the whole enterprise by having a consolidated view of the business. SAP is considered a great problem solver and can provide relevant responses to business questions.
6. **Planning** was an often repeated theme in interviews as it greatly assists business to focus on all important operational areas. Planning also assisted in playing a key role in an ERP implementation such as SAP.
7. **Best Practice and Global Product** provides a beneficial result to the business overall. The fact that SAP has such a wide base across the world gives it global reach for benchmarking and best practice.
8. **Change/Culture** provides the ability and capacity to think beyond the boundaries. SAP-IT provides a rapid ability to conceptualise change in

different ways. SAP supports continual change but change has to be innovative, creative, different and it needs to support the business.

9. **Reliability of Information** was important to the extent that information that was put into SAP was accurate and reliable. SAP is a good system, easy to use, speedily providing appropriate, quality, responsive, reliable information.
10. **Resource** understanding was based around cost reduction and the appropriate use of resources. Both utilities were considered to be appropriately resourced and supported.
11. **Communication** was another recurring theme in interviews and is affected by the organisational context and information flow for successful ERP implementation. Communication plays a central role in the acquisition, implementation and realising of benefits in any ERP software.
12. **Training** was a significant issue with the implementation of SAP, particularly the approach to and the timing of training.
13. **Realising benefits** appeared repeatedly in interviews and although benefits were acknowledged as meeting the business needs of both utilities, only the Water Corporation had a formalised process for measuring deliverables.

Some common themes shared by both utilities emerged in regard to Integrative, Leadership, User Friendliness, Planning and Benefits Realisation and will be discussed further.

Integrative Theme was considered key to the successful implementation of SAP as an ERP product operating seamlessly across the business supporting the business in its totality.

McDonagh (2005, p. 111) captures much of the sentiment expressed by research participants regarding the importance of integrating ERP into the current business operations, in the following quote:

While the business press is awash with claims that investing in enterprise-wide systems is the key to delivering superior economic performance, unfortunately it appears that reaping the benefits of such IT investments is fraught with difficulty. Indeed, the introduction of IT into work organisations is generally marred with persistent reports of underperformance and

failure. Executive management tend to view the introduction of IT as an economic imperative while IT specialists tend to view it as a technical imperative. The coalescent nature of these two imperatives is such that the human and organisational aspects of IT related change are frequently marginalized and ignored. Achieving a more integrated approach to the introduction of IT is inordinately difficult since the narrow perspectives embraced by the executive and IT communities do not naturally attend to change in an integrated manner.

All interview participants had a range of views about the integrative and process analyst constructs relating to the implementation and application of SAP in both utilities. It is apparent from the responses in the interviews that the implementation and application of SAP in both utilities for these themes have been viewed favourably as useful tools which can help drive and support the business in a meaningful way. According to the interviewees SAP-IT has facilitated the integration of the business as it tends to force or compel integration. Additionally, SAP provided many process benefits in both organisations and particularly in the organising of integrating multiple systems into one. Furthermore, WestNet Group Infrastructure participants consider SAP to be a good, integrative product but it only works well with a more standardised integration, clear roles and if the functionality is not altered too much. The accountability framework clearly illustrates and designates what is to be undertaken by the different roles in the Water Corporation ensuring greater clarity. This ultimately facilitates better services to customers.

The Water Corporation was able to achieve this by implementing a process of what would be called process analyst where senior managers usually general managers from across the organisation were made accountable for a particular process. This makes this high level of managers responsible for the process across the whole corporation providing both the opportunity and knowledge to argue for standardisation of functions relating to accounting, procurement, asset management functions to name a few key areas. This subsequently has provided the basis for the Corporation to move towards realising its accountability framework as shown in Figure 7.1. There are two types of accountabilities in the Water Corporation, viz. Corporate Accountabilities and Line Accountabilities as described and depicted in Fig. 7.1, p. 140.

Responses from the interviewees in relation to the leadership theme indicate that the sponsorship of the project in each utility by the CEO and Corporate Executive has provided a mandate which has influenced and supported what had been a well-managed project. A coordinated approach,

clarity in strategic direction, adopting a holistic approach and appointing the right people with the right skill mix to the project team all contributed to the successful implementation of SAP in both utilities and to the realisation of benefits in the Water Corporation WA.

WATER CORPORATION ACCOUNTABILITIES

VERSION 4
Approved by Chief Operating Officer on 10 November 2005

There are two types of Accountability:

- CORPORATE ACCOUNTABILITY**
The management of processes and activities that span the whole business. Process Owners and Process Managers are corporately accountable.
 - LINE ACCOUNTABILITY**
The management of activities or process over which a person has formal line or position control. All employees of the Corporation are line accountable.
- For example*
The Manager Corporate Human Resources is accountable for ensuring there is a corporate recruitment process and that education and training has occurred in its use.
Line accountability would rest with the Line Manager for ensuring the recruitment activity is carried out in his/her own area within the framework of the corporate process

Corporate Accountability

The **CHIEF OPERATING OFFICER** has overall corporate accountability to:

Ensure that the provision of water, wastewater and drainage services achieves business outcomes through the integration of processes.

PROCESS OWNERS are corporately accountable for:

- Overall strategic leadership & direction for their process through:
 - Setting corporate strategy & targets;
 - Monitoring the performance of their process;
 - Driving process improvements.

PROCESS MANAGERS are corporately accountable for:

- Providing strategic leadership & direction and making decisions for their process
- Establishing policies and standards which provide for governance, quality assurance across the Corporation and which meet legal and regulatory requirements;
- Defining corporate targets and determining what should be reported corporately and divisionally;
- Ensuring appropriate documentation (including policies, standards, guidelines) is included in the *Corporate Business Management System*.
- Developing and delivering process capability by ensuring all people can operate effectively within their process or applications for which they have corporate accountability. Includes skill development, education and training and appropriate levels of documentation
- Identifying and managing risk from the internal and external environment for their process;
- Monitoring the effectiveness and efficiency of their process;
- Identifying areas for improvement of their process, quantifying benefits to be achieved and gaining stakeholder sign-off and commitment to achieve those benefits;
- Working with key stakeholders to ensure decisions in relation to their process are based on maximising corporate outcomes as well as achieving local business outcomes.
- Relationship management of outside regulators as appropriate to their process (e.g. Health, ERA)
- Management of data in accordance with the Corporate Data Management Framework;
- Management of Business Applications (e.g. Grange) in accordance with the Corporate Application System Architectures Model.

Line Accountability

BRANCH MANAGERS, REGIONAL BUSINESS MANAGERS and LINE MANAGERS are line accountable for:

- Implementing policies and standards established by Process Managers and complying with relevant regulations and legislation;
- Providing information on corporate targets;
- Using documentation in the *Corporate Business Management System*;
- Attending and supporting appropriate skill development so their staff can operate effectively within processes or applications;
- Identifying risks and issues from the internal and external environment which will impact on processes and advising the appropriate Process Manager;
- Monitoring the effectiveness and efficiency of processes within their area
- Identifying areas for improvement of processes and advising the appropriate Process Manager;
- Working with Process Managers to maximise corporate outcomes as well as achieving local business outcomes through appropriate allocation of resources;
- Ensuring data is accurately captured.

EMPLOYEES are line accountable for:

- Using established policies and standards for processes and complying with relevant regulations and legislation
- Using documentation in the *Corporate Business Management System*;
- Attending appropriate education and training sessions so they can operate effectively within processes or applications;
- Identifying areas for process improvement and advising the appropriate Process Manager or line manager;
- Ensuring data is accurately captured.

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Corporate Accountabilities

Purpose: Sustainable management of water services to make WA a great place to live and invest



CORE PROCESSES

These are the core processes which allow the Water Corporation to provide Water, Wastewater and Drainage services to its customers.



ENABLING PROCESSES

These are the enabling processes which assist the Core Processes and allow the Water Corporation to provide Water, Wastewater and Drainage services to its customers.

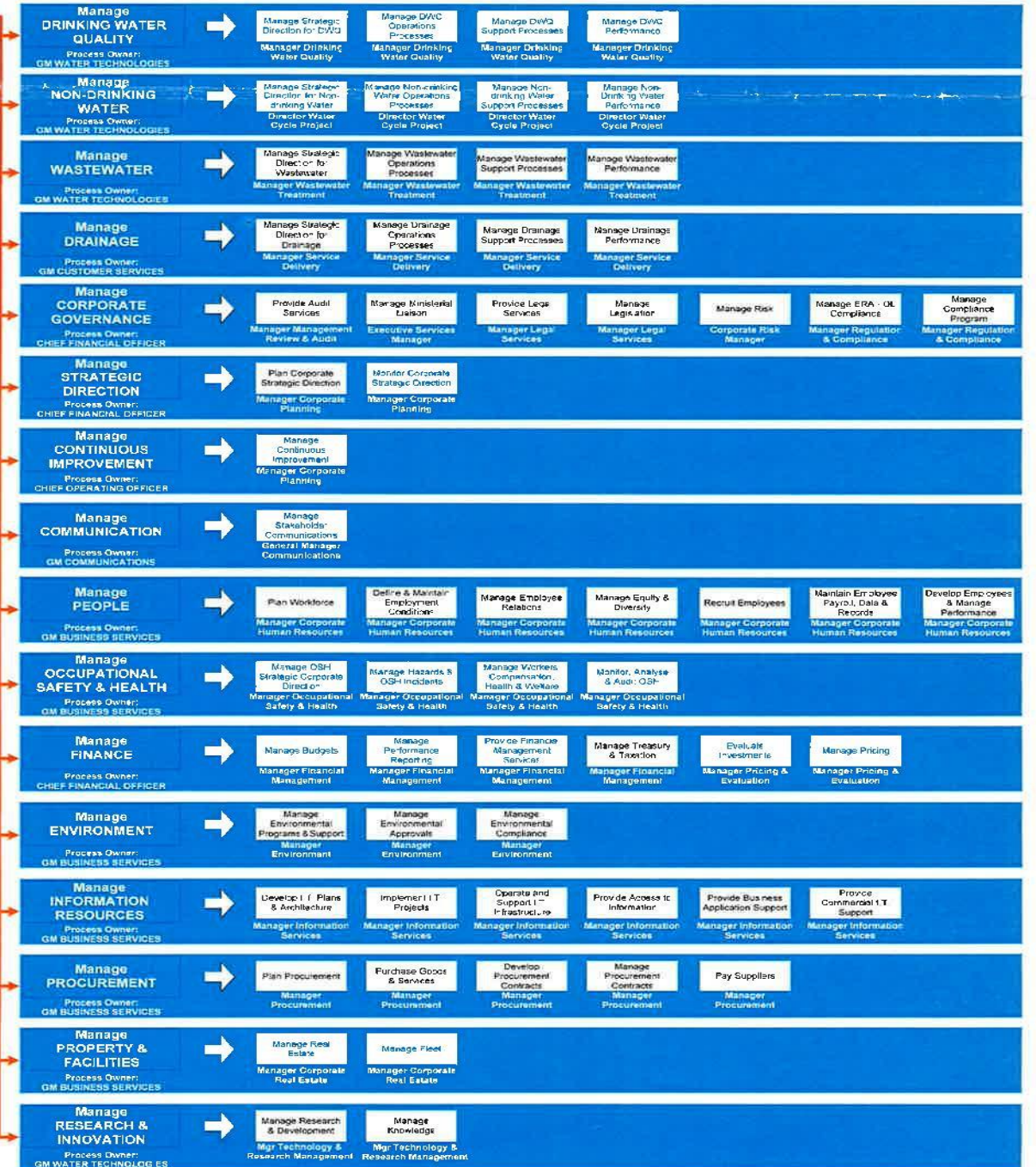


Fig. 7.1 The Water Corporation Accountabilities Framework version 4, 2005

The ability of participants/interviewees to remain involved during the period of implementation was challenging. They needed to engage within the business as well as the project team simultaneously and the example of leaders influenced this involvement. Leadership came up repeatedly in every interview and was viewed both positively and negatively in both utilities. Demonstrated leadership by both corporate executives and managers was critiqued with repeated regularity in interviews.

WNGI came to the conclusion that the Chief Financial Officer (CFO) needed to formally sign off on the realisation of benefits and control the program from a financial point of view. A view widely expressed was that a more coordinated approach needed to be focused on into the future and that the issue of Process Owners, their role and mandate looked at more clearly before embarking on additional IT projects. Additionally, a steering committee of Change Management representing every part of the business was felt to have been useful in driving the implementation of SAP and Benefits Realisation in WNGI.

Both utilities reported a definite need for the executive commitment. However, over and above this was the requirement of management and employees to understand that this is about benefits.

As de Pablos and Carmen (2010, p 255) argue, the implementation of an Enterprise Resource Planning System (ERP) is a risky and high cost action, even more when dealing with small and medium sized enterprises. Although many studies have shown the importance of paying attention to critical success factors in ERP implementations, there is still a high degree of failures and bad experiences around ERP implementations. Most literature has shown experiences of success and failure coming from large sized firms.

WNGI claim that the latest implementation of SAP has sped up the system making it respond quickly to user needs. This upgrade of existing systems was really a functional upgrade and facilitating the ability to keep pace with technological change. It also provided reliable access to quality and complex data which would help support the business to be more sustaining and competitive. It could also facilitate future expandability of the business according to some interview respondents.

The Water Corporation believed that the business needed a well-developed plan to ensure that focus was in the required areas. The business needed to manage the implementation according to the developed plan. Planning plays an important role in an IT implementation such as SAP,

as it is an important part in terms of understanding the business. Clarity in strategic direction for the business and the supporting IT implementation is a critical business factor for achieving the vision and set of objectives and particularly for a Benefits Realisation process.

The objectives for the BR process/program needed to be a balance of the ways to manage and improve the business. The Water Corporation believed that anything that improved the business was ultimately a benefit to the SAP end users, and confirmed the expectation that SAP could do more with less resources.

According to interviewees, both WCWA and WNGI deduced from their SAP experiences that they would need dedicated resources to manage the implementation program. There needed to be very strong ownership by accountable people within the business, in order to successfully implement and develop a Benefit Realisation program.

7.4 Form the Benefits Realisation Team

The reviewed literature suggests a number of approaches to initiating and implementing a Benefits Realisation program. Generally interviewees suggested that a team should be formed to get things started and maintain the impetus. This is supported by literature, for example, Thorpe et.al (1998). This team's mission is to convince people to adopt a benefits mindset and commit to a major change in investment decision making and organisation. The team should be chaired by an external corporate sponsor or business sponsor. Once familiar with the cornerstones of the Benefits Realisation approach, endorsed by the organisation, the team's first task would be to define the strategy and plan for implementation. The team would then proceed to:

- Customise Benefits Realisation for the organisation and link it to other corporate processes such as business planning, project management, budgetary control and performance measurement.
- Define process owners for Benefits Realisation activities.
- Create teams with responsibility for implementation support activities, such as change management and communications and training.
- Support the change management effort by communicating the concepts and advantages of benefits realisation across the organisation.
- Measure results and report on progress to the management committee.

The implementation team might work for several months or several years, depending on the scope of the benefits realisation effort. It should remain in place until the organisation has embraced the new way of thinking and managing, with the benefits realisation cycle running smoothly. According to Thorp et al, (1998). once this has been accomplished, it should be disbanded. In the Water Corporation, the Benefits Realisation program was set up to drive benefits from SAP-IT and later business initiatives. It was abandoned in 2001. Its place in the business of WCWA is illustrated in Fig 7.2. Thus, The Water Corporation's approach closely approximated its plan. However, as identified, WNGI did not proceed down this route and consequently the evidence from interviewees, indicates that this utility did not harvest the potential benefits available because it did not have a Benefits Realisation process in place.

Reengineering is a concept that is applicable to all industries, particularly information and communication technology (ICT) projects regardless of organisational type, size, culture, or location. The ERP system frequently requires organisations to change their existing business processes to harmonise them with its functional activities. Some 72 per cent of the ERP implementation failures reported worldwide (Eric, 2010) were because of the various critical success factors. A Critical Success Factor (CSF) is defined as a factor needed to implement an ERP system successfully. Assessing the importance of CSFs of Enterprise Resource Planning systems has always remained an important concern for academics and researchers. Long term Top management Support (LTS). Perceived ERP benefits (PEB). ERP in-house Training (EIT). Project Tracking (PTG). Visible Project Phases (VPP). Project Phase Update (PPU). Interdepartmental Cooperation (IDP). Strategic IT planning (STP). ERP vendor Support (EVS). and Data Analysis and Conversion (DAC) have been identified as dominant critical factors for the success of the ERP implementation in the manufacturing sector (Annamalai, Ramayah, 2013). Most of the CSFs if not all were prevalent during the implementations in both utilities.

Benefits Realisation Group

“The Corporation has reaped significant benefits from its major projects and initiatives over the past two years thanks to the efforts of the Benefits Realisation Group.”

Garry Meinek
General Manager Planning & Development

The Benefits Realisation Group drives benefits from business initiatives by assisting the business to identify, implement, monitor and report on breakthrough opportunities and process change.

The Group supports the strategic and commercial objectives of the Corporation by providing leadership and a centre of excellence. We focus on the Corporation’s strategic direction through application of the Company One values, accountability framework, business process model, and key result and key support areas.

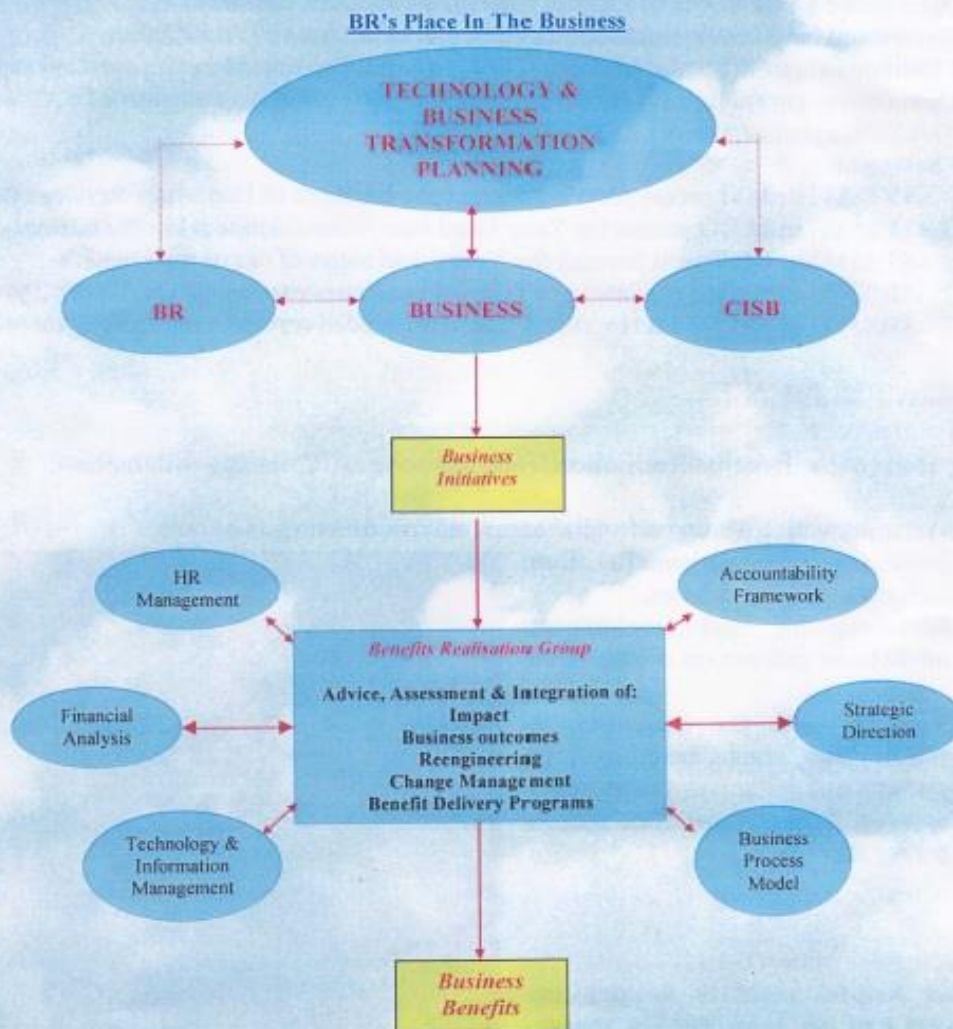


Figure 7.2. Benefits Realisation Group's position in the business

The benefits realisation process required a vision and a set of objectives that provided a balanced view on the ways to improve the business. It actually challenged The Water Corporation users to look at their business in different ways.

Interviewees in both WCWA and WNGI asserted that the application of SAP-IT needed to be flexible enough to match the needs of the users, and the business needs of the organisation. If implemented without considering both of those things, the flexibility and adaptation that was being sought may not be deliverable. Users in both cohorts believe this was achieved in both organisations.

Sarker and Lee (2002) presented three key social enablers as precursors of successful ERP implementation. These included strong and committed leadership, open and honest communication, and a balanced and empowered implementation team. The authors called for more research in this area to establish facts. The findings of Sarker and Lee are similar to the research outcomes pertaining to the leadership construct contained in this study which affirm the responses from participants in both WCWA and WNGI. The responses are emphatically suggesting that strong, effective and demonstrated leadership is a critical success factor for a successful ERP implementation such as SAP in organisations.

Respondents in cohorts from both the utilities stated that people thought that SAP was difficult to use. Generally speaking regular users of SAP have been quite comfortable with it, although it is not as user friendly as initially portrayed by marketers of SAP. Probably the most important element in the user friendly construct is the ease of use or the simplicity for the user. Regular users indicated that the current system they are using was easy to use but they needed to know the structure to follow the process. Umble and Haft (2003, p 239) concur with this finding stating that, "Enterprise resource planning (ERP) systems are highly complex information systems. The implementation of these systems is a difficult and high cost proposition that places tremendous demands on corporate time and resources. Many ERP implementations have been classified as failures because they did not achieve predetermined corporate goals."

7.4.1 User Friendliness

A strong focus on user friendliness was apparent among interviewees, who discussed the importance of being familiar with the product and being organised in dealing with SAP-IT so that it could be used to service and support the business.

WNGI participants noted that SAP was quite difficult to use without adequate training because some employees were not PC literate enough and so they experienced great difficulty using the software without comprehensive training. Having some SAP competence, as discussed by WNGI participants from previous SAP iterations proved to be a good starting point. The Water Corporation, on the other hand, was a new site and did not have SAP in the organisation before their acquisition and therefore had no prior SAP competencies within the Corporation. The SAP competence and the application of a Consultant's template enabled WNGI to focus quickly on the consolidation of SAP-IT into a single system. There were distinct advantages in having access to a customised, packaged application for their project.

As identified the motivations for WNGI using SAP were different from the WCWA. Nevertheless, WNGI may not have utilised SAP to its full capacity, even though the utility had greater SAP expertise. One of the strengths WNGI discovered was the report capabilities of SAP which benefitted the organisation's information flow. From the end-users perspective what they were able to deliver was standardised processes, across the business. As an end user it has given this sense and the confidence that the business holds itself accountable for making sure that benefits are delivered and the outcomes are achieved. One needed to believe that the system was actually delivering and that it provided the functionality that was promised confirming a wise investment.

As Pacheco-Comer and Gonzalez (2012, p 84) concur, "implementing an Enterprise Resource Planning (ERP) system is one of the most important projects on business optimisation that an enterprise could attempt. The rate of failure on ERP implementations stays high. Selection process is a critical success factor."

As discussed the complexity of SAP requires a different approach for its implementation and for benefits to be realised as it requires the culture of an organisation to adapt (Krumbholz & Maiden, 2001). This is aligned with the view held that at the heart of the problem is a fundamental change required in how organisations are using SAP and the information provided by that technology. This has also been the experience of WCWA and WNGI as identified by participants. Unlike other IT applications, implementation of SAP necessitates fundamental modification in the business process and essentially involves "change management implementation" (Mandal & Gunasekeran, 2003). This was also the experience of users in both WCWA and WNGI, a finding which will be explored later on in this chapter.

SAP is a great problem solver and can provide the answers to almost any question anybody has asked it, which is relevant to the business. As well as the problem solving theme SAP provides a consistency across the whole enterprise by having a consolidated view of the business. Obviously each asset will have slightly different variants of data, but SAP in WCWA was perceived to be a good consolidation tool. For WNGI, SAP was described by study participants as a “hub in the spokes” of the organisation and became an important source of validation across the organisation.

7.4.2 The role of SAP in Water Corporation and WestNet Group Infrastructure

At the time of the study, SAP-IT covered all the main business components in WNGI in an efficient way, playing a significant role in the business, increasing its value and significance as it expanded across the organisation. Aside from possessing greater access to reliable quality data for WNGI, SAP implementation has led to greater transparency and visibility of reporting for staff. More quality detail was being provided for transactional functions which are believed to have enabled users to be more proficient and effective.

All interviewees had positive and negative comments to make in relation to the planning theme. WCWA study participants positively assessed the soundness of targets and the objective. In the case of WNGI, the use of a Consultant’s system and model provided a foundation to configure and customise the SAP implementation. The view of WNGI cohort was that the SAP implementation had been simplified by using this packaged model rather than developing it from the beginning. This configuration of tasks was considered shorter at WNGI. Therefore time was spent on testing and making sure that the business was comfortable with the functionality and the migration of data. Additionally, interviewees believed that WNGI tended to focus on an annual timeline rather than a three to five year timeline in relation to major effectiveness and efficiency implementations. Indeed, some interviewees considered the timelines a fundamental barrier to implementation. Additionally because of WNGI’s short term view, the realisation of benefits, it was claimed was also precluded from their thinking. Short term thinking was reported to have impacted on the corporate executive seeking quick solutions for the business because WNGI had too many disparate SAP systems. The amalgamation of various companies in WNGI meant that there were three SAP systems operating in isolation from each other. There was a need for a single ERP system to support the four different businesses which make up WNGI. This would facilitate expeditious integration and the consolidation of a single system operating seamlessly across all parts of the utility.

WCWA considered that the good lead in time and their planning was a critical factor that led to successful implementation of SAP. Participants recounted a very good result. When reflecting on The Water Corporation's implementation of SAP, interviewees' predominant understanding was that it was driven by a time imperative to have some new IT architecture in place for the Y2K situation. So there was an imperative for implementing on time. This was considered a prime consideration for the implementation of SAP, realisation of benefits and the project orientated process by WCWA right down to significant detail up front. Whereas respondents in WNGI thought that the analysis they did up front on how to go about SAP viz. their decision to take on a Greenfield's approach and build everything from the ground up, was sound planning. This included the project team, the structure, and sourcing a supplier that came in with a level of competency which provided the impetus for their SAP implementation.

Moreover, WNGI already had an unsupported version of SAP in place. It was operational, supporting their platform and the approach taken. There was a level of SAP competence already established in the organisation. They used a Consultant's template, which was developed by Shared Services, PowerCorp, a large utility in Melbourne. It had a level of competencies in implementation, which provided expeditious access to SAP and facilitated quick planning and implementation.

The Water Corporation's well-developed plan was influenced by visits to other SAP sites in Australia, providing some valuable lessons in regard to application of the software. These included:

- Not to underestimate the size, complexity and cost of implementing SAP
- Retaining key people from the project team thus keeping the Intellectual Capital gained and Intellectual Property within WCWA.
- Providing a clear strategic direction which ultimately improved the business and made life easier for users.
- A requirement for new architecture in IT, driven by Y2K which facilitated the mind set in WCWA and delivered a successful SAP program with the realisation of planned benefits.

- Achieving integration with approximately 40 systems in WCWA was expensive and labour intensive.

7.4.3 Alignment to Literature

As discussed in the literature review, Olhager and Selldin (2003) listed 10 important benefits gleaned from Swedish manufacturing firms associated with ERP implementations. These authors also reported the importance of the pre-implementation process, implementation experience, and ERP configuration. Within the Australian context, Mandal and Gunasekeran (2003) reporting their experiences of ERP implementation in a water utility found these three distinctly successful strategies to be highly significant. Study participants also identified pre-implementation and post-implementation planning in both the WCWA and WNGI, although as already discussed the drivers for implementation across both utilities differed.

There was no baseline in WNGI for costing their implementation, or comparing and contrasting their realisation of benefits. On the other hand, The Water Corporation baseline was captured in its Business Case on Benefits Realisation (The Water Corporation of WA, 1997a – 1997d).

Literature asserts that in today's dynamic business environment customer needs, competition, globalisation, and technology have combined to produce a powerful effect on the process of delivering goods and services to the marketplace. In WNGI there had to be a beneficial result to the business overall. The perception of users of SAP-IT was that it was a good system and easy to use. It made users acquire the knowledge as well as speeding up WNGI's systems. The fact that SAP had such a wide base across the world gave it global reach from the point of view of best practice. According to Closs and Stank (1999), businesses have abandoned the vertical, functional organisational structure characteristic of traditional procurement, manufacturing and physical distribution operation in favour of a more horizontal, cross-functional structure that permits integration of knowledge across functional areas. ERP systems, by their multidimensional, integrative, and normative nature, offer the depth of functionality and breadth of integration required for managing global operations of business organisations. Hammer (1999) concludes that the use of ERP software forces firms to become integrated enterprises that demand strong understanding of key business processes and a very high level of teamwork. This is supported by Mutwani and Akbulut (2008).

The experience of WCWA and WNGI in regard to implementation costs is contrary to the view expressed in the literature. Krumbholz and Maiden (2001) depict ERP implementation projects

as on average, 178 per cent over budget, taking more than double the time to implement and delivering only 30 per cent of promised benefits. Thorp et al (1998) argue that the crux of the problem is an improper implementation. Furthermore, these authors note that all programs must be tailored to a specific organisation and a set of projects. In general management program solutions have been designed to meet three types of challenge: best case, middle case and worst case. In the experiences of both WCWA and WNGI, they both successfully implemented SAP-IT and obtained the desired results.

The literature indicates that organisations usually experiencing trouble with implementation have a narrow scope of a one-off business case, or inappropriate or cumbersome IT solutions. They need to consider best case, middle case and worst case scenarios in order to arrive at solutions.

The Benefits Realisation Approach is designed essentially to find ways of increasing the return on investment on IT implementations and business transformation programs. Benefits Realisation can make a major contribution simply by reducing the risks.

WCWA utilised a benefits realisation approach well. WNGI did not have a BR program in place. Instead WNGI used a Project Implementation Review (PIR) which had not garnered the greater return or opportunities on investment. The PIR mainly reviews the efficiency and effectiveness on the Project Management methodology and approach used. In this instance it would appear that WNGI has not realised technological and transformational benefits as well as WCWA did. WCWA created a benefits realisation program as part of its business case and has harvested significant benefits.

There are some practical steps for selecting and implementing the appropriate Benefits Realisation approach which may assist to meet organisational challenges. Literature presents a number of approaches which are similar in intent and structure. Thorp (1998, p. 98) outlines five practical steps:

Explore the Potential of Benefits Realisation: focusing on the challenges and a range of possible solutions.

Define scope: focusing on the choice between program and portfolio management solutions.

Get Organised: creating the organisational structure of full cycle governance.

Manage Change: through executive championing, communications and training.

Implement Benefits Realisation: through program and portfolio management, and full cycle governance.

WCWA used a similar approach to the five steps however the utility largely followed the requirements outlined in its Business Case (Water Corporation of WA, 1997a – 1997d) which was methodical, systematic, largely sequential and business focused. There is no evidence to support this approach in relation to WNGI from the data collected, discussion or documents made available. WNGI focused on following the purchased packaged implementation template for expediency reasons. Perhaps WNGI could have harvested more significant benefits and experienced greater transformational change getting a better return on their investment instead of narrowly focusing on the creation of a single SAP system. In contrast for example WCWA had 40 or more foreign IT iterations to consider, consolidate and still reaped significant benefits. Cumulative corporate savings from process improvement identified by the Water Corporation as a result of applying SAP comprised \$14.3M at the end of 2000 against a target of \$32.33M for end of financial year 2002 (Water Corporation BR Report Card, 2000, p. 157).

SAP users praise the robustness and flexibility of this system. These strengths have been clearly articulated by research participants. Nevertheless, the value of SAP is its capacity to promote forward thinking as part of the business process. In support of these findings, Nah et al. (2001) who conducted a comprehensive review of the literature establishes factors that are critical for the successful implementation of ERP systems. These were ERP teamwork and composition; change management program and culture; top management support; business plan and vision; business process re-engineering with minimum customisation; project management; monitoring and evaluation of performance; effective communication; software development, testing and troubleshooting; project champion; and appropriate business and IT legacy systems. Both studied utilities experienced and used most of these Critical Success Factors for their implementation as is evident in the inductive and deductive grounded constructs.

The global ERP industry blossomed in the 1990s automating back office operations and in the new century moves have been made to introduce a “second and third wave” of functionality in ERP systems to facilitate Benefit Realisation. Research to date has been limited in respect to these “second wave” implementations. The achievements and barriers to attaining benefits are presented with analysis of the extent that financial metrics are used to measure benefit attainment

in core SAP systems. The main findings of a contribution by Hawking (2003) indicate that many ERP implementations do not attain expected benefits due largely to people related issues. This is organisational change management. Realising benefits in WCWA and its change management approach appears to support Hawkings experience whilst WNGI is more aligned with the lack of expectation for realising benefits because of little or no focus and emphasis on Change Management.

7.4.4 Technology facilitating change

SAP also supports continual change. It has to be ‘innovative’, ‘creative’ and ‘different’ claimed some interviewees while at the same time supporting users, which was the case for the Water Corporation. SAP was identified by The Water Corporation study interviewees as a key provider of the tools that keep the business in-check and will remain central to this utility for the foreseeable future. SAP has changed the way business is undertaken in the Water Corporation.

Change was not as apparent to users in WNGI, who related to SAP as mainly an IT system. This was despite the fact that the SAP implementation team looked at users operating SAP and took on brand recommendations from them to improve, facilitate implementation and embed the new system. The major change was process based for WNGI interviewees and was closely associated with the template system. The major activity was adoption of SAP hardware and the creation of a designated team. Some WNGI interviewees were unaware that SAP had huge potential as a catalyst for change, beyond a corporate requirement for technology upgrade. Nevertheless, interviewees did recognise that SAP could compliment or drive change.

The Water Corporation’s experience with SAP is that it provided the ability and capacity to think beyond the boundaries and it provided a rapid ability in WCWA to think about change in a different way. SAP supports continual change claim participants in WCWA. It is the hub of a number of core processes. SAP has to be the core and really drive a lot of core processes for all of WCWA. Therefore interviewees in WCWA consider that it is fundamentally important to get the implementation right and to understand what is involved in maintaining the data and the system so it is available and of use to people in the future for WCWA. Interviewees in WCWA believed that a major factor that influenced the organisation’s desire to have a system like SAP was its driven desire to change. During the implementation of SAP and Benefits Realisation in WCWA the morale of end users was sometimes affected negatively or positively based on the perception of successful and unsuccessful change by users.

7.5 Benefits Realisation and Change

Thorp et al (1998) considers as a central tenet of the Benefits Realisation approach that “benefits come only with change and equally, change must be sustained by benefits”. People must change how they think, manage and act in order to implement the Benefits Realisation approach.

These changes can be difficult, requiring planning and management. That is the reason that change management is an essential enabling condition for implementing Benefits Realisation. Information Technology (IT) is not solely about installing hardware or software. It is a package of ideas about how people could work differently. This implies change; often significant change. Change is a major component of any blended investment program. An activist approach with accountability to managing change is required if organisations are to realise the benefits, as was the case with WCWA and as shown by the delivery of significant benefits. WNGI did not do this.

These experiences align with some of the findings found in the literature cited previously. In particular, Foster et al. (2004) reinforces that ERP implementations are people focused projects which rely heavily on change management for success.

Furthermore, managing change includes defining where you want to be and how you are going to get there. It also includes managing the transition from where you are, to where you want to be. For some organisations, this is the hardest aspect. Proactive management of change is not just a cosmetic exercise. Rather, it is about involving people in the process of change. It is about giving the workforce the tools and the working environment to bring about the change to reap the benefits as immediately and visibly as possible; albeit in a managed way (Thorp, 1998). Managing change must be a higher management responsibility. It is a core responsibility of the business sponsor. With managing change, as with accountability, the language and idea of ownership is appropriate. Business sponsors must take ownership of the process of managing change. Business sponsors must actively structure and visibly lead the major benefits realisation processes embedded in their programs. Their leadership role must be shared with program and project managers. This view aligns with the experience of The Water Corporation Benefits Realisation Team who facilitated the creation of the Accountability Framework. This framework provides the clear roles for Corporate and Line Accountabilities, and the Leadership required which supports the view by Thorp (1998) that the leadership role must be shared. This is depicted in Figure 7.1, p. 140.

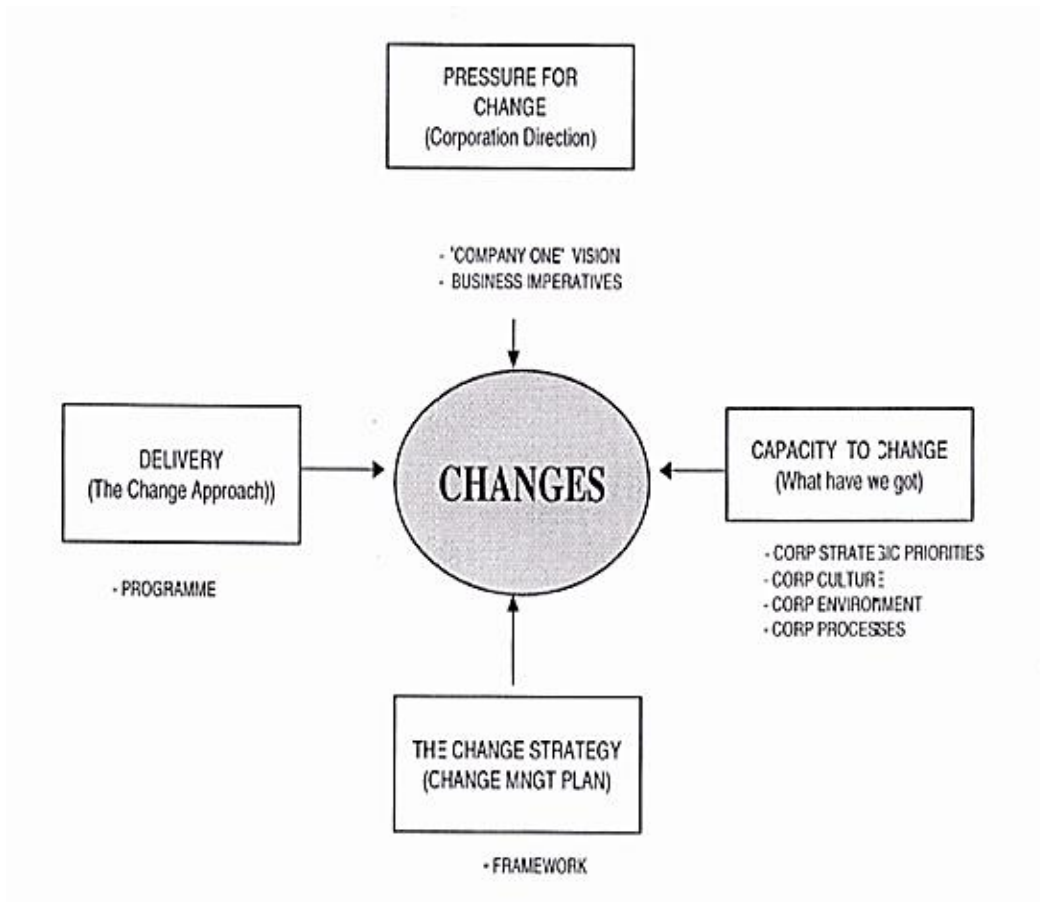
Resistance or reluctance to change, whether calculated or emotional is a problem for both individuals and work groups. Employees question why change is necessary and wonder whether it will be an advantage or a detriment. As such, change is also a significant problem for major investment programs that depend on the individual's ability and willingness to change. "The world hates change, but it is the only thing that has brought progress," stated Charles F. Kettering in 1991, *Business and Technological Innovator*.

"The most convincing proof that change is a necessary condition for benefits realisation comes in the form of the high IT failure rates, some very embarrassing, costly runaways and white elephants that make the point tellingly." (Thorp, 1998, p. 25) This notion as cited earlier is also supported by Krumbholz and Maiden (2001) who point out that ERP implementation projects were on average, 178 per cent over budget, took two and a half times longer than intended and only delivered 30 per cent of promised benefits. Literature provides other examples similar to the above.

The Water Corporation's Benefits Realisation Group provided a centre of expertise where internal customers could come for advice and guidance on every aspect of business case development, business process re-engineering, process improvement, breakthrough opportunities and change management. This is illustrated in Figure 7.3 p. 156, *The Water Corporation Change Management Approach*, and in greater detail in Appendix III, p. 188.

SAP is central and fundamental to the business success of the Water Corporation. In 2009, the organisation had an asset base in replacement dollar terms of AUD 18 billion dollars. There are assets that have got lives and control systems of 10-20 years right through to civil infrastructure which lives in excess of 100 years. The SAP system facilitates and supports The Water Corporation's current and future assets. Moving to SAP was a significant change which was a very substantial and beneficial business decision. The Water Corporation also significantly improved its finance; materials management; asset management; operational and project management functions as well as HR functions as a result of implementing the functionality of SAP. The BR Report card (Figure 7.4 p. 157) illustrates a snapshot of improvements as of 31st December 2000. Other changes made include facilitating The Water Corporation's move away from silos or separate businesses which previously existed.

Figure 7.3 Water Corporation WA Change Management Approach



In WNGI the changes were really that the company was changing altogether at the same time and so were the employees. Many changes were not apparent to users at the front end. Most of the changes were driven by SAP and the interaction experienced with the SAP team. The SAP template system that WNGI introduced helped the changes to take place although there was some resistance to the proposed changes. People were apprehensive about change and its consequences. According to study participants, the major change was to business processes which assisted the business to be more competitive. This was comparable to The Water Corporation and supports the assertion by both cohorts that the majority of application projects in IT are change projects. If one is a project manager and does not understand this then the project will probably fail more times than one would succeed in the IT space. In short, SAP in WNGI was considered by users to be a catalyst for change but also by using the technology to complement or help drive change. This was comparable to the response in The Water Corporation as can be seen from the SAP Benefits Survey 2000 set up to measure the degree of change to date (Water Corporation, 2000. See Figure 7.5, p. 158).

Mabert et al (2003b) studied the ERP implementation process in US manufacturing companies. The author stated that a typical ERP implementation took anywhere from one to five years. This aligns with the outcomes and changes being driven in WNGI and The Water Corporation as discussed in some interviews. In addition, Mabert et al (2003b) conducted a comparative analysis of on time and on/under budget with late and over budget ERP implementations using logit (logistic) regression models. The results indicated a number of factors to be significant, including pre-implementation planning and system configuration.

The Water Corporation users discovered that there needed to be a very effective communication and reporting process put in place accompanied by an ongoing commitment over a period of time. Management commitment from the outset is essential for implementation as well as to implement and demonstrate executive commitment which was required to ensure follow through with implementation.

In the Water Corporation there was conjecture by some interviewees in relation to the effectiveness of communication. Communication in the Water Corporation as well as the application of SAP and the Benefits Realisation program helped to breakdown silos. Users comment that there was a multitude of natural factors which created silos in the organisation. In some instances users have tried to re-engineer processes to make a better product for all parts of the business. Sometimes this is seen as interfering in somebody else's process. The accountability model WCWA set up was undertaken partly to break down the silos. They had some success as SAP had enabled The Water Corporation to think about the water business and not parochially about a branch, a region or a discipline in the utility. At the time that SAP was implemented, The Water Corporation had a very siloed or interim view of the way that it operated. There were a number of operating businesses with operations as entities in their own rights i.e. little businesses if you like. This was a problem for branches who wanted to create a commercial, successful and seamless operation. Because of the silos in the business the Water Corporation Board had to be convinced that the acquisition and implementation of SAP was going to succeed by a necessary top down approach which was the case after implementation. The centralisation of payroll and transactional activities for the entire WCWA was an example of providing a recurring benefit of \$1.51M (See BR Report Card 2000, Figure 7.4, p 157)

WHAT BR HAS ACHIEVED

The Group has facilitated, driven and produced the following significant achievements:

- Benefits Realisation reporting framework.
- Benefits Realisation change management methodology and communication approach.
- Change management and consultancy tools.
- Business case templates and guidelines to support capital investment submissions.
- SAP Benefits Survey to measure degree of change since the introduction of SAP.
- High level Benefits Realisation methodology for technology and business initiatives.
- Review and refinement of the accountability framework and business process model.
- Communication forums which link technology with the business.
- Ongoing support to process owners in developing and implementing process models.
- Initiated remedial program focussing on SAP training.
- Established a framework to identify benefits of SCADA (Telemetry) business cases.
- Reviewed land development subdivision process in South West Region.
- Facilitated sign-off by GMP&D (General Manager Planning and Development) and GMF(General Manager Finance) on benefits from the HR payroll system.
- Cumulative, corporate savings from process improvement as a result of SAP of \$14.3M (as at 31/12/2000) against a target of \$32.33M (30/6/02)
- Savings of:
 - \$2.88M in Materials Management (MM) process for Year 1 and establishment of Logistics Services Branch.
 - \$1.85M in Finance and Controlling (FI/CO) process for Year I and new financial model in the business.
 - \$1.51M in Human Resources and Payroll (HR/Payroll) process for Year I and sign-off of payroll benefits.
 - \$0.20M in Project Systems (PS) and re-visiting of original business case targets and Year 1 baseline data.
 - \$0.35M in Plant Maintenance (PM) process for Year 1 and service delivery and asset management forums.

Figure 7.4 BR Report Card 31/12/2000

(Source: Water Corporation WA 2000)

SAP Benefits Survey 2000

The SAP benefits survey was administered to The Water Corporation, to ascertain what changes had occurred after the implementation of SAP throughout the Corporation in November 2000. The response rate was 37.5 per cent, with a satisfactory level of participation from most areas of the business, including an alliance partner Serco, Australia.

Overall Survey Outcomes

The overall findings from the SAP Benefits Survey are summarised below:

- SAP technology has been embraced by the business.
- There has been a significant positive change in work practices.
- SAP offers greater access to information, better integration and design than legacy systems.
- Infrequent users find SAP to be complex and not very user friendly, thus having a high demand for system support, reliance on others, and training.
- An increase in productivity and time spent on innovative solutions to work problems.
- More time spent at work, mainly due to increased workloads and staff reductions.
- Training provided has been satisfactory.
- 86% of respondents had attended an SAP overview course.
- 73% had attended SAP module-specific training.
- Reporting is difficult, causes frustration and does not support business needs. Respondents indicated that the difficulties associated with generating reports inhibited their ability to meet performance targets.
- High degree of confidence in the accuracy of information from SAP.
- Level of duplication in work.
- Employees are confident in their understanding, application and optimisation of SAP; however, they are not fully aware of the potential of SAP.
- Infrequent users rely on support staff to operate SAP as it is difficult to master if not used regularly i.e. the system is not very user friendly.
- Quality and effectiveness of SAP has outweighed other information technology and business related problems.

Figure 7.5 SAP Benefits Survey 2000

(Source: Water Corporation WA 2000)

There was a belief in the Water Corporation that technology was an enabler for change and that SAP supported and facilitated change, particularly process, system and functional change. Process managers, for example, claimed that users needed to have more accountability because there was a need to change the process. They were given more accountability in order to build the process to make utilising processes easier for them. The accountability framework also provided additional flexibility and support as it clarified who was accountable for what both corporately and from a line manager's point of view. Interviewees in WCWA believed that the organisation needed to have dedicated resources to manage an implementation program. There was a requirement for very strong ownership by accountable people within the business otherwise they just changed it. Participants claimed that it was very difficult to develop a Benefits Realisation Program and then create a team of people to manage it if they were not getting very strong support from the leadership of the organisation. The view was that senior management of WCWA needed to be held accountable for implementation to drive the benefits realisation process. These individuals also needed to be highly skilled and credible within the organisation as well as possessing characteristics such as trustworthiness, empathy and understanding of the business and its people. The Water Corporations BR team was recognised as possessing these qualities.

WNGI interviewees acknowledged that Benefits Realisation was not clearly understood in their business. They believed that Benefits Realisation was a difficult concept to grasp and to actively pursue and that companies traditionally did not really do well at driving and pursuing benefits. They claimed that nobody really tended to look two to three years down the track to ascertain whether or not a project had actually delivered its benefits as promised. WNGI interviewees acknowledged that benefits realisation within the utility barely existed. The reporting capacity of SAP in WNGI has been acknowledged as a great benefit particularly cost reporting as well as the enhanced visibility around staff and staff movements. WNGI interviewees acknowledged that some minor change occurred and from a people perspective this was considered fairly limited. These manifested in few identified areas of major change.

Despite the strong support within The Water Corporation, some participants believed that the SAP implementation in WCWA was not well articulated through the planning process. The targets set were considered questionable and not achievable. Secondly there was a perception that there was a lack of commitment and leadership in relation to the drive for efficiency. Thirdly, once the BR program was closed and the BR project director was no longer coordinating the

project the ability to drive the realisation of benefits dwindled. Additionally there was a lack of clarity about what the expectations were as they were not being documented in a way that could easily be measured.

WCWA interviewees believed that there needed to be a very effective communication and reporting process put in place with an ongoing commitment over a period of years rather than merely months. This experience aligns with the notion that Thorp (1998) postulates previously in this chapter that sustaining and managing change remains a general management responsibility.

Providing better access to information in WCWA for users provided them with more control over their working environment. Consequently, interviewees believed that they were more productive. Anything that improved the business was ultimately a benefit to the end user. It had made their work life easier.

7.6 Communication

Communication has a central role in the acquisition, implementation and realising of benefits in any ERP software but particularly in the instance of SAP. Te'eni (2002, p. 43) sums this up well in the following quote

The development and appropriation of ERP is a collaborative effort that relies on communication for its success. Communication is affected by the organizational context and communication affects ERP success. Actual incidents of communication breakdowns clarify the impacts of communication gaps and communication complexity on mutual understanding and on relationships between communicators. Communication gaps affect critical success factors of ERP, such as commitment and involvement, user acceptance and monitoring and feedback. An important implication is that communication in ERP has to be structured and managed. Communication also tells the story of the collaboration between the ERP actors. It appears that communication complexity and breakdowns can serve as diagnostic tools that should alert management to take corrective action.

Participants in both WCWA and WNGI believed that communication was key to supporting, facilitating and managing change. Effective communication was central to influencing people. By influencing people, their participation, cooperation, empowerment and accountability is

fostered. When these qualities are fostered, trust is built. Communication is a two way process, that involves speaking and listening. It is also about demonstrating respect and empathy, facilitating understanding, negotiating differences and resolving conflicts.

A useful framework for communication is the concept of the four Ps of change, introduced by William Bridges (1991) in his book, *Managing Transitions*.

Purpose: Why are we doing this?

Picture: What will it look like when we get there?

Plan: How will we get there?

Part: What will be my role, both in getting there, and when we get there?

An effective communication plan can be built around these four P's. While all four Ps are important, it is the last P — “What will be my role?” — where the greatest problems can occur. To address this, we must ensure alignment of an individual's goals with those of the organisation. Collectively both the organisation and the individual must both answer the “What's in it for me?” question and recognise what will be the perceived losses and gains.

Whatever the techniques chosen to use, it is important to never underestimate the importance of communication. Managing communication is fundamental to any change process. Failure to recognise this is at the root of many failed change programs. Engaging in disparaging the past is unhelpful and encourages resistance to change as it creates defensiveness and can hinder moving forward to change circumstances (Bridges, 1991).

The literature states that despite the fact that many companies are increasing their expenditure on information technology (IT) to obtain or even sustain a competitive advantage in their respective marketplaces, many studies show that the benefits from IT systems have been considerably less than expected. Managers are often left with the quandary of how to evaluate investments and realise maximum benefits in IT. Reasons for their difficulty have been suggested in the normative literature centering around the socio-technical (human and organisational) dimensions associated with IT deployment. The inability of managers to determine the true costs of deploying IT are considered attributable to a lack of knowledge and understanding of IT-related costs and benefits measurements. (Alshawi, Irani & Baldwin, 2003)

“If companies are strategically to acquire the full potential of IT then they must evaluate its direct and indirect benefits and costs prior to its implementation, as investments in IT can form a considerable part of a company’s capital expenditure” (Gyampoh-Vidogah et al, 1999, p 1). Due to this large capital investment, many firms often find it difficult to justify IT implementation due to their low profit margins. It is therefore essential for senior management to ensure that investments in IT are economically justifiable. Remenyi and Sherwood-Smith (1998) suggest that managers typically justify their IT investments on an informal basis making judgements based on their own perceptions of potential costs and benefits. On a similar note, Irani et al. (1999, p.2) suggest that “one of the biggest problems organisations have in making effective IT investments is their inability to predict and measure the benefits that result.”

WNGI interviewees believe that a lot of benefits have been added to the business particularly replacing three systems and setting up one system across the entire suite of businesses under the corporate umbrella. Additionally other benefits identified were:

- It met their business needs.
- It was a good system, easy to use, provided information required, was speedy and appropriate.

Some downsides to their implementation discussed by WNGI interviewees included:

- There were no baseline measures. Therefore there was no accurate way of determining where costs have improved because of implementing SAP.
- Benefits Realisation in WNGI has not been clearly understood. Consequently, users claim, there has been a reluctance to commit to a Benefits Realisation program because it was not planned for in the Business Case.
- WNGI do not utilise the full capacity of SAP users’ knowledge because of the lack of internal SAP expertise.
- Cost/Resourcing for the implementation of SAP is a barrier to acquiring a new system, enhancing an existing system or updating an existing system as well as the cost of labour and training.

Users believe that WNGI was making sure that:

- they were getting the best value for their dollar
- that the system was being used appropriately by WNGI

Some WNGI interviewees felt that SAP did not provide a return on investment (ROI). All it did was provide improved processes and functionality. WNGI had not arrived at the point of running benefits out of SAP and mainly focused on collecting and migrating data. SAP in WNGI was not seen as a tool to also facilitate decision making.

There is little acknowledgement in WNGI that SAP was a product worth buying and that the needs for this project had been met. This is despite reports that the decision making process used by WNGI was successful and could be used again for future projects and improvements going forward. WNGI interviewees believe that Benefits Realisation will play a bigger part in the future as greater justification and accountability will be required before future projects could be signed off. There was also a view that realising benefits in the product used was important as it provided confidence in the product.

WNGI participants as stated previously did not clearly understand Benefits Realisation. They claimed that WNGI had not communicated the concept and practice of Benefits Realisation to its employees and so it was not bedded down in the business. The project's progress in WNGI was tracked using the Princeton Methodology which had a 360 degree view of the progress of the project and was primarily concerned with the application, progress and identified outcomes. Additionally, there was a continual review at a higher management level. The difference between WNGI and WCWA was that WNGI was very tactical and operational on a day-to-day basis while WCWA had a more strategic well planned long term view for its acquisition and implementation of SAP. This was evident from the business case developed and proposed by WCWA (Water Corporation of WA, 1997a-1997d) compared with the use of a packaged template by WNGI for expeditious and economic reasons. The contrast in approach between the two utilities as has been discussed in this chapter is significant.

WNGI participants found benefits realisation a difficult activity to apply. They asserted that nobody really tended to look ahead to evaluate whether or not a project had actually delivered on its promises. Interviewees believed there was limited interest whether it be in terms of Full Time Employees (FTEs) or seeing possible savings. It was not identified as a preoccupation of WNGI. No baseline was captured so that they did not know how much implementing SAP had improved or reduced the cost base. It may have obviously increased in the short term according

to some users in finance but WNGI participants did not have that initial baseline to conduct a comparison. This was essential for examining the realisation of benefits down the track after SAP had been established in the business. The biggest item that influenced the establishment of SAP was to have a single system that would support and facilitate the business of WestNet Group Infrastructure in the 21st century, and participants believed that it did.

As outlined earlier in the chapter, The Water Corporation made a strong commitment to benefit realisation as part of the initial implementation of SAP and as a result put together a team of highly skilled dedicated resources to deal with, to manage the focus and thus assist the business in the management of the delivery of those benefits. It was also required to report back to the executive and board. The Benefit Realisation Team had a project director, an administration function and several other key resources supported by appropriate external resources when required. It wasn't a large team but it had extensive exposure to the Executive and the Managing Director.

Participants in WCWA believed that this BR Team ensured the delivery of early benefits. When it was dismantled the flow of benefits slowed down considerably. This was a different position to that of WestNet Group Infrastructure which had not planned for realising benefits. It had planned for a Project Implementation Review (PIR) which looked at evaluating the project methodology and application, but did not ensure the delivery of benefits.

The perception of SAP users at WNGI was that it was a good, reliable system that was easy to use. It made users get the knowledge and made the system at WNGI very efficient. At the time, users viewed SAP as a fairly well established system but the general view held by WNGI was that in future its use would expand to other areas and applications. One of the areas WNGI felt that they had not really worked on very well was workflow. This was considered a major benefit for end users because they could circumnavigate many transactions by having an automatic workflow around a whole range of different tasks that made it simple to come to terms with the application.

In WCWA SAP was considered reliable to the extent that the information that was put in was reliable. Participants in some instances had been critical of SAP mainly because of labour quality issues. They believed that there was nothing wrong with SAP as long as the information was entered correctly. Users in WCWA believed that people had underestimated the implications of not understanding and managing the information properly.

Participants in WNGI believed that SAP was a good system, easy to use, provided appropriate quality, reliable information both speedily and responsively.

As stated above, WNGI believed that one of the major benefits in SAP was workflow. The extraction of good quality financial data was also considered a significant benefit as well as the ability to leverage off one asset rather than multiple assets.

In WCWA SAP was considered reliable to the extent that information put in was reliable. As is often postulated, “Garbage in Garbage out.” Claimants asserted that there was nothing wrong with SAP. It was the way that users entered information. The quality of the information being entered needed to be well managed. The Water Corporation participants believed that there needed to be a group of highly skilled, empathic and trustworthy individuals with high credibility put together to drive the benefits realisation process in the organisation. They stated that the implementation of SAP was well managed and appropriately resourced. It was time boxed and did not try to achieve too much. It had a robust business case supporting its implementation and it had a sound project management methodology. The corporation made a strong commitment to benefit realisation as part of the initial implementation of SAP and as previously stated put the necessary resources in place to manage the focus or assist the business in the management of the delivery of those benefits. It was also required to report back to the executive and board. Participants in WCWA believed that the BR team ensured the delivery of benefits.

Despite the positive assessments, some WNGI interviewees believed that there were few benefits from running the system. It was just an expensive acquisition. Estimates for the IT transition cost were around AUD 26 million (Sunnucks 2010). triple the actual cost for implementation. Mostly expenditure was for servers and apps, phone systems and other components required in setting the business up, largely using its own infrastructure. Interviewees contended that SAP was the big cost factor when in reality it wasn't. In comparison, WCWA expended AUD 42 million on the acquisition and implementation of SAP (Water Corporation of WA, 1997a - 1997d).

WNGI's biggest perceived cost was functionality. Cost/resourcing was perceived to be a barrier to:

- Getting the best value for the dollar
- SAP not being used as planned and

- Appropriate resources being available for implementation of SAP.

The costs itemised by WNGI were considered a barrier to its implementation. WNGI interviewees claimed that they had not run the benefits out of SAP. SAP was perceived as a back-end system collecting data and not seen as a tool facilitating decision making or providing a full return on investment through Benefits Realisation.

As discussed, most WNGI users did not have knowledge of benefits realisation and were not familiar with the approach. Interviewees noted that WNGI's understanding was based around cost reduction and the appropriate use of resources. Additionally study participants believed that the Chief Financial Officer (CFO) should be driving the Return On Investment (ROI) from a budgeting point of view, whereas the Project Information Review (PIR) process was to review the quality and effectiveness of projects used in the business.

WNGI built its main business case around a number of business cases to proceed with the implementation and creation of a single SAP system. There was some perceived pay back or benefit but without a Benefits Realisation program in place it was difficult to track or measure the perceived improvements. Functionality was the significant improvement sought and according to users in WNGI had been achieved.

Nevertheless, WNGI interviewees noted a Benefits Realisation program would most likely be included in the business case if they implemented a program similar to SAP again. This would also ensure that projects with a true benefit would be authorised to proceed. Better business, better value for the dollar invested.

WCWA took the view that due to the level of investment it was going to make, it needed to be able to measure benefits. The processes put in place by The Water Corporation monitored and modified implementation over an extensive period of time. This was another difference between WNGI and WCWA.

WNGI was appropriately resourced and supported according to respondents as they effectively used a pre-developed template which assisted WNGI to 'hit the ground running'. So a great deal of time and resources was saved in utilising the template as a short cut to establishment. After implementation, participants at WNGI largely viewed SAP as a good system, easy to use and which enhanced existing systems. Nevertheless, customised packages are not always positively portrayed. Aslam, Coombs, and Doherty (2012, p. 73) consider that:

Organizations are making large investments in package based Enterprise Resource Planning (ERP) systems. While some organizations have achieved business improvement from their ERP systems, many still fail to realize the benefits identified at the project outset. One recommended approach to improve the likelihood of ERP system success and thereby delivery of benefits, is to avoid package customization. However, it appears that implementing a truly 'vanilla' system, although desirable, is rarely achieved. The degree of customization may also be important in influencing the level of benefits realized from ERP systems. A more tailored system may provide a better fit with organizational processes and hence the increased chances of benefits realization. Research that explores the relationship between ERP system customization and benefits realization is lacking.

WNGI arguably tailored their customised template to their implementation but did not appear to realise significant benefits.

WNGI interviewees believed that training was essential to getting users to a level where they were actually securing more of their information than the SAP implementation team at the time. Training was needed around the pre-existing level of SAP competencies already in WNGI. Financial reporting was considered to have significantly improved with SAP and was another useful aspect identified by interviewees. The capacity to provide appropriate, good quality, effective financial reports at year end was particularly beneficial for the business. This motivated users, providing them with a tangible output to start changing the culture while providing actual understanding of what the new system could do and how differently it worked to the previous systems.

Interviewees considered that training was a big issue in WNGI and providing input before training implementation was most important. WNGI participants believed that the human interface and training were the difficult issues to come to terms with. Getting value for money from their investment in SAP has been a significant issue as well. The other problem users faced was that not everybody could be trained around the same time period. WNGI looked at a distributive sort of user's approval where users were self-sufficient and where everyone could be brought up to speed at the same time. The IT department was perceived as a barrier. WNGI users were confused by their role. Clearly IT was there to support and facilitate the system not business facilitate IT. Implementing SAP-IT required a business benefit and not just a systems benefit which is where IT became confused claimed users in WNGI.

The approach to and the timing of training was an issue in both utilities. PC literacy and exposure to SAP were the biggest hurdles that had to be overcome in WNGI. The perceived complexity of SAP was challenging for users according to respondents from both utilities. WNGI participants considered that they would have benefitted greatly from training prior to implementation.

WNGI had looked at a distributive sort of user approval where users were self-sufficient. For a SAP user it was important to have the background training and to understand the logic behind transaction and processes prior to the implementation. Also, SAP had a lot of functionality which did frighten users who had not been trained.

The SAP Project Manager asserted that the Water Corporation was reported by participants to have cut training from its budget in order to save money. However, at implementation there was a realisation that this was a mistake and they re-established a full training program. The initial training budget was reallocated in order to embed SAP within users.

SAP was considered to have been successfully implemented in WNGI and WCWA. This success has been measured in different ways by each utility. WNGI carried out a Post Implementation Review (PIR). However this process was not finalised or published at the time of data collection. The Water Corporation's success formed part of the BR project where benefits and successes were recorded for the first few years post implementation. Many of the Critical Success Factors (CSFs) as identified by Umble et al. (2003) and Nah et al. (2001) have had an important bearing on the outcomes for these utilities.

7.7 Similarities and Differences

Table 7.1, p 169 outlines the similarities and differences theme by theme for both utilities. It shows the contrasting approaches to the implementation of SAP, creation of a Benefits Realisation program and how each utility managed its changing circumstances and the Change Management approach using technology as an enabler for change. Table 7.1 p. 169 also depicts the contrasting approach and demonstrated comparisons between the two utilities. The Researcher has endeavoured to identify the similarities and differences theme by theme as summarised and depicted in Table 7.1 and narrated below.

Table 7.1 Similarities and Differences

Theme	Similarities	Differences
Theme 1: Integrative theme	<ul style="list-style-type: none"> • All items are similar except those across indicated opposite. 	<p>WC:</p> <ul style="list-style-type: none"> • Integrated system • Process analyst • Started from scratch <p>WNGI:</p> <p>3 iterations of SAP already exist</p> <ul style="list-style-type: none"> • Sales and distribution • History/Knowledge • Ownership • Need a mandate
Theme 2: Leadership	<p>WNGI:</p> <ul style="list-style-type: none"> • Clarity in strategic direction • Leadership <p>WC:</p> <ul style="list-style-type: none"> • Clarity in strategic direction • Leadership 	<p>WNGI:</p> <ul style="list-style-type: none"> • Holistic view • Future focus • Coordinated approach • Operational clarity • Project team • Hindsight • Ground up approach • Quality of investment decision • Lead to other initiatives • PIR (Project Implementation Review) used. No baseline used for determining cost. • Only after system, process and functional improvement. <p>WC:</p> <ul style="list-style-type: none"> • Executive backing • Well managed process • Influencing • Supported • Take calculated risks • Good Business Case and Benefit Realisation • Team set up to monitor realising of benefits. • Benefit Realisation process
Theme 3: User Friendliness		<p>WNGI:</p> <ul style="list-style-type: none"> • Differentiated use • Don't utilize full capacity • Reporting capacity • Workflow • Better functionality • Upgrades, IT knowledge and systems

Theme	Similarities	Differences
	<p>WC</p> <ul style="list-style-type: none"> • User friendliness • Flexible to users' needs • Increased confidence • Make the job easier 	<ul style="list-style-type: none"> • Training with earlier revisions of SAP training. • Had to re-train especially at Jandakot. <p>WC:</p> <ul style="list-style-type: none"> • Some adaptation • Standardized process • PC Literacy • Monkey see monkey do on the job. • Well thought through funding training program • Expended extra million dollars on training after implementation.
Theme 4: Problem Solver	<p>WNGI:</p> <ul style="list-style-type: none"> • No similarities <p>W/C:</p> <ul style="list-style-type: none"> • No similarities 	<p>WNGI:</p> <ul style="list-style-type: none"> • Consolidated view of business • Core process • Prior knowledge of system • Reliable access to quality data • Excellent Reporting capacity • Operational clarity • SAP-IT'S capacity • Better functionality <p>WC:</p> <p>Supportive</p>
Theme 5: Planning theme	<p>WNGI:</p> <ul style="list-style-type: none"> • Getting the timing right <p>WC:</p> <ul style="list-style-type: none"> • Good lead in time 	<p>WNGI:</p> <ul style="list-style-type: none"> • Pre-planning and interaction • No baseline measure • Short term view • Planned versus reactive • Enormity of the task • Reliable access to quality data • Used a consultant template • Operational clarity • Long term implementation or view • No apparent key imperative for WNGI. • Use of template <p>WC:</p> <ul style="list-style-type: none"> • Had drawn line in the sand and could measure benefits • Y2K/Imperative • Clarity in strategic direction • Organisation business knowledge

Theme	Similarities	Differences
Theme 6: Best practice and global product		WNGI: <ul style="list-style-type: none"> • Visionary tool • Upgrade of IT knowledge and system • Upgrading of existing system • Long term investment or view • Short term view • Keep up with technological change • Reliable access to quality data WC: <ul style="list-style-type: none"> • Credible process • Requires a systemic view • Benchmarking • Framing questions or being framed by questions
Theme 7: Change/culture theme	WNGI: <ul style="list-style-type: none"> • Culture/change • Visionary tool • Technology as an enabler • Supporting tool for change WC: <ul style="list-style-type: none"> • Change • Visionary tool • Technology as an enabler • Supporting tool for change 	WNGI: <ul style="list-style-type: none"> • Driver of system change • Not always apparent • Reliable access to quality data • SAP created Resistance to change • Cultural connections/change • Keep up with technological change • Complements Culture change • Reluctance to change by some • Excellent Process change facility • Catalyst for cultural change/change management • WNGI required to integrate. WC: <ul style="list-style-type: none"> • Desire to change • Breaking down silos • Move away from silos • Thinking outside boundaries • Clarity in strategic direction • Lack of clarity about expectations • Current and future use • Better communication • Better access to information
Theme 8: Reliability of information	WNGI: <ul style="list-style-type: none"> • No similarities W/C: <ul style="list-style-type: none"> • No similarities 	WNGI: <ul style="list-style-type: none"> • Work flow • Multiple IT assets • Better understanding of the process

Theme	Similarities	Differences
Theme 9: Resource theme	WNGI and WC • Appropriately resourced.	WC: • No difference.
Theme 10: Communication theme		WNGI: • Communication good WC • Communication adequate.
Theme 11: Training theme		WNGI: • SAP competency already existed. WC • Training inadequate.
Theme 12 Realising Benefits theme		WNGI: • No baseline, no BR program. Only PIR in place. WC • Benefits Realisation program in place • Credible BR team driving Benefits Realisation

The Water Corporation was keen to have a Best Practice and Global Product, while the WestNet Group Infrastructure was more operationally focused and driven by apparent threat of mergers and acquisitions. WestNet Group Infrastructure needed to focus on going from three systems to one system. The Water Corporation wanted to change its business in a big way.

In this study, the themes are defined as a fundamental class of data. In the context of this study, they represent a fundamental issue or topic concerning the use of SAP in both utilities from a practical and theoretical perspective. This is discussed below in relation to some of the literature that has been reviewed in order to align both the theoretical and practical perspectives in this thesis. In particular, Boubekri (2001) and Sankar and Rau (2006) are cited below.

Integrative and Process Analyst theme

The Water Corporation conceived the acquisition and implementation of their ERP (SAP) from a new platform. They developed a well-integrated system and created the role of Process Analyst. The Accountability Framework (as illustrated in Figure 7.1, p.141) was a significant realised benefit that impacted the whole organisation. The Accountability Framework clarified roles, supported the seamless and integrated approach diminishing the silos prevalent at the time.

WNGI already had three versions of ERP (SAP) operating in different businesses under the umbrella of WNGI. The issue was to consolidate the three iterations into a single SAP system capable of serving the entire business in the 21st century which also resulted in breaking down some siloed behaviour. The strong set of SAP competencies within the business facilitated an expeditious implementation focusing on Functionality, System, Process Change and Improvement.

According to Boubekri (2001), an Enterprise Resource Planning system is an integrated set of programs that provides support for core organisational activities. Boubekri (2001) believes that ERP technology is an enabling key technology as well as an effective managerial tool. ERP systems allow companies to integrate at all levels and utilise important ERP systems applications, such as supply-chain management, financials, and accounting applications, human resource management and customer relationship management. The accountability framework of Water Corporation WA contributed to the position taken by Boubekri (2001) in the literature. WestNet Group Infrastructure's experience is similarly aligned to Boubekri (2001).

In addition, Sankar and Rau (2006) state that by integrating the whole business process it optimises and increases efficiency. The experiences of both utilities support this notion and this experience contributed to the success of both implementations.

Leadership

The Water Corporation produced a sound business case for the implementation of SAP, Benefits Realisation program and Change Management approach which enabled the realisation of strategic, significant, tangible and intangible benefits. Their approach was top down with the Board authorising the Corporate Executive to sponsor the business technological implementation.

Both utilities demonstrated clarity, strategic direction and sound, supportive leadership. Both utilities put in place well balanced, well-resourced implementation teams.

WestNet Group Infrastructure leadership took a ground up approach to their SAP implementation, using a customised packaged template from Shared Services, Power Corporation, Melbourne. They pursued their goal of acquiring and establishing a single coordinated system in order to attain system, process and functional improvement. There was no Benefits Realisation program but they had in place a Project Implementation Review (PIR).

Sarker and Lee (2002) suggested that strong and committed leadership, open and honest communication, and a balanced and empowered implementation themes as precursors of a successful ERP implementation. They found that only strong and committed leadership can be established as a necessary condition of successful implementation. This was the experience of both utilities which emerged in the findings located in Chapter 6 and contributed to the different but successful implementations.

Planning

Olhager and Selldin (2003) reported the importance of a pre-implementation process, implementation experience, and ERP system configuration. In relation to planning the two utilities got the timing right. The key imperative for WCWA was Y2K. There was no apparent key imperative for WNGI but they used their Consultant's template to facilitate an expeditious implementation of SAP. There was no baseline measure in place for WNGI to use as a guide to compare costs, acquired benefits, any improvements or changes that had occurred.

The approach to planning by both utilities supports the notion by Mandal and Gunasekaren (2003), reporting on an ERP implementation in a Water Corporation in Australia found three distinct phases of pre-implementation, implementation, and post-implementation planning to be significant on the success of ERP implementation. This was the approach taken by Water Corporation, which strongly supports the finding that the literature has posited. WestNet Group Infrastructure had a similar experience which was not as clearly defined as the literature suggested or the Water Corporation experienced.

WCWA had a clear strategic direction, creating a Benefits Realisation program and had drawn a line in the sand so that they could measure benefits, improvements and changes.

User Friendliness

Both utilities found SAP to be flexible for user needs which made the job easier. The main difference was that WNGI did not utilise the full functionality of SAP, BR, and Change Management in comparison to WCWA.

Problem Solver

There were no similarities between the two utilities. In WCWA this theme provided a sense that they were able to work through the different support requirements. WNGI found that SAP provided excellent reporting capacity and reliable access to quality data.

Best Practice and Global product

There were no similarities between the two utilities. WCWA pursued benchmarking whilst WNGI endeavoured to keep pace with technological change.

Change/Culture

The two utilities viewed technology as an enabler for change, a visionary tool and a supporting tool for change. The main differences were the resistance to change. Change was not always apparent in WNGI but was more apparent in WCWA as there was a strong desire to change in this organisation. Thinking outside the boundaries and moving away from silos within the business was also a significant change for WCWA.

Reliability of Information

There were no similarities between the utilities. However WNGI focused on workflow and multiple IT assets endeavouring to procure better functionality and a better understanding of the processes.

Resources

They were both appropriately resourced. However, WCWA had a Benefits Realisation Program in place with a small BR team of credible, expert people driving Benefits Realisation during the early stages of implementation.

Communication

In WCWA, the communication was acknowledged as adequate whilst in WNGI it was considered good. This was the only apparent difference.

Training

In WNGI competencies already existed which enabled them to implement and expedite, a customised, packaged consultant's template including the training. In WCWA the training was considered inadequate.

Realising Benefits

WNGI did not have a BR program in place. There was no baseline to facilitate the measurement of improvements/realising benefits whereas WCWA had implemented a well thought through BR program which had commenced realising significant benefits during its initial year of operation in 2000.

In summary, the three key themes for both utilities were Integrative, Leadership, and Planning. These were discussed in relation to the theoretical and practical perspectives in relation to the literature linked to them.

Survey

In addition to the above mentioned applications another significant activity in WCWA was the SAP Benefits Survey. WNGI did not carry out a survey such as the one carried out by WCWA. This was another difference in the way it managed its ERP implementation. There seemed to be little attempt by WNGI to objectively monitor and measure the progress of the implementation. WCWA wanted to find out early how the implementation had progressed.

The SAP Benefits Survey was initiated to measure the impact of SAP on the business since its introduction in 1998. In 1997, the Business Case supporting the implementation of SAP identified a return on investment of \$56M Net Present Value (NPV) over 8 years. Indirect benefits were profiled in the Business Case under two categories viz. strategic and operational. This accounted for 69 per cent of the return on investment. This target was accelerated to three years and a return of AUD 32.33 million was required to be realised. The accelerated target incorporated the HR/Payroll model, which was implemented on 1 July 1998 and not included in the original Business Case.

Outcomes of the survey can be noted in Appendix VII on p. 199.

Chapter 8

CONCLUSIONS

“Speak now in the ears of the people and let every man borrow of his neighbour, and every woman of her neighbour, jewels of silver, and jewels of gold.” Exe. 11:2 (AKJV)

8.1 Conclusions

In conclusion, the significant comparisons and differences between the Water Corporation, WA (WCWA) and WestNet Group Infrastructure (WNGI) are described below. Furthermore, the main interview question, **“How have the Water Corporation WA and WestNet Group Infrastructure WA implemented and utilised SAP-IT?”** has emerged inductively and deductively from the data gathered and analysed from the experiences and participation of interviewees in both cohorts. The evidence contained in Chapter 6 and 7 of this thesis clearly supports the successful implementation in both organisations. Only the Water Corporation WA realised significant benefits.

WCWA had created a well thought through business plan containing a pre-implementation, implementation and post-implementation approach. It also contained a well-structured Benefits Realisation (BR) and Change Management program enabling them to think and act outside boundaries. Their successful implementation defies the trends in most other organisations both here in Australia and internationally where three decades of literature is still suggesting the continued occurrence of an excessive Enterprise Resource Planning (ERP) failure rate.

WNGI had a more contained implementation approach. Their main objective was the consolidation of three systems into one system. They used a customised, packaged approach, a Consultant's template in order to expedite and shortcut their implementation. There was no Change management or Benefits Realisation (BR) program in place and so they limited their opportunities to maximise their Return On Investment (ROI) even though they attained their stated objective of creating a single consolidated SAP system to run their business in the 21st century.

Another significant activity in WCWA was the SAP Benefits Survey. WNGI did not carry out a survey such as the one carried out by WCWA. This was another contrasting difference in the way it managed its ERP implementation. There seemed to be little attempt by WNGI to

objectively monitor and measure the progress of the implementation. WCWA wanted to find out how the implementation had progressed at an early stage.

While the BR group has helped the process owners and their representatives develop project plans, benefits profiles and change management programs, actual delivery of project outcomes remained the responsibility of the business. See Appendix IV, p. 187, Audit and Compliance Comments. This approach was successful although, in some instances, commitments originally given to deliver benefits were not delivered. Performance Indicators for BR were inserted in Individual Performance Agreements for Senior Managers to deal with under performance.

The WCWA's methodical business approach well planned SAP implementation, well-structured Benefits Realisation Program and the SAP survey were the key differences between WCWA and WNGI. Both WCWA and WNGI concentrated on functional and system efficiency, process change and improvement. WNGI had a contained implementation without a Benefits Realisation Program using a customised, packaged Consultant's template. They achieved their objective of attaining a single effective system which would facilitate their business in the 21st Century. It would appear that the end result was cost neutral as they failed to maximise the benefits they could have realised because of the perceived strong IT approach in their implementation rather than undertaking a more business-like approach by contrast to that of WCWA. An important differential was the focus on people and change management which WCWA invested in and were thus able to realise significant benefits. This result certainly supports much of the thinking contained and cited in literature in this study and goes further, viz. monitoring and measuring progress, contracting senior management with performance indicators and regular reviews of resources, removal of waste, cost and budget reductions, changing the way business is done and creating a facilitative business culture. Using the technology as a catalyst or facilitator for change were Critical Success Factors (CSF's) influencing the realising of benefits and promoting change in WCWA. Whilst it would be correct to assert that both utilities achieved their objectives, WNGI attained limited improvements compared to the significant benefits WCWA achieved which suggests that their approach was more effective. This study is not conclusive but it supports the assertions by literature and positively demonstrates the importance of using people, the technology and change management which can result in significant benefits being realised.

8.2 The dissolution of the Benefits Realisation Group

The Benefits Realisation group ceased to function as of 30 June, 2001. Anticipating this change the group worked with the Corporate Executive and Senior Managers to develop a model that would enable the Corporation to fully devolve ownership and accountability for the benefits process to the business. This work was completed and endorsed by the Corporate Executive.

This work has involved:

- The delivery of a training program to Senior Line Managers on the benefit realisation methodology and toolsets
- Transferring responsibility for reporting on benefits to Management Accounting
- Developing a BR website that contains the methodologies and toolsets

Business ownership is the key factor that will ensure the ongoing success of the BR process. Changes to the way that business cases are developed, supported, and submitted for capital approval have already been made. In addition, in order to reinforce the importance of the BR process and ensure that delivery is not dissipated, specific targets will be included in Senior Managers Performance Contracts.

It was agreed by Corporate Executive (CE) in January 2001 that the Benefits Realisation Group would not be funded from 1 July 2001. The closure of the Benefits Realisation Group necessitated the integration of the Benefits Realisation into the business. This occurred in a way that positively impacted the business and complemented the work already undertaken to institutionalise a benefits culture. A process to achieve this by 30 June 2001 had been developed and this was linked to the Corporate Accountability Framework and Business Process Model. It established accountability for the delivery of business benefits through the application of a Benefits Realisation Model. This was the principal driver to facilitate integration of a benefits philosophy into the business. This framework stated, among other things, that:

“Where a role has corporate accountability for a business process or computer application, it is required to: Ensure that where improvements are made a process exists to ensure that benefits are realised”. (WCWA, Benefits Realisation Close Out Report, 2001 Appendix VII p. 199).

8.3 Future Directions

As the Benefits Realisation Group, The Water Corporation WA ceased to function as of 30 June, 2001, the project came to an end prematurely. The full suite of activities was unable to be fulfilled. There is an opportunity for further research to extend the experience and the outcomes obtained by the Water Corporation to more definitively explore the possibilities and opportunities to realise more comprehensive benefits than has been proffered. Furthermore, the approach by WestNet Group Infrastructure also provides opportunities for further research. The use of a customised package template combined with a Benefits Realisation Program offers significant opportunities for further change and benefits realisation in utilities.

8.4 Limitations

In summary a comparative study of Benefits Realisation and Change Management using Enterprise Resource Planning Technology, Systems, Applications, and Productions in Data Processing (SAP) in Utility Enterprises in Western Australia has been completed. A comprehensive narration of similarities and differences has been discussed in Chapter 7.

Further limitations (in addition to the ones mentioned in Chapter 1) namely that one ERP software was considered for this study, viz. SAP and that securing another data source (WestNet Group Infrastructure) took another three years. In spite of this limitation that the researcher experienced, benefits realisation has not made much progress globally during the last thirty years as stated previously in this chapter.

However, the key issues pertaining to both utilities are:

- Main objective for implementing SAP an ERP technology
- Methodology of implementation (pre-implementation, implementation, post implementation)
- Top down/Bottom up change
- Consultation of and participation of users

These are explained below

8.5 Main objective for implementing SAP an ERP technology

WCWA and WNGI needed to upgrade and modernise their technology in order to be competitive in the market place in the 21st century.

Both WCWA and WNGI concentrated on Functional and System efficiency, Process Change and improvement. The focus on technology functioning efficiently is a fundamental requirement for any business in the 21st century and both organisations achieved this.

8.6 Methodology of implementation (pre-implementation, implementation, post implementation)

WCWA had created a well thought through business plan containing a pre-implementation, implementation and post-implementation approach. It also contained a well-structured Benefits Realisation (BR) and Change Management program enabling them to think and act outside boundaries.

Their successful implementation defies the trends in most other organisations both here in Australia and internationally when the literature is still suggesting the continued occurrence of an excessive ERP failure rate.

WNGI had a more contained implementation approach. Their main objective was the consolidation of three systems into one system. They used a customised, packaged approach in order to expedite and shortcut their implementation. There was no Change Management or Benefits Realisation (BR) program in place and so they limited their opportunities to maximise their Return On Investment (ROI) even though they attained their stated objective.

8.7 Top down/Bottom up change

WCWA's top down, new platform for IT involving users of SAP and providing a consultative participative style of leadership was significant in contributing to a successful implementation in relation to this study. By comparison, WestNet Group Infrastructure's bottom up, Greenfield IT approach involving users achieved the objective of creating one SAP system for their business.

Clearly, involving people in the changes is a critical success factor for any ERP implementation and was a dominant theme recurring in the responses from the data collated from interviews with study participants.

8.8 Consultation of and participation of users

Effective Communication is an initial success factor playing a central role in the acquisition, implementation, and realising of benefits. By influencing people, getting them involved, participating, cooperating, empowering them and making them accountable, facilitates a strong working relationship is facilitated which enables the technology to be used for the realisation of significant benefits. When these qualities are fostered, trust is built and this enhances the possibilities of a successful ERP implementation. This has been evident in the two implementations of this study and supports much of the literature advocating the involvement of people in any ERP implementation.

How organisations care for and utilise the potential of their people is key to a successful ERP implementation. The literature overwhelmingly supports the outcomes and the view that involving people in the Change Management process enables the benefits of an ERP implementation to be harvested and is a significant theme in realising of deliverable benefits as was the case in the Water Corporation.

Perhaps the adage ‘Do as you would be done by’ enables and equips users of SAP in these organisations to develop commitment, contributing to the changes, realising benefits and ultimately owning the outcomes.

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Appendix I
Research Proposal Letter to
Managing Director, Water Corporation WA

53 Davallia Road
Duncraig, WA
blicky@bigpond.com

29 July, 2005

Dr. Jim Gill,
Managing Director,
Water Corporation of W.A.
P.O. Box 100,
LEEDERVILLE WA 6092

Dear Jim,

Re: Doctoral Research - Graham Blick.

My Research Proposal has been approved by the Graduate school of Business, Curtin University of Technology, W.A. The title of my proposal is, "A comparative study of Benefits Realisation and Change Management using Enterprise Resource Planning Technology (SAP) in Utility Enterprises in Western Australia". I am seeking your approval, support and assistance to research the successful SAP implementation in the Water Corporation and to explore the factors that determine success or failure. The research will also study SAP implementation in another utility enterprise in Western Australia. I have a passion for and strong interest in Benefits Realisation for which you are significantly responsible for initiating, in tandem with Garry Meinck.

A qualitative study using Grounded research in a business setting will look at what benefits are realised and how changes occurred as a consequence of implementing SAP and initiating a "Benefits Realisation Program". Results from these two utility enterprises will then be compared and contrasted. The expected outcome of this study will be the realising of benefits which could recur annually as well as reflecting significant changes occurring as a result of an integrated approach that accounts for economic, technical, human and organisational facets of change in both the Water Corporation and another Utility.

An interview questionnaire will be trialed in two phases to enhance content authenticity. Firstly, a trial interview will be conducted with several SAP users to assess the research instrument in terms of the language, content, and length. The feedback from this phase will be used to refine the tentative questionnaire. The refined interview questionnaire will be finally trialed with some SAP users in the Water Corporation, WA. The evaluation sheet will be provided to allow the respondents to give any comments or suggestions in regard to the interview questionnaire. This step is expected to detect any problems in advance of the actual study. Feedback from the final trial will be used to produce the final interview questionnaire.

It is intended that Samples will be drawn from two utilities (Water Corporation WA and another utility) that use SAP. The target sample is SAP users who use SAP to support their

tasks and the benefits that are realised through this usage. These activities will be undertaken with the least disruption possible. Once this stage is completed, it is intended that Data collection after the final test of the interview questions will commence in early October' Review of Documentation will also form part of the research.

The research will carry out a comparative study of technology supported Benefit Realisation and Change Management Process involving the Water Corporation, and another Utility enterprise using SAP in WA. This study will look at what and how Benefits have been realised and what changes occurred as a consequence of Benefits Realisation.

Findings will be compared with each other. The approach undertaken by the Water Corporation will be defined and the results articulated, looking at Benefits Realisation and Change Management. This will then provide the material to craft a thesis adding to the body of knowledge. Results from the research may also be used to develop a User's guide for the realising of benefits from SAP.

I trust that you will be able to accommodate my request.

Yours Sincerely,

Graham Blick,. FAIM, FAHRI.

cc. Mr Garry Meinck
Chief Operating Officer

Appendix II

Evaluation Sheet Doctoral Research

Evaluation Sheet – Doctoral Research

A comparative study of Benefits Realisation and Change Management using Enterprise Resource Planning Technology (SAP) in Utility Enterprises in Western Australia.

This interview guide will be used by the researcher and the researcher will conduct the interviews which will take + or – 45 minutes. All interviews will be recorded on a tape recorder. Please review the questionnaire and consider and evaluate the following:-

- | | | Satisfactory | Unsatisfactory |
|---|----------------------------------|--------------------------|--------------------------|
| 1 | Content Authenticity | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 | Appropriateness of language used | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 | Length | <input type="checkbox"/> | <input type="checkbox"/> |

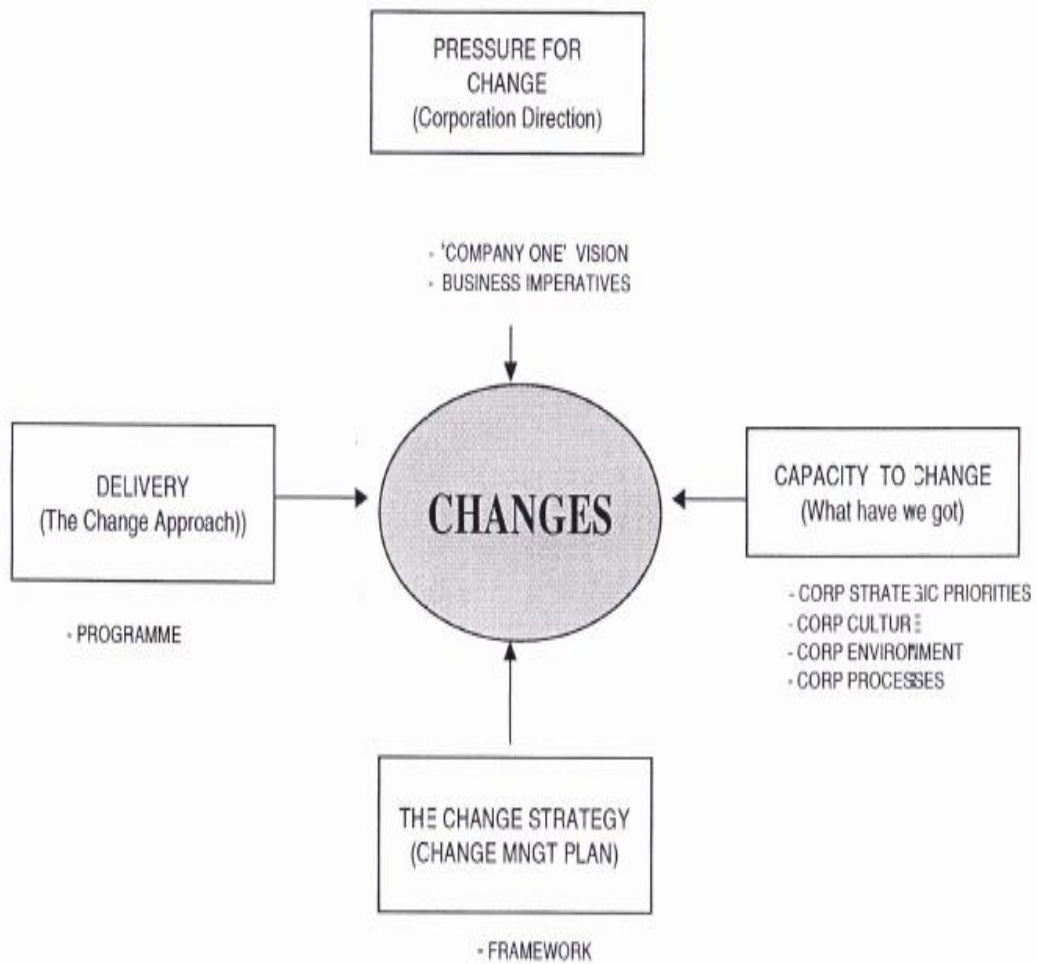
Please provide a written assessment on this research instrument and return to me. You may also wish to tick a box in either Satisfactory or Unsatisfactory.

Thank you for your assistance and co-operation.

Yours sincerely,

Graham Blick FAIM,FAHRI

Appendix III Part I:
Water Corporation WA
Change Management Approach



Appendix III Part II:

CHANGE MANAGEMENT

PRESSURE FOR CHANGE:

CORPORATION VISION-

To be recognised as an excellent customer orientated service organisation and as a world class manager of water and waste services. TO "COMPANY ONE"

BUSINESS IMPERATIVES -

- | | | |
|------------------------|----|---|
| • Government Service | TO | • Customer Service –
Customer orientation |
| • Business Maintenance | | • Business Development -
Commercialism |
| • Monopoly Driven | | • Commercial Performance -
Competitiveness |
| • Management | | • The (Work) Environment -
Leadership |

CRITICAL SUCCESS FACTORS :

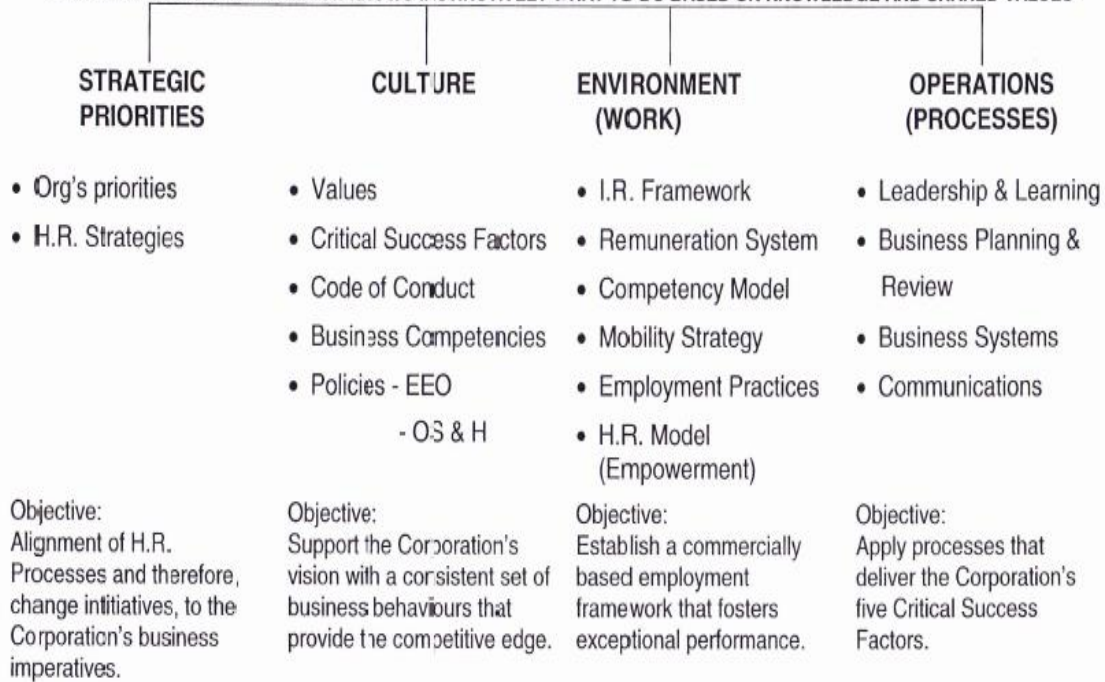
- | | | |
|----------------------|----|------------------|
| • Size | TO | • Speed |
| • Role Clarification | | • Flexibility |
| • Specialisation | | • Integration |
| • Control | | • Innovation |
| • Internal Focus | | • External Focus |

Appendix III Part III:

CHANGE MANAGEMENT CAPACITY TO CHANGE

STRUCTURE :

"TO CREATE A WORKFORCE WHICH KNOWS INSTINCTIVELY WHAT TO DO BASED ON KNOWLEDGE AND SHARED VALUES"



Appendix IV:
Audit and Compliance Committee

Notes and Action Plan
AUDIT AND COMPLIANCE COMMITTEE

Tuesday, 7 November 2000

047/2000 Management Review and Audit – Activity Report

The reports that were discussed and noted by the Committee include:

1. Review of Corporate Information Management Strategy (CIMS).

The Committee enquired whether the benefits realisation process was successful. Dr Gill advised that the process was instrumental in assisting to realise the benefits identified as part of the project justification process and in holding down ongoing costs. He added that the next phase would be to identify potential benefits above those included in the business case and to ensure that these benefits are realised.

Action: General Manager Planning and Development

APPENDIX V

Participant Information Sheet and Consent Form

Name _____

Subject No. _____

53 Davallia Road
South Duncraig
6023 WA

Dear

- RE: Doctoral Research - Graham Blick

The title of my present proposal is “A Comparative Study of Benefits Realisation and Change Management using Enterprise Resource Planning Technology (SAP) in Utility Enterprises in Western Australia”. I intend to explore the factors that determine success or failure of the SAP implementation in The Water Corporation of WA. The research will also study SAP implementation in another utility enterprise in WA.

A Qualitative study using Grounded research in a business setting will look at what benefits are realized and how changes occurred as a consequence of implementing SAP and initiating a “Benefits Realisation Program”. Results from these two utility enterprises will then be compared and contrasted.

An interview questionnaire will be conducted by the Researcher with SAP users in The Water Corporation of WA. Subjects interviewed will be coded in order to preserve the anonymity of informants and confidentiality of data which is being used for research purposes. You are requested to participate in 30 minute interview. You may withdraw your consent to participate in the interview at any time without prejudice or negative consequences

The approach undertaken by Water Corporation of WA will be defined and the results articulated, looking at Benefits Realisation and Change Management. This will then provide the material to craft a thesis adding to the body of knowledge. Results from the research may also be used to develop a User’s Guide for the realising of benefits from SAP.

I trust that you will be able to participate in this research and will be able to accommodate my request for research data.

Yours sincerely,

Graham Blick FAIM, FAHRI

I have read and noted the contents of this letter and I am happy to participate in the collection and provision of research data for this purpose.

Signed:

Date:

APPENDIX VI

M E M O R A N D U M

DATE: 4 JULY 2001

TO: GENERAL MANAGER, PLANNING & DEVELOPMENT

FROM: MANAGER, BENEFITS REALISATION

SUBJECT: CLOSE OUT REPORT ON THE CESSATION OF THE BENEFITS REALISATION GROUP - 30 JUNE 2001

CC: ALL GENERAL MANAGERS, BSEC, MANAGER CISB, HR BRANCH, BSG, SAP UPGRADE

As indicated above, the Benefits Realisation group will cease to function as from 30 June. Anticipating this change the group have been progressively working with the Corporate Executive and senior managers to develop a model that would enable the Corporation to fully devolve ownership and accountability for the benefits process to the business. This work is now completed and has been endorsed by the Corporate Executive.

This work has involved:

- The delivery of a training program to senior line managers on the benefit realisation methodology and toolsets;
- Transferring responsibility for reporting on benefits to management accounting;
- Developing a BR website that contains of the methodologies and toolsets;
- Incorporating responsibility for the delivery of benefits in the corporate accountability model;
- Incorporating the benefit process in the corporate process model

Business ownership is the key factor that will ensure the ongoing success of the BR process. Changes to the way that business cases are developed, supported, and submitted for capital approval have already been made. In addition, in order to reinforce the importance of the BR process and ensure that delivery is not dissipated, specific targets will be included in Senior Managers Performance Contracts.

Further, the SAP system has undergone a technical upgrade over the course of the last six months. The upgrade has been successfully completed, and as a result of changes to the configuration, and look and feel of the system, business owners have identified some key areas of process and workflow improvements.

As a result a series of "delta" projects have been initiated. These projects will be driven by business owners, who will have responsibility for ensuring that where improvements have been identified they are implemented, improvements measured, and benefits reflected in changes to budgets and business processes. In future any major functional change to the SAP system as a result of the program will need to be supported by a robust business rationale and measurable business case before additional expenditure is incurred.

Close out report on the cessation of the Benefits Realisation Group – 30 June 2001

FUTURE DIRECTION

It was agreed by CE in January 2001 that the Benefits Realisation Group would not be funded from 1 July 2001. The closure of the Benefits Realisation Group will necessitate the integration of the benefits realisation into the business. This should occur in a way that positively impacts the business and complements the work already undertaken to institutionalise a benefits culture. A process to achieve this by 30 June 2001 has been developed and this will be linked to the Corporate Accountability Framework and Business Process Model. It will establish accountability for the delivery of business benefits through the application of a Benefits Realisation Model. This will be on the principle driver to facilitate integration of a benefits philosophy into the business. This states, among other things, that:

"Where a role has corporate accountability for a business process or computer application, it is required to:

Ensure that where improvements are made a process exists to ensure that benefits are realised".

While the BR group has helped process owners and their representatives develop project plans, benefits profiles and change management programs, actual delivery of project outcomes has remained the responsibility of the business. This approach has been successful. Although, in some instances, commitments originally given to deliver benefits have not been delivered. This situation should be remedied by rolling down clauses already contained in corporate performance contracts to individual performance agreements.

SAP BENEFITS SURVEY

In addition to the above mentioned activities another significant activity was the SAP Benefits survey.

The SAP Benefits Survey was initiated to measure the impact of SAP on the business since its introduction in 1998. In 1997, the Business Case supporting the implementation of SAP identified a return on investment of \$56M NPV over 8 years. Indirect benefits were profiled in the Business Case under two categories - strategic and operational - and accounted for 69% of the return on investment. This target was accelerated to 3 years and a return of \$32.33M was required to be realised. The accelerated target incorporated the HR/Payroll model, which was implemented on 1 July 1998 and not included in the original Business Case.

Outcomes of the survey were intended to provide the following:

- an appreciation within divisions, regions and between SAP processes of the system's impact on the business and work practices;
- information to assist with the planning and implementation of an SAP version upgrade and associated delta teams; and
- a baseline upon which future productivity improvements of SAP implementation and the upgrade could be measured.

The Benefits Realisation Group designed the SAP Benefits Survey which was administered throughout the Corporation in November 2000. The response rate was 37.5%, with a satisfactory level of participation from most areas of the business, including Serco, Australia.

SIGNIFICANT RESULTS

Considering the responses to the survey questions, and from the comments provided, respondents have specifically identified opportunities for the Corporation to improve in the following areas:

- Better reporting facility.
- Remote access for country users.
- Advanced training, job specific training, tailored to employee groups, and more time to learn.
- Better interface between SAP and other corporate computer systems eg Grange.
- Less duplication between SAP and manual processes.
- Improve the "friendliness" of SAP - system down time, lock outs, passwords, cheat sheets, short cuts.
- The amount of time spent on IT problems.
- Reduce bureaucracy.

REPORT ACTIONS AND DISTRIBUTION

The following actions relating to the SAP Benefits Survey report have occurred:

- Report distributed to general managers, process custodians, process managers, divisional business representatives, Corporate Information Support Branch, Business Systems Group and SAP Project Upgrade.
- Acknowledgment of effort has been extended to the survey's contributors.
- Feedback to Serco Australia provided by Benefits Realisation Group.
- An article appeared in the Company One magazine to inform employees of the outcomes.
- Presentation to the Business Systems Executive Committee on 9 April 2001.

RECOMMENDATIONS

It is recommended that the following actions arising from the SAP Benefits Survey 2000 need to have been actioned by Process Owners:

1. Process Owners and Delta Teams take ownership of outcomes and act on the information contained in the survey report.
2. Process Owners share the information from the survey results with their lead team and ensure that all employees within business are informed of the survey results
3. Process Managers assist Process Owners in pursuing strategies with the business.
4. Formalise role & recognition for Local User Experts.
5. Continue to re-engineer and improve business processes.
6. Repeat the SAP Benefits Survey in April 2002 and compare against the baseline established by the 2000 survey.

7. SAP Upgrade project to incorporate findings into planning and implementation of version 4.6C.
8. The Business Systems Group consider the results and take appropriate action in the areas of training and system support.

Currently, there is little evidence that Process Owners/General Managers have taken the appropriate action as recommended in order to maximize benefits which could accrue from using the SAP technology (both versions 3.1 and 4.6C) as per the findings of this survey. Once again Senior Management and the Corporation is in jeopardy of not providing positive, proactive, and demonstrated leadership which would facilitate development of greater trust and confidence and accountability of the leadership in the Corporation by its employees.

CURRENT STATUS OF BENEFIT PROGRAM

During Year 1 the Corporation successfully achieved savings of \$6.79M in the SAP Process.

The total savings as at 30 June 2001 is \$14.91M against a target of \$31.32M as shown in the table. The target has been reduced from \$32.33M to \$31.32M as a result of the deferral of \$1.1M cost savings from the Plant Maintenance (PM) Process by one year. The additional \$1.1M savings will now be made in Year 4. A summary of the benefits delivered against targets is shown in the attached graphs:

- Finance and Controlling (FI/CO)
- Materials Management (MM)
- Plant Maintenance (PM)
- Project Systems (PS)
- HR/Payroll and
- SAP Process Benefit Realisation

Process	Total savings to 30 June 2001 \$M	Accelerated 3 year Target \$M
FI/CO	3.70	6.10
MM	7.00	9.07
PM	0.70	3.18
PS	0.49	8.16
HR/PAYROLL	3.02	4.70
TOTAL	14.91	31.32

The outcomes from the Corporation - wide Benefits survey have been presented to BSEC and other key stakeholders. Process Owners/General Managers are accountable and responsible for the changes required to improve the use of SAP and its processes as part of the continuous business improvement cycle in the business.

MAJOR SUCCESSES

Issues:

- PS process savings need to be reviewed and careful consideration given before changing any targets
- Year 2 of the 3-year SAP cycle is nearing completion. We are two-thirds of the way through the program. Projected progress may look like this:

Process	Benefits realised over 3 years (projected on current achievement)	3 Year Target	Projected Benefit Difference (Actual vs Target)
FL/CO	\$ 5.55M	\$ 6.10M	\$0.55M
MM	\$ 9.88M	\$ 9.07M	\$0.81M
PM	\$ 1.05M	\$ 3.18M	\$2.13M
PS	\$ 0.69M	\$ 8.16M	\$7.47M
HR/Payroll	\$ 4.53M	\$ 4.70M	\$0.17M
TOTAL	\$21.70M	\$31.21M	\$9.51M

It is important to note that on current performance, projections indicate that there will be a shortfall of \$9.51M against the agreed targets set by the Corporation. Unless PM and PS processes do something dramatic and deliver their agreed benefits, the Corporation will not achieve its return on investment from SAP as originally anticipated.

It is interesting to compare the degree of commitment, effort and achievement within each of the five processes. There is still time for those process owners carrying deficits to rejuvenate their change programmes and deliver their full benefits by the end of Year 3, in accordance with the Board's requirements.

CLOSE OUT PROGRAM OF WORK

After the decision had been made not to fund Benefits Realisation after 30 June 2001 the above mentioned Program of work was planned and has been completed in essence. (See Attachment A - Gantt Chart). In addition there are a further seven attachments in relation to the closure of the BR Program for your information and if appropriate action. There are a number of activities that remain to be completed at the time of writing. They are as follows:

PATENTING OF THE BR METHODOLOGY

Preparation of this work will be completed by 6 July 2001 and handed over to Rob Andersen for him to progress with Freehills. Until this has been completed it is suggested that neither the BR methodology nor the tools be put onto the website.

The delivery of the information package on the BR Process is proceeding slowly. Only three presentations have occurred to date. The next one is scheduled for 4 July 2001 during the Lead Team meeting in BW&W. It is suggested that the Process Owner (GM, P&D) and the Process Custodian (Finance Manager, P&D) demonstrate enthusiasm and leadership by arranging an early presentation to the P&D Lead Team. This will then present them with the opportunity to influence the presentations with other Lead Teams. Please note that in the short term Brian Jennings or Harry Thompson may be available to present.

The results achieved in the MM, FI/CO and HR/Payroll process were considered to be successful and FI/CO and HR/Payroll Processes were closed out and signed off in Year 1. MM Process continues to deliver savings and is making significant changes. PM and PS Processes have been disappointing. Greater commitment to the use of SAP could and should have been demonstrated by the Process Owners and their immediate subordinates with a more zealous commitment to pursue changes and Process Re-engineering.

The design and implementation of the Business Case Template within CIPC programs and other projects has been a great success and created a high level of awareness of BR and the importance of realising benefits from programs, projects and initiatives. The BR group initiated this tool with some input from the Investment Evaluation group. Other tools such as the baseline tool and the BR methodology have also contributed to the success of the Benefits Realisation program.

LESSONS LEARNT

The Benefits Realisation Group has facilitated the inculcation of a benefits culture within the Business and maintained a constant focus on benefits delivery and key issue resolution, which proactively assisted the business to identify and deliver measurable benefits. This was due to:

- Process Owners and Process Custodians supported by Process Managers providing both commercial and technical inputs and expertise.
- Aggressive budgeting strategy where dollar deliverables were deducted up front at the beginning of each financial year which imposed pressure on Process Owners/General Managers to initiate changes and process re-engineer in order to meet set targets.
- Regular monitoring and reporting of progress to CE and the Board.
- The constant pressure of a small BR group who provided expertise and a facilitatory role to customers for delivering of benefits against targets. The pressure by the BR group kept Process Owners constantly aware of their BR responsibilities and accountabilities, and the requirements to deliver benefits.
- Savings accrued from the realisation of benefits should not be spent elsewhere in the business so that an impact is made on the bottom line, or alternatively the Corporation only focuses on and reports on process savings which will not impact the bottom line.

FUTURE REQUIREMENTS

The BR process and the Process Owners need to ensure that the following occurs:

- Provide resources or a vehicle for identifying breakthrough opportunities that will deliver business benefits.
- Ensure that business, technology and people related initiatives are aligned and deliver business benefits.
- Facilitate the application within the business of the Process Model and Accountability Framework.
- Ensure that individual performance contracts of General Managers and nominated Senior Executives reflect BR targets and requirements.
- Continue to include BR targets in Corporate contracts.

- The response to the MR&A audit requirement relating to the competitiveness of the Purchasing function will be completed by 6 July 2001 and the report presented to the Manager Logistics Branch for his action. Currently, indications from the benchmarking exercise suggest that the Purchasing Function within the Water Corporation is competitive.
- I pass on my thanks to all those employees who have participated and supported Benefits Realisation. Additionally, my team are also thanked which was made up of the following during the 30 months we operated. They are as follows:
 - Harry Thompson
 - Peter Gamel
 - Derril Tennant
 - Peter John Moore
 - Brian Jennings
 - Tiala Berville
- In closing, the Benefits Realisation Group thank the Water Corporation for the opportunities presented during the life of the project and we wish the Corporation well in its future direction.

Appendix VII – SAP Survey, Water Corporation

Survey

In addition to the above mentioned applications another significant activity in WCWA was the SAP Benefits Survey. WNGI did not carry out a survey such as the one carried out by WCWA. This was another difference in the way it managed its ERP implementation. There seemed to be little attempt by WNGI to objectively monitor and measure the progress of the implementation. WCWA wanted to find an early indication of how the implementation had progressed.

The SAP Benefits Survey was initiated to measure the impact of SAP on the business since its introduction in 1998. In 1997, the Business Case supporting the implementation of SAP identified a return on investment of \$56M Net Present Value (NPV) over 8 years. Indirect benefits were profiled in the Business Case under two categories viz. strategic and operational. This accounted for 69 per cent of the return on investment. This target was accelerated to three years and a return of AUD 32.33 million was required to be realised. The accelerated target incorporated the HR/Payroll model, which was implemented on 1 July 1998 and not included in the original Business Case.

Outcomes of the survey were intended to provide the following:

- An appreciation within divisions, regions and between SAP processes of the system's impact on the business and work practices
- Information to assist with the planning and implementation of a SAP version upgrade and associated delta teams
- A baseline upon which future productivity improvements of SAP implementation and the upgrade could be measured.

The Benefits Realisation Group in conjunction with external consultants designed the SAP Benefits Survey which was administered throughout the Corporation in November 2000. The response rate was 37.5 per cent with a satisfactory level of participation from most areas of the business, including Serco, Australia.

Serco was an alliance partner of WCWA and managed the outsourced operations north of the river in Perth. Considering the responses to the survey questions, and from the comments

provided, respondents have specifically identified opportunities for the Corporation to improve in the following areas:

- Better reporting facility
- Remote access for country users
- Advanced training, job specific training, tailored to employee groups, with more time to learn
- Better interface between SAP and other corporate computer systems e.g. Grange
- Less duplication between SAP and manual processes
- Improve the “user friendliness” of SAP-system down time, lock outs, passwords, cheat sheets, short cuts
- The amount of time spent on IT problems
- Reduce bureaucracy.
- Incorporating responsibility for the delivery of benefits in the corporate accountability model
- Incorporating the benefit process in the corporate process model

APPENDIX VIII
Evidentiary quotes for findings

Water Corporation
Major Themes

1. INTEGRATIVE

The impression I get is that SAP is an incredibly powerful integrated computer. It's brought together a lot of benefits within the organisation in terms of disparate systems. It is extremely large and it is a very integrated tool. But the tool itself supports the business because it forces integration.

PROCESS ANALYST

The corporation was able to achieve this by implementing a process of what we would call process analyst where senior managers usually general managers from across the organisation were made accountable for a particular process. As a result they're responsible for the process across the whole organisation. This enabled the corporation to move into an area where they could actually put arguments safely implement standardised accounting functions; standardise procurement functions; standardise asset management functions etc. This subsequently has been the ground work that's enabled the corporation now to move to its' new accountability framework.

2. LEADERSHIP

INFLUENCING

From an organisation's perspective it has certainly driven the organisation in a certain way. Large and complex it used to supply a fair bit to the business .

SUPPORTIVE

Has to be innovative and creative and different but it does support us. It's a bedrock. And once you've got that bedrock in place you can do lots and lots of things.

EXECUTIVE BACKING

The next phase well two points; there needs to be is sponsorship right from the right from the very top.

You definitely need the normal executive sign on but probably over and above that you need to sign on from the management and you need management and employees to understand that this is about benefits.

Getting that your part of the business is part of the bigger picture. So people need to be signed on to that and that needs to be clearly communicated. I think you know, you've got to find people who may not want to go down that track but you need to make sure that at least you've got a executive commitment to follow through: management commitment to follow through for that to occur to be in a better place.

TAKE CALCULATED RISKS

I think that invariably on many occasions some of the types of investments we need to make are in fact leaps of faith. They can be based on you know the industry knowledge and intelligence gathered from the industry. I think they need to be based on competent analysis of the business environment on those kinds of issues but if you stick strictly to merit based evaluations of business outcomes then I think you then stifle the creativity and the opportunity for your business to go forward so you need management to demonstrate its capacity to select the right kind of investment not always linked to complete and full information. I guess management then needs to develop a track record of making well based sound investments and the benefits realisation process is part of demonstrating that building of that track record and making investments that would then lead the business to have confidence in backing those recommendations for future dates.

DEDICATED RESOURCES

You know you need to have dedicated resources to manage an implementation program. You need to have very strong ownership by accountable people within the business otherwise they just change. It's very difficult to put, to develop a benefits realisation program and then create a team of people to manage if you're not getting very strong support from the leadership of the organisation. By the leadership I mean the senior management of the organisation that really

need to support the the realisation program's managers and support the people. They need to be held accountable for that.

CLARITY IN STRATEGIC DIRECTION

Benefits realisation process needs to have a vision, a set of objectives and those objectives need to be a balance on how they make – how they improve the business. Anything that improves the business is ultimately a benefit to the end-user. It makes their life much easier. It makes - it actually challenges them as well which is another important thing. One of the things with information systems is they become darn dull and you need to engender a different flavouring in people's working environment now. So that - we're actually expecting them to do more: with less resources and to enable – for them to do that you need to give them the right tools. So BR is a process that is a tool of change. So change is more of a tool to be used to improve our business.

It provides clarity if it's successfully completed. I mean, at the end of the day, if you've identified some change and you're going to provide some benefits from that and it's successfully completed then it should result in the change process being completed. Therefore from the end-users point of view this is the chance which was one of those 'well now we have quality' but if it hasn't been successfully done then what you might find is that the end-user is doing all the work or his role hasn't changed or has changed in a way that wasn't originally planned.

G: So the morale of the end-user can be affected negatively or positively?

It can be morale; it can be the level of work we provide.

I'm trying to reiterate what I said but I guess that clarity is really important; it helps it would help me if I knew that we were going to do X and Y was going to happen. It would help me plan; it would help me um identify what I need to do to. I think it's just, it's a bit like asking for an inspection. It's about getting clarity. I think that's important. If you have clarity, then clarity at any point, clarity of objective and knowing what it is that you're trying to achieve and knowing that those things are positive. Even as an end-user or of a particular process, project or system, the future is a little bit more known and therefore it is known, people can tend to - a lot of people can tend to deal with it better. They might not like it but at least they know where they're actually heading. In an organisation that has a long tenure that's probably indicative of an older public

sector culture, that probably doesn't hurt. You're more likely to at least get some sign on to that and then realise benefits.

Simply by knowing what is in the program and having really developed some realistic goals of what you want to achieve you can promote people to follow it and of course the other thing is will and the motivation to do it.

3. USER FRIENDLINESS

People think it's difficult to use

I wouldn't suggest that the first implementation 3.1H was user friendly albeit it did provide a lot of advantages for the corporation for those who were regular users like dedicated materials management people or purchasing officers. But from an occasional user's viewpoint they found it reasonably difficult.

Navigation was way too many clicks of the button to get to be where you needed to be and the navigation paths weren't well cored or logical. More intuitive back then.

We've implemented SAP-IT as a total group system, rather than a number of separate systems which we've combined which is a system required by the business. Generally speaking we've been quite comfortable with SAP although it's not as user-friendly as many people may have portrayed it. But it does provide the benefits of total integration. There's a fair bit of making it reasonably user-friendly. When we first put it in the expectation was that it could be used by all managers. That's certainly proven not to be the case. It's not a simple thing for managers to go in and access information. People think it's difficult to use.

FLEXIBLE TO USERS NEEDS

I think to an extent that's possible it's got to be matched to the needs of the users. I mean business needs of the organisation you know. If you implement it without considering both of those things, then you may not get the flexibility you are seeking.

SOME ADAPTION

So there's a fair bit of adaptation. There's a fair bit of making it reasonably user-friendly because when we first put it in the expectation was that it could be used by all managers. Certainly that's proven not to be the case. It's not a simple thing for managers to go in and access information.

MAKES THE JOB EASIER

Any system will get used if people see that it helps them do their job. Helps them make the process easy. Helps them make their work life easy. Provides information that that they need to do their job. Any system would do that and SAP does that to varying degrees across its landscape.

If you're coming to a dedicated position where your role involves acquisitions for materials management, stores management, materials requirement, planning whatever else, you have no choice because that's why you've got a system. If you don't use the system you actually couldn't do your job.

STANDARISED PROCESS

Ah from end-users perspective what they what we're able to deliver was standardised processes, across a whole raft of things which whilst admitting there was significant amount of growth which you know, which is to be expected.

INCREASED CONFIDENCE

I guess as an end user it gives you that sense that the business is, does hold itself accountable for making sure that things are delivered and the outcomes are achieved. I guess as an end-user you'd like to think that it was actually giving and that ensures the system provides you with the functionality that was promised. That investments were being made wisely.

4 PROBLEM SOLVER

Can provide the answers to almost any question anybody's asked that's relevant.

SUPPORTIVE

Has to be innovative and creative and different but it does support us. It's a bedrock and once you've got that bedrock in place you can do lots and lots of things.

5. PLANNING

You need to have a well-developed plan to ensure that you are focusing on all the areas that need to be covered and that you are effectively managing to that plan.

G: Um, would you would you say planning plays an important part in that implementation?

Absolutely, planning up front in terms of understanding the business;

Well you definitely need to. We had, I think an extremely solid implementation plan. Pre and post implementation. We certainly had, I would say, pretty good because there was a fair bit of work in the process of us getting ready.

Quite a bit of planning went into it. I started in June /July the year before. I didn't get my team together until January the next year. I think Paul Ferguson, to his credit, coming out of an engineering environment, lead the team that was doing the registration of interest and assessing the paper based tenders. We did go and visit other sites and had a clear indication of what we were taking up especially in respect of retaining people at the end of the day because they learn a lot and the paths of educational and training which was actually improved by SAP. Every site that we visited that implemented one of my modules of SAP said don't underestimate what you're taking on and don't underestimate the effort, the length, the education and training. The planning was going pretty well. It's always easier after the implementation to say you've done something brilliant or something's worse and something's real.

CLARITY IN STRATEGIC DIRECTION

What it should be doing – benefits – a benefits realisation process needs to have a vision: set of objectives. And whilst those objectives need to be a balance on how they make – how they improve the business. Anything that improves the business is ultimately a benefit to the end-user. It makes their life much easier. It makes - it actually challenges them as well which is another important thing. One of the things with information systems is they become darn dull and you need to engender a different flavouring in people's working environment now. So that - we're actually expecting them to do more: with less resources. And to enable – for them to do that you need to give them the right tools. So BR is a process that is a tool of change. So change is more of a tool to be used to improve our business.

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G: So the morale of the end-user can be affected negatively or positively?

It can be morale; it can be the level of work we provide.

I'm trying to reiterate what I said but I guess that clarity is really important; it helps it would help me if I knew that we were going to do X and Y was going to happen, it would help me plan; it would help me identify what I need to do to I think it's just, it's a bit like asking for an inspection. It's about seeking clarity. I think that's important. If you have clarity, then clarity at any point, clarity of objective and knowing what it is that you're trying to achieve and knowing that those things are positive. Even as an end-user or of a particular process, project or system, the future is a little bit more known and therefore it is known, people can tend to - a lot of people can tend to deal with it better. They might not like it but at least they know where they're where they're actually heading. In an organisation that has a long tenure that's probably indicative of an older public sector culture, that probably doesn't hurt. You're more likely um to at least get some um some sign on to that and then realise benefits.

Simply by knowing what is in the program and having really developed some realistic goals of what you want to achieve. You can promote people to follow it and of course the other thing is the will and the motivation to do it.

GOOD LEAD IN TIME

Well, apart from us, the factors that led to successful implementation; I think there was a very good result even though we were focussed around Y2K we did actually start a fair way in advance.

Y2K

Well when I reflect on our implementation of SAP my understanding is it was driven by the need to have some new IT architecture in place for the Y2K situation. So there was an imperative which ought to be done on time so I guess that for us that was the main driver and that introduced

some interesting challenges in its implementation in that there wasn't normal flexibility to extend time frame to enable full scope to be delivered. My understanding is that we probably compromised some of the scope of some of the deliverables to make sure that that the imperative for Y2K was met. Whether that's a normal situation or not for most businesses; Well I guess it's not but it certainly gave an imperative to have it done within a within a particular time frame and I think in reality in terms of project managing and implementation that was probably a major benefit in having a burning practical driver that required it to be done by a certain date. My experience of other IT projects is that they can tend to drift in both time and as a consequence dollars whilst people continue the pursuit of some idealistic scope that was defined in the days when you didn't have full understanding of a that which was deliverable. It might be different now, to eight years ago so if you're talking about eight years ago, Y2K was a key influencer as well as trying to pull some integration into our system.

Well, apart from us, the factors that led to successful implementation; I think there was a very good even though we were focussed around Y2K we did actually start a fair way in advance. So we had enough time to do a lot of the planning around what would this mean given the business had a lot of disparate (basically unlike or different) systems and a lot of integration that that wasn't as good as possibly what it could be. So that was pretty critical. I think the people that were involved in the whole project were very critical with their business knowledge; very critical that they had a lot of organisational business knowledge not just IT savvy. I think that we did have a pretty structured process which was around quite a lot of the project. We were supposed to have had a structured process which we could actually follow, so there was genuinely management commitment. Y2K certainly helped because there was this ,well we've got to do something so let's make sure we try and do it right but at the same time we try to do it we tried to make an appropriate SAP process change.

The evaluation well why did we choose it? Well, I suppose the first question is why we didn't go down the path of them going out the door to them. It was probably based on a corporate information strategy management document that said we may have a problem in Y2K. So a lot of research was done on that. A lot of research was done by that group in respect of where did we want to be in the business as far as an integrated model goes in the future. Integration's a big issue because maintaining interfaces of approximately 40 systems is pretty complex, expensive, labour intensive and whatever else so it went out the door for er expressions of interest or some other terms similar to that anyway. Probably all a question of the pay. We did

an assessment based on the operating past of the business that SAP could support and we did have as I said earlier paper based evaluation to draw on to a degree which was flawed. But I must admit I did score MIMS slightly harshly on materials management on SAP at that stage in the game and if I'd had a little more accurate data from SAP's submission, I would have probably scored them even further and that's not necessarily because MIMS was a far superior product just simply that the way one expects supply information management system data and data conversionwhat even you had to do with seemed to be much better. It was pretty much designed by early defence forces of Australia cataloguing in other words and its terminology for materials requirements planning or inventory management or materials management or whatever you would nickname it was pretty similar.

When we put in SAP there was obviously the year 2000 issue which was something that was around for us at the time which forced us to think about our IT systems and needing to upgrade and/or replace them. So a driver which was fairly strong and obviously an issue. There was a, a bit of a desire to want to think about streamlining and realigning our business processes along best practice lines which we felt we got through implementing a system that was used by lots of different organisations and businesses. So, I think Y2K was strong for us, the desire to want to realign ourselves and establish better business processes in the organisation was quite key. A recognition that we wanted to, we did want to integrate a lot of the data in key parts of the business were quite challenging and based a desire to try and bring on a lot of that together. They were all the sorts of things to me that sort of drove us into SAP. I'd probably say that the Y2K thing was probably strongest again. That sort of essence, they're the sort of things that influenced us to get into it I suppose if that was sort of the intent of the question.

ORGANISATION BUSINESS KNOWLEDGE

So we had enough time to do a lot of the planning around what would this mean given the business had a lot of disparate (basically unlike or different) systems and a lot of integration that that wasn't as good as possibly what it could be. So that was pretty critical. I think the people that were involved in the whole project very critical with their business knowledge; very critical that they had a lot of organisational business knowledge not just IT savvy.

6. BEST PRACTICE AND GLOBAL PRODUCT

So, there has to be beneficial result to the business overall. The fact that it has such a wide, quiet a wide base across the world gives it a lot of global reach for the point of view of best practice.

REQUIRES A SYSTEMIC VIEW

In a lot of cases it is hasn't though. People don't understand the implications of some of their some of their actions that accumulate up to that lead to information in the system. For instance people do not understand- you know if you talk about a consolidating information IT system which information can flow all over the place. If you find that people are held at a very narrow focus and say well that is all I'm interested in and don't consider my entering all the information and completing all the various fields – they're really impacting on the whole corporation. Because that marks down information as unreliable when there's gaps in that information which may not be important for them but may be important to people in other parts of the organisation. Therefore, whilst we talk about some of the benefits where you can get all the information in and then it becomes available for everyone across the organisation. To some extent it's not, because people haven't done their job properly and pieces of information's missing or inaccurate or both.

BENCHMARKING

The last major IT related thing that I was involved in here was part of the result of the corporation wanting to look forward to electronic trading. Whatever else, I had to go and investigate electronic trading so we had to then look at benchmarking, benefits realisation we'd look at as well what is it costing us now we'd done these figures previously and we've been involved in Australian benchmarking consulting stuff and other forms of benchmarking studies and how efficiently we can make the product and benefit realisation and what it would cost. So whenever we developed a business case we developed a program of how we realise benefits. So a part of realising benefits is we used to do all these purchase orders or process requisitions in internet time - a question of so many purchases for the year. So before and after how quickly can you turn an authorised requirement plus purchaser plus supplier. How quickly can you find the cost of processing purchase orders and handling the business. All those factors. So pretty much on a benchmarking process start and finish with a better resolve and reporting.

CREDIBLE PROCESS

There needs to be a group of highly skilled individuals put together to drive benefits realisation processes with high credibility in the organisation as well as trust and empathy.

I think without that alignment of people involved in the processes and the chances of it based on a limited success I think you need to have people with credibility within the business, involved in the benefits realisation process otherwise it just becomes an adversarial thing down the track where the people have got a job to do implementing the benefits realisation process but they haven't got traction and the credibility of the business. They may have to do that. Then it's a downward spiral and not a very constructive place to be.

FRAMING QUESTIONS OR BEING FRAMED BY THEM

I know that the feedback I get from talking to the those who are closer to SAP than I am is that its an incredibly powerful tool that can pretty much do whatever you want it to do. Perhaps the intelligence that the organisation has in both framing the questions it wants to ask but also in setting up the SAP implementation that enables you to have the questions you might want to ask in the future answered so you really need to think through those business processes, think through the kind of questions you may want to answer down the track so that you implement it in a way so those questions can be asked. I think every time I ask the questions. SAP will tell you whatever you want.

7. CHANGE

THINKING OUTSIDE BOUNDARIES

There're lots of those around. What SAP does is it gives you the ability to think beyond the boundaries and to rise and to get what you currently have and it supports a rapid ability in an organisation to think about change a different way.

SAP supports continual change. Has to be innovative and creative and different but it does support us. It's a bedrock. And once you've got that bedrock in place you can do lots and lots of things. Very much a provider of the tools that keep the business running. It's very much the operating hub for a number of core processes within the business. It's not the be all and end all for all processes so other processes may hang off the side of it but SAP has to be the core. Now that the software is in place, it has to, it has to really drive the core processess, a lot of the core processes for all of the organisation.

Well, I guess it's like all of the those types of systems – once you've got them in place, they become almost the backbone under which you operate. You become captive somewhat to the system.

CURRENT AND FUTURE USE

Well as our ERP it is central and fundamental to our business success I mean as a as an organisation its got an asset base of in current replacement dollar terms of some 18 billion dollars. We've got assets that have got lives that for some of the ah active assets like M&E and control systems of 10-20 years right through to civil infrastructure with lives in excess of 100 years Our SAP system will be central to our business for many many decades to come so it is fundamentally important that we get it right now and that we understand what's involved in maintaining the data and the system so it is available and of use to people in the future.

You're actually captive to its ongoing upgrades and locked into the future because they change - ERP change is a very substantial business decision.

DESIRE TO CHANGE

Well, I believe the major factors that influence an organisation's desire to have a system like SAP is it's driven by desire to change. I think you could say you know, it's just an effective accounting system and what not but it isn't.

The corporation was going through a cultural change as well as an operational change

VISIONARY TOOL

It's a visionary tool so to speak; it's not it's not like microsoft office (which is very good). but it's a visionary tool set. You're only limited in your applications with SAP by your own imagination; and your own ability to change the environment you're in. Therefore, you can set the bar as high or as low as you like. For argument's sake, the Water Corporation significantly improved its finance; materials management; asset management; operational and project management functions as well as HR functions as a result of implementing the functionality of SAP.

BREAKING DOWN SILOS

But that's a multitude of other natural factors which create silos of the organisation. Someone like myself who gets involved in strategic products of the operations maintenance and capital works. I see something costing us a lot of money in the field. I do something about it and I cop

a lot of criticism for re-engineering a product and trying to make a better product than it is. So you don't always get the support across the board for that sort of product re-engineering because you seem to be interfering with someone else's process. The accountability model the corporation's been trying to set up in the past couple of years has been partly to try to break down the silos.

It tended for a short period of time in this case, to break down those silos and allowed the business to think about the water business not a branch, a region, a discipline.

MOVE AWAY FROM SILOS

The corporation at the time SAP was implemented, the corporation had a very silo-ed or interim view of the way it operated. There were a number of operating divisions with operators as entities in their own rights i.e. little businesses if you like. So that major change that that was required of SAP was to convince the board and senior managers that a top down approach was necessary in order for SAP to be successful.

TECHNOLOGY AS AN ENABLER

So I guess I would say that the technology is more an enabler. So yes, it can be used to say hey we want to focus on this process. We're going to bring some technology in but you – but the reason you're bringing in the technology is because you do want to change the process. The result of that might be you want, process managers to have more accountability so you're building the process more to make it easier for them to do what they're going to do. But then you still have to hold them accountable, outside of the technology. So yes it can help but I'm not sure that that would be the only reason that you would actually bring the technology into place. I think it would be – you probably make a decision around well we want to we're trying to move towards say a more process oriented organisation. Oh yeah, focus on the tool would help force that, but you need to do some work in the business processing in the thinking and stuff before hand. Otherwise just putting the tool in itself would not help.

BETTER COMMUNICATION

I don't think it was well articulated and through the planning up front as to whether those targets were real and whether they were achievable. Secondly, I think lack of leadership and commitment from executives for driving efficiency and thirdly I should add all this was being

managed by a manager a realisation manager who was coordinating all this. Once that position no longer existed I think that you removed the the ability to drive that train. So if the executives in the organisation didn't have a strong leadership in the area and whilst you had a project manager who was managing the program – who was there to keep the bastards honest (if I can use that phrase) technically once you moved - you removed him from that, it was very difficult to sort of maintain that. As a as a consequence of that the organisation has gaps within its own benefits program.

LACK OF CLARITY ABOUT EXPECTATIONS

Ah I think some of the barriers probably would be an issue of a lack of clarity about what the expectations were. More the expectations not being documented in a way that's easily measured.

COMMUNICATION

There needs to be very effective communications process put in place as well as a reporting process. And then there needs an ongoing commitment er over a period of years to the process rather than months. Months will not work and getting that part of the business is part of the bigger picture. So people need to be signed on to that and that needs to be clearly communicated and I think you know, you've got to find people who may not want to go down that track but you need to make sure that at least you've got a executive commitment to follow through: management commitment to follow through for that to occur to be in a better place.

BETTER ACCESS TO INFORMATION

They are now able to access information more readily, have more control over their working environment. They are able to become – they are more productive!

BENEFITS REALISATION

Ah what it what it should be doing – benefits – a benefits realisation process needs to have a vision: set of objectives and whilst those objectives need to be a balance. How they make – how they improve the business. Anything that improves the business is ultimately a benefit to the end-user. It makes their life much eaiser. It makes - it actually challenges them as well which is another important thing. One of the things with information systems is they become darn dull and and you need to engender a different flavouring in people's working environment now. So that - we're actually expecting them to do more: with less resources. And to enable – for them

to do that you need to give them the right tools. So BR is a process that is a tool of change. So change is more of a tool to be used to improve our business.

Yup, it provides clarity if it's successfully completed. I mean, at the end of the day, if you've identified some change and you're going to provide some benefits from that and it's successfully completed then it should result in the change process being completed and therefore from the end-users point of view this is the chance which was one of those 'well now we have quality' but if it hasn't been successfully done then um what you might find is that the end-user is doing all the work or his role hasn't changed or has changed in a way that wasn't originally planned.

G: So the morale of the end-user can be affected negatively or positively?

It can be morale; it can be the level of work we provide.

I'm trying to reiterate with what I said but I guess that clarity is really important; it helps it would help me if I knew that we were going to do X and Y was going to happen, it would help me plan; it would help me identify what I need to do. I think it's just, it's a bit like asking for an inspection. It's about seeking clarity I think that's important. If you have clarity, then clarity at any point, clarity of objective and knowing what it is that you're trying to achieve and knowing that those things are positive. Even as an end-user or of a particular process, project or system, the future is a little bit more known and therefore it is known, people can tend to - a lot of people can tend to deal with it better. They might not like it but at least they know where they're where they're actually heading. In an organisation that has a long tenure that's probably indicative of an older public sector culture, that probably doesn't hurt. You're more likely to at least get some sign on to that and then realise benefits.

CLARITY IN STRATEGIC DIRECTION

Ah what it what it should be doing – benefits – a benefits realisation process needs to have a vision: set of objectives. And whilst those those objectives need to be a balance. How they make – how they improve the business. Anything that improves the business is ultimately a benefit to the end-user. It makes their life much easier. It makes - it actually challenges them as well which is another important thing. One of the things with information systems is they become darn dull and and you need to engender a different flavouring in people's working environment now. So that - we're actually expecting them to do more: with less resources. And to enable – for them to do that you need to give them the right tools. So BR is a process that is a tool of change. So change is more of a tool to be used to improve our business.

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G: So the morale of the end-user can be affected negatively or positively?

It can be morale; it can be the level of work we provide.

Simply by knowing and I think I've answered this earlier in 10C. By knowing what is in the program and having really developed some realistic goals of what you want to achieve. Um you can promote people to follow it and er of course the other thing is will and the motivation to

8. RELIABILITY OF INFORMATION

It's reliable to the extent that the information put in is reliable. Garbage in, garbage out. We do see that. From my experience, the implementation of SAP or I guess the 8 years we have had it in the organisation; people tend to be critical of some aspects of SAP mainly because of labour quality issues. And there's nothing wrong with SAP; it's the way that people are entering the information. In the organisation one of the premises about the implementation of SAP was that you would be trying to eliminate as much interference by putting in mandatory fields and barriers for people entering data as opposed to the view was you entered the information- you enter it once and you enter it correctly. Um I think people have underestimated the implications of that. Therefore, part of the issue um that you have when people say, "It's not a good system it is a problem you can do nothing about." It's really about people not understanding it and that if you don't if you don't manage your information properly in terms of quality; what you what you enter is what you get out of it.

9. RESOURCES

HIGHLY SKILLED TEAM

There needs to be a group of highly skilled individuals put together to drive benefits realisation processes with high credibility in the organisation as well as trust and and and empathy

GETTING GOOD SUPPORT SYSTEM IN PLACE

If you're talking NOW, I think it is very much around trying to get a support system in place or a system in place that has a very good support capability and again drive the integration of the business together. But hopefully um it then makes the bottom line um for the business better because if it's not making the bottom line for the business better, then it's not going to be much use.

Look, I suppose the biggest thing at the end of the day that influenced the establishment was we had to have a system that would handle the 21st century.

WELL MANAGED PROCESS

That's that's all about process. The implementation of SAP was well managed. It was time boxed. It did not try to achieve too much. It had a robust business case supporting the implementation and it had an extremely good project management methodology. In addition, this organisation took the view that if it was going to make the level of investment it was going to make, it needed to get some benefits as a result. Therefore, it would have more of these expensive business engagements in order that the required business changes and associated benefits could be identified and, and subsequently monitored. So what this organisation did, it put in processes both implementation and change in place where that success of the implementation and the ongoing realisation of the benefits associated with that implementation were monitored and modified over an extensive period of time.

Well I'm glad that we're given the tight time frames that existed. It was it was imperative that we had very tight planning to deliver so yeah I would I would think you'd need to have very good planning.

I think that we did have a pretty structured um process which was around quite a lot and we were supposed to have had a structured process which we could actually follow, so there was genuinely management commitment; Y2K certainly helped because there was this well we've

got to do something so let's make sure we we try and do it right but at the same time we try to do it we tried to make a successful SAP process change.

PROCESS ANALYST

The corporation was able to achieve this by by implementing a process of what we would call process analyst where senior managers usually general managers from across the organisation were made accountable for a particular process. As a result they're responsible for the process across the whole organisation. This enabled the corporation to move into an area where they could actually put arguments safely. Implement standardise accounting functions; standardise procurement functions; standardise operational requirements, standardise asset management functions etc etc and this is subsequently been the ground work that's enabled the corporation now to move to its to its new accountability framework.

HIGHLY SKILLED DEDICATED RESOURCES

Well the original what I should have said in the last question was the corporation made a strong commitment to benefit realisation as part of the initial implementation of SAP and as a result would have ideally put together a team of highly skilled dedicated resources to deal to manage the focus or assist the business in the management of the delivery of those benefits and also it was it was required to report back to the executive and board. So the structure was; there was a project director, and several other key resources supported by by appropriate external resources when required in an admin function. So it wasn't a large team who had extensive exposure to the executive and the Managing Director.

DEDICATED RESOURCES

You know you need to have dedicated resources to manage an implementation program. You need to have very strong ownership by accountable people within the business otherwise they just change it. It's very difficult to put, to develop a benefits realisation program and then create a team of people to manage that if you're not getting very strong support from the leadership of the organisation. By the leadership I mean the senior management of the organisation that really need to support the the realisation program's managers and the support people. They need to be held accountable for that.

HIGHLY SKILLED TEAM

There needs to be a group of highly skilled individuals put together to drive benefits realisation processes with high credibility in the organisation as well as trust and empathy and do it.

WestNet Group Infrastructure

Major Themes

1. INTEGRATIVE

It's a good product um it's very integrative but it only works if you have sort of a more standard integration and don't tend to change the functionality too much.

INTEGRATED SYSTEM

Um I think the fact that it's all one system is great so, and you can pull anything out of it as in group reports or anything.

INTEGRATE IT INTO BUSINESS THINKING

On the back of the requirements to implement it, it's really been a matter of a number of people within my team in the finance and admin team um uh to understand the system, understand um the impact of the some of entries and the journals and the processes that they're that dealing with. Whereas before um they would be fairly isolated, fairly specific activities, now what we are asking them to do is understand the whole process flow so that they are are fully fully aware of what the impact is throughout the uh throughout the business throughout the system.

G: Is that working well?

Um It is, we've obviously had some hiccups but that's the way you learn so um its its its in a nutshell working well.

INTEGRATE MULTIPLE SYSTEMS INTO ONE

Well some of the, the the reality of it is that while WestNet Infrastructure Group has sort of, well obviously has replaced it's previous systems with a new system um other than sort of benefits where we've managed to you know get a bit, get three systems into one system and you know we've been able to restructure some of the financials and obviously as you said help with things

like out at Jandakot, the longer term goal of getting all aspects onto SAP is really where the the final benefits realisation will come. So um WNG still has a task ahead of it to to get to that point which would include maybe getting SAP onto um WestNet Rail or along those lines. So there's been changes that has you know put into place to get some benefits realisation as discussed you know more training, getting users better involved in SAP-IT and understanding what they can get out of the uh the environment so we start to bring up the awareness of what actually they've the tool they've got but it's only in the portions of already existing, previously used it and the next step is the um you know the full sort of roll out across the organisation.

G: Does WestNet Group have stretch?

PARTIAL INTEGRATION

I think we, are transitioning changes well at the moment, I think, I believe the benefits are that we have a successful implementation in as much as we are running the rear end now as well, as the front end, but we've had no major traumas, we've had no major problems around rear end or reporting or people using the system.

2. LEADERSHIP

GROUND UP APPROACH

Um the but I think the the analysis we did upfront on how do we go about SAP and our decision to take on a Greenfields' approach and build everything from the ground up um and and build the project team and and the structure and go out and source a supplier that came in with a level of competency in that space um I think those factors with the some engagement with the business we started from ground up was, the reality was um the the yeah implementation was such a success. Um it didn't go, you know not that it went smoothly along the whole way but went, but when you know we did hit the bumps along the way we had everyone uh, everyone's focus and buy-in to get over those bumps that happened in the SAP implementation.

WELL MANAGED PROCESS

When they were doing like the workshops before, Davey and Michelle Richardson, now they've worked in the business so they they understood what was required from our side of it, so the fact that they were involved like you say it wasn't just technical people, they they really did know what we needed it for. Um and then the workshops and the training, and they basically sold it, told us what it could do, as a benefit, so they sold it to us. So that really helped.

OPERATIONAL CLARITY

Um up front the uh things to encourage people to use it is a clear um I suppose presentation of the uh operational side of it and that would then show it's ease of use and the benefits of uh that it would realise it is quite a simple tool to use um especially with the reporting functionality of it.

PROJECT TEAM

Successfully, hmmm. I think it was having having the correct people on the team to implement it and it was the right people there.

NEED A MANDATE

Ah , Ah you need a bit of a mandate from maybe the CFO(Chief Financial Officer) or somebody to sort of do that because a lot of people find it difficult from a jurisdiction point of view to go to a General Manager and say hey you have not really realised any benefits. It really has got to be the CFO who has to go and say you have not really achieved this so next time round don't expect me to sign off on something or whatever. So um yeah it needs to be that way.

FUTURE FOCUS

I guess that coordinated approach is obviously something that needs to to be focused on in the future.

OWNERSHIP

Uh I think ??????um there needs to be an owner for the process, at the moment, and the owners are kind of dispersed across the business. Everyone's maybe looking at it piecemeal or not at all and um at this stage you know if you were to actually do it across the whole of WNG you would need to have someone ultimately responsible for that process and programme.

COORDINATED APPROACH

Yeah pretty much, it it is a coordinated approach there from putting my finance hat the obviously capital restrictions we um and and op-ex restrictions that we need to make sure we get the best bang for our buck. That's not always easy there was always going to be a situation where having

implemented a a SAP system that was pretty much like-for-like there was going to be a significant demand on um all resources to enhance what essentially we now have.

We did it, well we had to change you know like a steering committee of change managers, every part of the business was represented.

QUALITY OF INVESTMENT DECISIONS

We need to allocate the right amount of cash flow to the right project. So I think that benefits realisation will have to play a bigger part in the future because you will need to justify these projects a lot more succinctly than we did before and as the regulatory regime the access arrangement and the likeness to one of their works it puts pressure on you as well to become more accurate around those benefits um so I guess the benefits realisation is starting to become much more important when you have got a scarce cash flow to forward that previously the linkage to funding was not that important . But I think the tragedy is that the businesses do not understand that.

CO-ORDINATED APPROACH

Um I think again that's been stated, it's a coordinated approach to extract the best from the system.

HOLISTIC VIEW

Um well quite simply it's looked at as an overall picture on the whole process from product implementation or the um right at the beginning of deciding that you need a new product and then right through to an after after implementation feedback session, you capture all of that.

Um again it's its its really the only way of of uh of having a clear direction with regards to the use of the uh the the SAP-IT system um and um and I guess having a um a a having a focal point that can rule in regards to the most important uh um aspects that we deal with with the system. So in other words most clearly where we spend our dollars, spend our time and um looking uh at what we are required to do from a strategy point of view.

CLARITY IN STRATEGIC DIRECTION

But I think its its its its it can take obviously from what I've already mentioned but also it assists by enabling the end user to understand that there are other priorities within the business um not

specifically as in our case um finance driven. Whereas there is obviously a um a significant workload there in regards to operational requirements.

LEAD TO OTHER INITIATIVES

It would help me because I am the one that gets challenged with developing the IT strategy and so having a benefits realisation program would um allow me to or allow the business to come up initiatives which they thought would only meet the benefits or realisation criteria or commitment and as a result of that making the development of the IT strategy much more efficient because like I said earlier only the cream of the crop would come to the surface and therefore from an IT strategy point of view those are the kind of streams we would need to support in developing our strategy. It would help promote IT in the organisation but it would also define IT you know - what areas of the business we need to focus on and that is what benefits realisation would do. It would identify those streams in the business that would really give me IT intervention or whatever to achieve it's outcome, the right outcome.

HINDSIGHT

Yup, no it it it is isn't, it sort of definitely over to one of the points where you you'd have to you know if you had eagle eye hindsight you might reassess what you did back then if you knew what you knew now about Babcock and Brown and everything else happening and the market changing and the global financial crisis, you you might make a different type of assessment.

3. USER FRIENDLINESS

Quite difficult to use without adequate training

EASE OF USE

Probably the most important um element would be the ease of use or the simplicity of use um the current system we are using is easy to use but you do need to know the structure to follow the process.

FLEXIBLE TO USERS' NEEDS

SAP is such a big beast that you can spend your whole life putting every single bit of piece in it. So I guess we you know went with the parts we were happy with establishing what exactly did

we bring in and making sure that was in place for the business and you know uh getting a sense of ownership from the business helped helped with that as well um but tried to make it bigger than Ben Hur um um some of that was just constrained by the scope of the project being a like-for-like of what we previously had so um but you know we just took the opportunity just to um rectify some of the previous mistakes and try to make be all and end all for everything if possible.

WORKFLOW

Uh I guess one of the areas that we haven't really worked on very well within um WestNet is is the workflow. The application itself. Um and obviously it's one of the major benefits is is workflow um for your end user, because you can um circumnavigate many uh transactions by having an automatic workflow um and that's somewhere we haven't looked at um significantly, other organisations have been part of, have implemented whole lot of workflow around um legal approval, purchase order approval, whole range of different tasks. Um that make it simpler for the the user to to come to grips with the application.

DIFFERENTIAL USE

Yes. In saying that, I don't know how much other areas use so I believe that some areas would be using but for us I think that you could do so much more with it. It's just knowing how to use it.

I believe we can do a lot more with the system than we do currently.

In some areas they're not using it for it's flexibility but because we've got it there and we are using it, so you know overall we would be, we're using most areas that we need to but we're not using them entirely correctly or entirely cost-benefit to get the best efficiencies that we could. And everyday we work on that from a team my finance approach.

DON'T UTILISE FULL CAPACITY

A lot easier, especially if we know everything it can do. I think it just, we don't have anybody down here that's a SAP guru as such, there's a I mean there's a couple in town that know a lot about it but we don't have someone down here. So if we all knew how to use it to it's full um benefit it would be great.

REPORTING CAPACITY

Um I I think the things that would encourage people to use SAP would be the fact uh one of things that a, in doing their jobs they've got to use it um, but uh I think um the reporting capabilities of SAP is subject from my personal view, I find that it is of is of great benefit.

UPGRADING IT KNOWLEDGE AND SYSTEMS

Um the general users knew how more, they were more trained as monkey pressing buttons than actually fully understanding SAP as users so one of the changes we needed to focus on was somehow increase people's level of knowledge as we were implementing SAP so that they understood um the ways we were going to go do it forward um that was particularly um an example would be out at Jandakot they were using 4.0 B system one of the oldest of the versions and um you know the guys have been using it for a decade and and knew exactly how to push every single button but only because they had been taught that way um for us to take into advantage the new functionality or the better functionality out of EC66 obviously we had to re-train them slightly and get them to understand the benefits out of that training. Which which they did, um but that that change management in any ERP system is is crucial. If you get user buy in to, so it was more of just a changing of culture of actually understanding what the new system would do and how you know how it differ to how they had previously did their work.

BETTER FUNCTIONALITY

Yeah yeah yeah. Um, it is important um uh um the aspect of um we can do a job in the most efficient manner.

BETTER UNDERSTANDING OF THE PROCESS

Relatively easy to use system and um they are making improvements where we can going forward.

4. PROBLEM SOLVING

CONSOLIDATED VIEW OF BUSINESS

I guess provide a consistency across the whole enterprise by having one in place, you know class system, dealing with the, we call it the um fundamental data that runs the operation obviously each asset will have slightly different variants of data, but SAP is, was perceived to be the glue that will hold it all together plus facilitate any new assets or opportunities coming in um across

the organisation. Um that is, when we, when we went to EC66 that was the uh the primary principle goal of deciding to go to SAP or continuing with SAP.

Well I see it as a as an opportunity obviously to reduce um IT costs going forward by consolidating many different applications onto the one application suite thing, functionality and scope of SAP is at a point where you can utilise it.

So we can't, you know if we do consolidate our SAP 23 digitally, there's no major asset sales or anything to um to transition um the systems off um to, over to other companies. So I think for us it's more of a consolidation tool, it allows us to reduce IT costs going forward, it also allows us to add functionality to the processes that we do um I always um liken it to sort of like excel. Um Microsoft Excel, a lot of people just use it for for um adding one cell to another but nobody um nobody goes and looks at writing macro tables and so on. So that's the challenge with SAP, the function and scope of the applications are so significant that you probably never have, if you are worried about your tax issues um in the day to day you never actually never ever really expand um your um coverage um from the basic functional coverage to to a more um uh to the areas which you can significantly add value to the business um and so the the product never grows with the business it's just used with a very small mindset um but that takes resources that takes money um and you know in the restrained economy it it's now difficult to sell.

CORE PROCESS

Well SAP in WestNet is really the hub of it, it's become the source of truth across the across the organisation.

Hmm big role, everything everything is recorded in SAP finance side of it, um claiming side of it, maintenance side of it, reactive work, everything everything is recorded in SAP so it's a major major part.

Um I see it as SAP-IT role as uh one that that covers um all of the um main business uh components of um WestNet Infrastructure Group um in a um in a a efficient way. Efficient way.

Um it's a role that significant as it is now already, it's a role that will increase in its significance. Um it is pretty much fundamental to one business already in regards to its utilisation and the expectation is that that will be expanded across the organisation.

SAP- IT CAPACITY

Uh probably the expandability of the um process and um the support that uh we are currently finding with the new process.

PRIOR KNOWLEDGE OF SYSTEM

Well obviously we implemented SAP version 6 so it's uh the plate(?) version for it's benefits, so it wasn't a true new implementation um most of what we did was based on existing SAP that we we used in Alinta Gas so that, it made it easier to make it successful implementation because we had knowledge, we knew what we needed, uh there were very few changes, we didn't change how our chart accounts work or anything like that, or how the businesses are constructed, or what parts of the system they used, we just took three SAP systems and put them into one.

RELIABLE ACCESS TO QUALITY DATA

Future expandability that we can see going into other areas.

The changes and the realisation that the um from where I'm coming from is fairly significant in that we now have individuals within the finance and administration realm are able to extract um very very good data from the system and as I indicated before uh that is something that we will build on in the future.

OPERATIONAL CLARITY

Um up front the uh things to encourage people to use it is a clear um I suppose presentation of the uh operational side of it and that would then show it's ease of use and the benefits of uh that it would realise it is quite a simple tool to use um especially with the reporting functionality of it.

I I tend to feel at the moment it's viewed as a transactional system, as opposed to a mechanism for finding out what you need to find out.

REPORTING CAPACITY

Um I I think the things that would encourage people to use SAP would be the fact uh one of things that a, in doing their jobs they've got to use it um, but uh I think um the reporting capabilities of SAP is subject from my personal view, I find that it is of is of great benefit.

So they've got more visibility around staff and their staff movements. Um, the other sort of um, yeah I mean obviously costs around reporting has improved, and there's a bit more upgrade and efficiency around reporting but I I, it's good that, it's good to see a cost centre you know uh cost centre report by our gen, general major account but the fact you can drill down into the purchasing transaction and and things, I don't think have been really well trained. So, at the moment we haven't got the full um full benefit of of introducing S, SAP from the management accounting point of view.

BETTER FUNCTIONALITY

Yeah yeah yeah. Um, it is important um uh um the aspect of um we can do a job in the most efficient manner.

5. PLANNING

PRE-PLANNING AND INTERACTION

Um the but I think the the analysis we did upfront on how do we go about SAP and our decision to take on a Greenfields' approach and build everything from the ground up um and and build the project team and and the structure and go out and source a supplier that came in with a level of competency in that space um I think those factors with the some engagement with the business we started from ground up was, the reality was um the the yeah implementation was such a success. Um it didn't go, you know not that it went smoothly along the whole way but went, but when you know we did hit the bumps along the way we had everyone uh, everyone's focus and buy-in to get over those bumps that happened in the SAP implementation.

Um in a in a um in a work plan, there's a lot of upfront planning in regards to the implementation of SAP. It was conducted in very much a project orientated process um right down to a significant detail, um it was quite clear upfront what we wanted, which way we were heading,

um and I guess that on the back of the fact that there was already um albeit a um an unsupported version of SAP, SAP was already within the the business itself obviously helped.

USED A CONSULTANT'S SYSTEM

Yeah I think one of the things that we we've done differently with the um with our our implementation of SAP here at WestNet is that we effectively used a a template um which was developed by shared services which is in Melbourne, which is a large utility company and shared had spent about 50 million dollars in developing um that model um and what we did was we used that that model as a foundation to configure the SAP implementation this time around. Uh which made it a lot simpler than developing it from scratch I guess so we used[?] this approach. It it cost um, in the end it ended up costing less because even though we had to pay for the IP um implementation um program, configuration, tasks I guess were were shorter as we didn't spend so much time on this, we spent more time on testing and and making sure the business was happy with the functionality being rolled out. So I think that approach was a lot a lot better um from the WestNet point of view

NO BASELINE MEASURE

Yeah not really, not a true baseline you know so that you can come back to in three years and say this is really how cost based, and kind of identify these are the specific areas where costs have improved because of implementing SAP. You don't tend to go to that level of detail.

ENORMITY OF THE TASK

Oh no, none of that but we did it. But we weren't working, we battled. We had a battle, because it just hadn't been running the way it should, and I ended up, as I said I ended up managing it which wasn't actually my role but uh someone had to do it that actually got it done and we did get it done. It's been appreciated across the board but not from the point of view of our salary increases. But, and it's one of those things I think people do underestimate. Data migration is huge! And we had three systems to to bring data in from...

GETTING THE TIMING RIGHT

Um uh any other barriers um yeah maybe a a there could be a timing issue um of getting a a you know project team together and um if there's a deadline that's gotta be met met that is a barrier.

CUT OFF PERIOD

Um what the main one I can think they went through, was they had to work out a cut off point um rather than try and copy all the old records into the new system. So they picket on a 12 month um um process of keeping that record in the new system and everything else still goes accessibility into the old system as a read only.

PLANNED VERSUS REACTIVE

Because it's all reactive work we need some sort of, what we need to log stresses to see what what's ahead for us because it's reactive it's not planned.

SHORT TERM VIEW

Benefits realisation program is really a strategic or I believe that it is a strategic approach to managing your assets in an organisation and I think that at the moment we are very short term. That's our fundamental issue. We are very short term.

Um I am not so sure that it is the nature of the business so many utilities have a very clear direction um they have obviously had the maturity to think about what their 5 to 10 year plans are um so it is not that I think it's maybe the size of the organisation. If you are a much larger utility with many more customers or more loads on the distribution network. By default you have to have done this sort of stuff. But with the Perth distribution network appears to be not small but it doesn't appears not to be dynamic. It kind of doesn't change that much. So you don't tend to focus on those 10 year views of things. You kind of look more, you tend to roll annual things. So from that point of view the view is very short term so that benefit realisation which occurs over 3 to 5 years is not something that has been contemplated because your view is very short term. So yeah that's what I think is a fundamental barrier.

LONG TERM IMPLEMENTATION INVESTMENT OR VIEW

So for us things like business reorganisation happened out of the blue um assets were sold in the good times assets were purchased so it's very difficult to put in a longer term view/thing but I think like you said benefits realisation is an important aspect of any implementation from an IT perspective it's just that people do not throw enough weight behind it. So you really need a strong mandate from the CEO for this to go forward.

Um probably the the will from um the CEO or the IT team to want that. Um and then producing a list of I I suppose benefits coming out of that program that can help the business for future, future years.

6. BEST PRACTICE AND GLOBAL PRODUCT

GOOD SYSTEM

Um my perception of SAP-IT is a um it's a a it is a good system um and um easy to use um it makes um you um get the knowledge and um I think it um it makes the uh the uh system at um WestNet Infrastructure Group real fast.

UPGRADE OF EXISTING SYSTEM

Um, well we uh I guess we basically did a functional upgrade from the uh earlier version of SAP that was implemented here at WestNet.

UPGRADING IT KNOWLEDGE AND SYSTEMS

Um the general users knew how more, they were more trained as monkey pressing buttons than actually fully understanding SAP as users so one of the changes we needed to focus on was somehow increase people's level of knowledge as we were implementing SAP so that they understood um the ways we were going to go do it forward um that was particularly um an example would be out at Jandakot they were using 4.0 B system one of the oldest of the versions and um you know the guys have been using it for a decade and and knew exactly how to push every single button but only because they had been taught that way um for us to take into advantage the new functionality or the better functionality out of EC66 obviously we had to re-train them slightly and get them to understand the benefits out of that training. Which which they did, um but that that change management in any ERP system is crucial. If you get user buy in to, so it was more of just a changing of culture of actually understanding what the new system would do and how you know how it differ to how they had previously did their work.

KEEP UP WITH TECHNOLOGICAL CHANGE

Um, techno, um technology is huge as in it makes, you can't go, technology is always changing isn't it, so the case for an organisation to use it as the main of mmm, I don't I don't know if the main, it's important, but everyone, you've got to I suppose yeah you've got to move with technology don't you?

RELIABLE ACCESS TO QUALITY DATA

Future expandability that we can see going into other areas.

The changes and the realisation that the um from where I'm coming from is fairly significant in that we now have individuals within the finance and administration realm are able to extract um very very good data from the system and as I indicated before uh that is something that we will build on in the future.

VISIONARY TOOL

Uh wow that's...yeah, that the, the sort of things are obviously what you can extract from the system, the various um interfaces that can be applied to the system, the seemingly um um infinite amount of uh use that you can apply to the system, the the ability to extract um the portal system to be able deal with um quite complex data and um that as indicated has has been roughly some of the benefits that we have we're seeing at the moment and its its I guess its a question of, quite often it's a question of uh again time and money as to how far we want to take this as indicated where the expectation within our business is to extract as much as possible from the investment that we we put into SAP.

7. CULTURE/CHANGE

CULTURAL CONNECTION/ CHANGE

Yeah I know. I don't know if there would be if it's it's going to benefit the company and everybody in it and put a new culture in I don't think there should be any barriers. Again it might be change, people might think why, you are always going to get people that ask why, but I don't think that there should be any barriers.

RESISTANCE TO CHANGE

People don't like change. People, they're scared. So they're probably the main and training if you've got if you have the right training people will be happy to use it.

DRIVER OF CULTURAL CHANGE

Um the chan, oh the changes were really that the company was changing altogether at the same time um and we were you know but some of the areas that we needed to change within WestNet

Infrastructure Group was, while SAP was quite heavily used before the level of knowledge of the business wasn't that high.

Um, so that could that, I think that's what made it uh much easier an implementation than if you were to do it from scratch and if you had experiences... so maybe um your column moves or something like that it would be a bit more of a change management um responsibility to get the information uh successfully but.

NOT ALWAYS APPARENT

Um a lot of the changes um weren't apparent to us at the front end, I think most of it was done with um IT, although we did have interaction with the the SAP Team who were looking at our operation and um were taking back on board what we did to implement into the product itself.

PROCESS CHANGE

Yeah well um some of the changes I think, well basically I believe that uh with our latest implementation um it was um it was based on our our our existing business processes. So it was to suit our bus current business processes.

Yeah process change, um we we used the um a like a template system um.

Yup it was brought in by the consultants yeah from PowerCorp yeah uh which I think one of the benefits of that would be to have um you know consistent uh processes um.

Oh sorry we had 4.6. We had 3. We had two instances before. 3.1H instance and a 4.6E instance. So we kind of brought them all up into one ECC6.0 platform. Um the premise of the transition project was to do a like for like transformation or translation, which meant the functionality didn't change.

That was a major change that has been made. Other than that it was like-for-like so the main thing was the actual hardware and software coming in, and having our own SAP team. So yeah that was the the most, the biggest change of any that successful phased in, just launched off, and realising you know obviously going back to that point about sticking to what you needed to do um yeah we we had a wishlist in the end, we said okay we'll make notes of people's could we

do this and could we do that, so we started the wish list up and that's been, being worked on since we went live.

CORPORATE CULTURE

Right, okay. Um my opinion my opinion. Um It could be a timing issue it could be a cost issue it also, it might be less so, but to me it could be because um um I guess from a owner's perspective there are owner's about um in the corporate world and um, so it's not just WestNet WNG's um decision but WNG's owners call, so um I think that could be a barrier.

RELUCTANCE TO CHANGE

Yeah I know. I don't know if there would be if it's it's going to benefit the company and everybody in it and put a new culture in I don't think there should be any barriers. Again it might be change, people might think why, you are always going to get people that ask why, but I don't think that there should be any barriers.

CULTURE CHANGE

Ooh, that, if you can change that culture within a company and you don't want to be the one standing over their shoulder, you feel like you are being a mother half the time and spoon feeding people, but if it was the culture it would make your job a lot easier.

CATALYST FOR CULTURAL CHANGE/ CHANGE MANAGEMENT

Well I, to be honest I think, I think these days um, I would challenge to say other than maybe some real fundamental IT infrastructure type projects, the majority of application projects in IT are change projects and if if you're a project manager that doesn't understand that you're going to fail more times than you'll succeed, in the IT space

Um, you cannot be someone who doesn't understand how a business ticks and expect to be able to project manage a an application project for instance you know most application projects have a targeted business requirement and um most times you will introduce some element of change or or um you know um in into the organisation. There's, there's very few times where you just plug something in and everyone gets up the next day and it all looks the same and away you go. Um, SAP is a is you know is an example of that, but nearly everything that I've ever dealt with um uh on on technology front you need to have an element of change management in in your, in

your project and engagement of business and users because they will be impacted to some extent. Might be minimal might be massive but you know um so I think I think there are most cases I would say at the moment is, you know, when you introduce technology in an organisation there is an element of change and you know, a catalyst for change within that type of project.

Um it's a good question. Um, I don't know whether to use it as a main catalyst for change, um I I I guess going on what what's happened for us um the catalyse the catalyst for change was more I guess the um the situation the corporate situation um and uh the need for uh separation and having separate um uh systems. Um I think um the main catalyst of change is looking at the overall um business processes and procedures um and using um using technology to um you know compliment that or to help drive that.

What we are doing is introducing new technology and therefore introducing change to the business but there is change resistance. There are people out there who are not PC literate. So from that point of view there is not a lot of coalface technology change until we find a good facilitator or catalyst of change then cultural change becomes a bit more important so you know sometimes you see situations where simple business processes improvements rather than going straight to a technology solution and it has a much more positive outcome from I think we need to start tend to look at the underlying processes first to see if they are broken or whatever then using technology as the bit at the end where you know we can do as much as we can from the process point of view. Therefore it is a technological outcome which is then meant to identify the problems which need to be considered.

TECHNOLOGY AS AN ENABLER

I mean I'm sure I'm sure that there is other systems out there, I mean there's thousands of companies out there that probably don't have SAP, but because I think it's such a good system and I'm happy. I think we've done better with it.

8. COMMUNICATION

NOT CLEARLY UNDERSTOOD BR

Benefits realisation is is a difficult one um you know traditionally companies don't really do that very well. Nobody really tends to look two-three years down the track to see whether or not a project has actually delivered on on it's promised, and uh uh kind of the same sort of um

approach is is I guess what we are seeing here is more sort of a, nobody really wants to um commit to have benefit realisation whether it be FTEs or or or seeing the savings are. So there's not really um uh I don't think there will be a a future where we will be able to see the benefits of that that, being able to document, we haven't captured a baseline or anything so we don't really know um, you know how much uh uh implementing SAP has improved or reduced the cost base it may have obviously increased it in the short term but we don't have that initial baseline and that's the thing that you needed to do when you want have, if you want to look at benefits realisation you establish that baseline upfront well before you do the project, so you know you've got something to compare to three years down the track after it's been bedded down in in a steady state.

PREVIEW THE SOFTWARE

So, what do what, they told people like to manage the old system so what can they do? One of the things we found is now sustained people to, actually have an introduction with SAP, so this is how it looks, how it feels, what you can do, and then we go into the cost-centre manager trainings and right these are the issues/facility to manage your cost-centre, what transactions mean, how you look at the figures and your budgets and your actions and monitoring and all that good stuff that's in SAP and really understanding from the finance point of view that the cost-centre manager does all that, now we're three quarters of the way through that so yeah, we haven't quite reaped the benefits yet but people are starting to ask questions about their costs and look at that detail so I think it will become more, more and more prominent but but that certain areas of the business that weren't using it will use it.

REPORTING CAPACITY

Um I I think the things that would encourage people to use SAP would be the fact uh one of things that a, in doing their jobs they've got to use it um, but uh I think um the reporting capabilities of SAP is subject from my personal view, I find that it is of is of great benefit.

So they've got more visibility around staff and their staff movements. Um, the other sort of um, yeah I mean obviously costs around reporting has improved, and there's a bit more grade and around reporting but I I, it's good that, it's good to see a cost centre you know uh cost centre report by our gen, general major account but the fact you can drill down into the purchasing transaction and and things, I don't think have been really well trained. So, at the moment we

haven't got the full um full benefit of of introducing S, SAP from the management accounting point of view.

NOT ALWAYS APPARENT

Um a lot of the changes um weren't apparent to us at the front end, I think most of it was done with um IT, although we did have interaction with the the SAP Team who were looking at our operation and um were taking back on board what we did to implement into the product itself.

NO FORMAL OR WELL ARTICULATED BR SYSTEM

Uh not, it does within the structure of the uh the projects uh tracks projects um but are generally based on a Princeton methodology which always has has a sort of 360 review of the you know at the end of the project as a project limitation review and then further down the track is is a benefits realisation. Um so but across across the whole board as a you know is there a continual review at a higher management level of have we got the benefits out of all these areas, no not that I'm aware of.

I think there should be but I guess we are actually how can I put it we are in this stage of maturity from a business point of view where we are very tactical and our day to day responses are purely tactical so that we have no strategic thinking or direction. It is more about keeping our head above water and all we have done is prioritise things from a practical point of view and said maybe benefits realisation is something that if we did have an extensive capital program of work we would have to consider but at this stage the project is a tactical type of project and by fixing our major project is to turn on functionality and to cause organisational change and all this sort of stuff. Have not really been or worked through this.

Graham – mmm. OK.

NEED A MANDATE

Ah , Ah you need a bit of a mandate from maybe the CFO (Chief Financial Officer) or somebody to sort of do that because a lot of people find it difficult from a jurisdiction point of view to go to a General Manager and say hey you have not really realised any benefits. It really has got to be the CFO who has to go and say you have not really achieved this so next time round don't expect me to sign off on something or whatever. So um yeah it needs to be that way.

DEVELOPING AN UNDERSTANDING OF WHY NEEDED

Um, usually getting everyone's understanding that why you need to do it [laughs] is usually the first step um

This as I said this one was a little bit interesting in that even if there has been no benefits in realisation it was a you have to do it project you you the company sold and you've got to split up so um it was our, you know our focus was not so much on, it was getting the company separated but doing it in such a manner that we got the best bang for our bucks that we had to go and spend um, and you know making sure that the company got those benefits out of, you know if we're going to go into SAP then we do it well and and put something in place that's gonna um set WestNet Infrastructure Group up for the future.

EXPECTATIONS

I definitely think it is because like all things you go down the road of purchasing or implementing a program, you want to make sure that uh a) you're getting the best for, best for your dollar and b) that er it is being used as you want it to be used.

COMMUNICATION

Um, I think right upfront is is quite a clear communication strategy, um communication from the point of view of um identifying appropriate individuals and and teams and growing it from the bottom up to um to a coordinated group or um um um individuals that take uh that take leadership in that programme.

9. RELIABILITY OF INFORMATION

GOOD SYSTEM

Um my perception of SAP-IT is a um it's a a it is a good system um and um easy to use um it makes um you um get the knowledge and um I think it um it makes the uh the uh system at um WestNet Infrastructure Group real fast.

APPROPRIATENESS

Um appropriateness is probably the biggest thing with any SAP-IT system.

WORKFLOW

Uh I guess one of the areas that we haven't really worked on very well within um WestNet is is the workflow. The application itself. Um and obviously it's one of the major benefits is is workflow um for your end user, because you can um circumnavigate many uh transactions by having an automatic workflow um and that's somewhere we haven't looked at um significantly, other organisations have been part of, have implemented whole lot of workflow around um legal approval, purchase order approval, whole range of different tasks. Um that make it simpler for the the user to to come to grips with the application.

CURRENT AND FUTURE USE

Uh at the moment it's a fairly established uh process um but I can see in the future it's use expanding to other areas as well and other applications.

GETTING GOOD SUPPORT SYSTEM IN PLACE

Uh so what what happens is you do have those drivers to simplify um your your application landscape and SAP gives you the opportunity of doing that because it covers such a functional scope.

USED A CONSULTANT'S SYSTEM

Yeah I think one of the things that we we've done differently with the um with our our implementation of SAP here at WestNet is that we effectively used a a template um which was developed by shared services which is in Melbourne, which is a large utility company and shared had spent about 50 million dollars in developing um that model um and what we did was we used that that model as a foundation to configure the SAP implementation this time around. Uh which made it a lot simpler than developing it from scratch I guess so we used this approach. It it cost um, in the end it ended up costing less because even though we had to pay for the IT um implementation um program, configuration, tasks I guess were were shorter as we didn't spend so much time on this, we spent more time on testing and and making sure the business was happy with the functionality being rolled out. So I think that approach was a lot a lot better um from the WestNet point of view.

RELIABLE ACCESS TO QUALITY DATA

Future expandibility that we can see going into other areas.

The changes and the realisation that the um from where I'm coming from is fairly significant in that we now have individuals within the finance and administration realm are able to extract um very very good data from the system and as I indicated before uh that is something that we will build on in the future.

MULTIPLE IT ASSETS

SAP has got a lot of um bolt-ins like you know they've built business objects and bought a whole other raft of different plug-ins to it and other third parties have built similar plug-ins so um the breadth that you can get across an organisation in terms of just having everything in SAP um you know is obviously as you get bigger in size is appealing to a company cause you can you can leverage off one one asset rather than have multiple you know, multiple IT assets out there trying to cover the same space.

BETTER FUNCTIONALITY

Yeah yeah yeah. Um, it is important um uh um the aspect of um we can do a job in the most efficient manner.

BETTER UNDERSTANDING OF THE PROCESS

Relatively easy to use system and um they are making improvements where we can going forward.

10. TRAINING

TRAINING PRIOR TO USE

Um, training's a big issue and getting people's input before they implement it. So that is probably the most important part.

Um obviously I think one of the more important um elements that we are grappling with at the moment is is on the um the the human interface with it, the training of it, and extracting as much as we possibly can get from that from our investment in SAP.

NEED FOR TRAINING- IT KNOWLEDGE PRIOR TO IMPLEMENTATION

Um, yeah if you, there's no point bringing it in and then having training. You need some training before it's implemented as well because you can't train everybody at once.

Um well the SAP I guess SAP looks at a a um a distributive uh sort of user um approach where where users are self sufficient um and and all and all everyone can be considered a SAP user especially if you use something like an employee self service, so the first barrier to entry for me would be, barrier to implementing it adequately in this organisations would be um um PC literacy just just people can't even turn on a computer let alone migrate through windows let alone go into SAP so uh the the challenge to bring people up to a point where they can actually function in SAP is quite significant. Um and the thing, especially with our, even with our accounting group here, um who use the key customer um key user of SAP struggles with SAP because they haven't had the background training, they haven't had um they don't understand the logic behind you know the transactions and within the processes within SAP.

So you do, they have struggled um with it and then continue to struggle um with it. So that'll be one of the biggest things kind of a high level of PC literacy and just exposure to these sorts of systems which not many of our people at the cold face have, you know they they struggle with mobile phones so you can expect they're going to struggle with anything um with much more a complicated interface, user interface, such as SAP.

Um probably the main barrier, unless an organisation has exposure to SAP, um it could be a um a frightening um operation simply because it's um it has a lot of functionality in it. So unless the people um have experience at that and/or it's not put to them properly then it might frighten off, frighten them away with it's complexity.

Uh having, before coming to, or being exposed to SAP, um being involved in a midrange system uh where you could essentially uh implement or or make uh fairly significant changes within a matter of days to a an environment where those sort of changes takes weeks is quite a quite a quite different. Um It can be frustrating um it can be frustrating from the point of view of the time taken and the um the amount of um cost and and resources required to make what I consider to be fairly simple and straightforward changes.

Sorry. There were a few changes but they were very minor in comparison. Therefore the the change management from a people perspective was fairly limited, there were very few areas of of major change, uh so there was very limited training done, um but there was a lot of communication about the system will do work what data will be transferred across, what

month(?) what migrated what we can what we can do and what we can't do, so but from a finance perspective which was obviously my point of view, we we were very happy that we got uh ?arrived in November um come December after the end we had a success, successful finance rpm, no major issues, and from a go live situation that was absolutely superb, um so it was due to the amount of effort that was put in by the teams uh across the boards so the change management, the the teams, the um as as I said limited training so SAP wasn't actually required but actually knowing what we needed to do in, we spent a fair bit of time going through blueprints because we had a template to work from.

Err the first one would be what data you want to implement, so what history you need can be a huge barrier. The trust in um expertise, where do you get the right expertise to guide you through the process, it's not generally done in house. Um nine times out of ten, from my experience they'll be results consultants uh that's coming in to put SAP in so unless, you know the software, it creates a different scenario for most people probably. Um, knowledge in the business of what you actually want them thinking about when handling change and scope would have to be some of the biggest things you need to worry about. Um significant issue.

UPGRADING IT KNOWLEDGE AND SYSTEMS

Um the general users knew how more, they were more trained as monkey pressing buttons than actually fully understanding SAP as users so one of the changes we needed to focus on was somehow increase people's level of knowledge as we were implementing SAP so that they understood um the ways we were going to go do it forward um that was particularly um an example would be out at Jandakot they were using 4.0 b system one of the oldest of the versions and um you know the guys have been using it for a decade and and knew exactly how to push every single button but only because they had been taught that way um for us to take into advantage the new functionality or the better functionality out of EC66 obviously we had to re-train them slightly and get them to understand the benefits out of that training. Which which they did, um but that that change management in any ERP system is is crucial. If you get user buy in to, so it was more of just a changing of culture of actually understanding what the new system would do and how you know how it differ to how they had previously did their work.

Um it's purely education now to get them to a level where they are actually owning more of their information than we are. So, um so the , I suppose the benefits are not to changeable(?) at the moment with apart from we've replaced three systems and set up one.

11. REALISING BENEFITS

BENEFICIAL

Yeah, um well SAP-IT system has um been very successfully implemented in WNG um and um going down the path of the Greenfields' implementation has has added, added a lot a lot of benefits to the business so far. So yeah so so across the business it has been perceived as a success what what we've put in place.

I think it could be for people that really really know what what it can do I think it's very beneficial.

GOOD SYSTEM

Um my perception of SAP-IT is a um it's a a it is a good system um and um easy to use um it makes um you um get the knowledge and um I think it um it makes the uh the uh system at um WestNet Infrastructure Group real fast.

MEETING BUSINESS NEEDS

They need, before they, a lot of systems have been brought in without getting input from the people that use it in certain areas. So it was coming down here and getting feedback from people to see what they wanted rather than just bringing it in and then no one knowing how to use it or not using it correctly. So it's getting that feedback before.

Yup. So yeah, okay yeah yeah um the factors that lead to the suc successful uh implementation was the fact that uh three um corporate bodies being um BDR, BDP, and SPR um had to uh had the need to uh separate and um this this lead to the fact that um our systems had to be separate systems and um so that um we had to get um separate SAP in effect for the three um bodies.

Uh well if we didn't have all-in-one system uh we'd have to have more than one system so there'd be extra costs and there'd be the fact of trying to build enhancements so that you could, one system can talk to another.

NO BASELINE MEASURE

Yeah not really, not a true baseline you know so that you can come back to in three years and say this is really how cost based, and kind of identify these are the specific areas where costs have improved because of implementing SAP. You don't tend to go to that level of detail.

NOT CLEARLY UNDERSTOOD BR

Benefits realisation is a difficult one um you know traditionally companies don't really do that very well. Nobody really tends to look two-three years down the track to see whether or not a project has actually delivered on on it's promised, and uh uh kind of the same sort of um approach is is I guess what we are seeing here is more sort of a, nobody really wants to um commit to have benefit realisation whether it be FTEs or or or seeing the savings are. So there's not really um uh I don't think there will be a a future where we will be able to see the benefits of that that, being able to document, we haven't captured a baseline or anything so we don't really know um, you know how much uh uh implementing SAP has improved or reduced the cost base it may have obviously increased it in the short term but we don't have that initial baseline and that's the thing that you needed to do when you want have, if you want to look at benefits realisation you establish that baseline upfront well before you do the project, so you know you've got something to compare to three years down the track after it's been bedded down in in a steady state.

COSTS/RESOURCING

Um I think one of the barriers um to be putting SAP in place would be, um and I say that so there would be cost but um cost is a a barrier to putting any new system in, or enhancing or updating a um system.

I definitely think it is because like all things you go down the road of purchasing or implementing a program, you want to make sure that uh a) you're getting the best for, best for your dollar and b) that er it is being used as you want it to be used.

Um obviously cost is one. One is, the back of that is resources.

The significant ones are of knowing what you want up front um and sticking to that. There has to be, yeah, otherwise your cost just blows out. And I suppose uh from my point of view and

probably my my area point of view takes the, is the biggest thing cause not only are you implementing a new system with functionality but okay we all knew before it could change uh we also had to test those in migration as well.

Yeah which was unfortunate because, you know I'll give you an example, the data migration, I had to take ownership of the complete data migration in the end, because it wasn't happening properly, we didn't have enough resources. I kept saying to the project manager it isn't happening, we're not getting anywhere, and yeah from day one I'd always highlighted it as being a big risk and that it would come back and bite us if we weren't very clever when we did, from uh August, September, October, my team, I'm in charge of the finance team, the majority of the finance team in terms of the project FICO plus some, we had to recruit from 4 consultants, we worked, in three months we did six months work.

We have an issue at the moment people don't believe that we do have any benefits from running the system, they think it's just an expensive lump. But they're, what's happened is they've said the IT transition cost 26 million and they all believe that's what SAP costs. SAP wasn't even a third of that so, how can you s, how can you say that that was a big cost when actually most of the cost was on servers and apps, and other things that you know networks and phone systems and everything else that was needed to set the business up on its own infrastructure. And uh people seem to think that SAP was the big cost, but it wasn't. And I think maybe we should have had someone WORKING in that situation where we, rather try sell the damn thing now.

DON'T UTILISE FULL CAPACITY

A lot easier, especially if we know everything it can do. I think it just, we don't have anybody down here that's a SAP guru as such, there's a I mean there's a couple in town that know a lot about it but we don't have someone down here. So if we all knew how to use it to it's full um benefit it would be great.

LIMITED REALISATION

It is, but I don't think people realise, and I know you said realise, don't think people realise what that benefit has really been to them, um because it's only been a matter of months, you know 8 months since EC66 went live, so I I think there are huge benefits to be had which is why I said that they realised it but they're using 50-75% of the system and we need to get that other 25% which would really make business, would make everything in the business easier for everybody,

um rather than, and that would be significant benefit. At the moment, they'd just see it as like-for-like. You know, if I'm doing that good before then what's the benefit out of taking this money, SAP is useless, and it doesn't really give you any benefit apart from the process and business end with no ROI on the money spent.

53% I'd say. More so than not. Yeah I don't think, and I I, don't think if you spoke to someone in the business, my views would be significant, you know I don't I don't think they'd be allowed to say that they didn't see any benefit apart from the fact that it's EC66, they wouldn't even notice anything, they'd think it's the same as before!

Nup, not that I'm aware of.

NOT AT THE BR END

I don't think we have got to that point yet. I don't think that we have run the benefits out of SAP itself. At the moment it kind of seems that it is the back end system collecting data but is not seen as a tool to facilitate decision making.

STEPS TOWARDS BR

I think that is the next step. I think that the charges of the business need to embrace the applications and start looking at some of these functionalities and start looking outside of the standard cluster of these reporting items looking at some other ways we can use the system to predict asset – asset future asset values and things like this to get more out of it and using it in conjunction with other systems such as business intelligence and things like business objects and other tools which we can combine data from SAP with such as equipment history with geographical information loads within our GIA system so that it is kind of where benefits realisation will start to come once we start taking that approach. From SAP itself I think we still need to explore it's functionality and we need to turn on functionality but resistance to change is a big issue. Just can't keep on introducing this new functionality if the business does not really want it or are comfortable doing it the way they have always done it which could be an issue in it's own right. Yeah that is a challenge in it's own right.

NO FORMAL OR WELL ARTICULATED BR SYSTEM

Uh not, it does within the structure of the uh the ???projects uh tracks projects um but are generally based on a Princeton methodology which always has has a sort of 360 review of the

you know at the end of the project as a project limitation review and then further down the track is a benefits realisation. Um so but across across the whole board as a you know is there a continual review at a higher management level of have we got the benefits out of all these areas, no not that I'm aware of.

I think there should be but I guess we are actually how can I put it we are in this stage of maturity from a business point of view where we are very tactical and our day to day responses are purely tactical so that we have no strategic thinking or direction. It is more about keeping our head above water and all we have done is prioritise things from a practical point of view and said maybe benefits realisation is something that if we did have an extensive capital program of work we would have to consider but at this stage the project is a tactical type of project and by fixing our major project is to turn on functionality and to cause organisational change and all this sort of stuff. Have not really been or worked through this.

Graham – mmm. OK.

NO KNOWLEDGE OF BR PROGRAM

I don't know!

Compared With Other Companies

The benefits realisation that stuff I have been involved in, in other companies people were coming back 2 or 3 years later reviewing the business cases, reviewing the benefits and then going back to businesses and obviously having this baseline to be able to go back and say OK well you know your costs have not really reduced in this area you have actually employed more people um that's where you realise those benefits and then recording that. So where are we now. Oh yeah in other organisations I have been in they have IT audit type functions and obviously they explain it to you. Ah , Ah you need a bit of a mandate from maybe the CFO(Chief Financial Officer) or somebody to sort of do that because a lot of people find it difficult from a jurisdiction point of view to go to a General Manager and say hey you have not really realised any benefits. It really has got to be the CFO who has to go and say you have not really achieved this so next time round don't expect me to sign off on something or whatever. So um yeah it needs to be that way.

POST IMPLEMENTATION REVIEW

There was post implementation review but it has never been finalised and it's never been published. It has been collected, but isn't, there's no, I don't think any, or two people have seen it I believe.

Um I'm sure if you spoke, speak to Jim Sunnucks, I'm sure he has custodianship of it, it's just never been published, but it was done, soon after we went live.

BUILT AROUND BUSINESS CASE

From from a management perspective it's, you know, you have basically brought a whole bunch of business cases and you know, um and you know, opportunities that you need to assess as you are going along and obviously a business case of of based always around some type of perceived pay back or benefit to the organisation um so uh the reality is if you don't have uh some sort of benefits realisation project to track, program to track that you'll never know whether or not what you actually paid for is what you you've received at the end of the day or that that there's you know, the the metrics within the business case has uh has have, whether they've come to fruition or not.

It is a funding issue and also a cost issue because I think if you think about it everybody is looking for every company is looking for efficiencies and cost reduction . So why blindly go into a strategic direction that says it is going to increase your cost base. It does not seem to gel. I mean that is the accounting coming out me. But if you are an IT technologist then you might say well we need to move into SAP to increase our functionality, functional capability and so on. Yet maybe over time you have cause to look at it um from that point of view but I think that at the moment we have to actually rush a few things without really letting the lads stabilise I guess.

BUSINESS CONFIDENCE IN SAP

Um the benefits there would be a) a um a realisation that yes the product was worth buying and b) that the um meat and whats that we were seeing before the product was bought are actually being met.

FUTURE IMPROVEMENTS

Um, the benefits of such a program would be to um to I guess justify the decision to to um to go with SAP um it can be used also for future um projects um and it can be used for um for improvements um improvements going forward.

QUALITY OF INVESTMENT DECISIONS

We need to allocate the right amount of cash flow to the right project. So I think that benefits realisation will have to play a bigger part in the future because you will need to justify these projects a lot more succinctly than we did before and as the regulatory regime the access arrangement and the likeness to one of their works it puts pressure on you as well to become more accurate around those benefits um so I guess the benefits realisation is starting to become much more important when you have got a scarce cash flow to forward that previously the linkage to funding was not that important . But I think the tragedy is that the businesses do not understand that.

RETURN ON INVESTMENT

Well I would say it's communicating exactly what you've done and reliably what you've spent and why, why yeah your return on investment. I don't think people realise that, they really don't, I mean they probably think from a management perspective it would be really useful if they did realise exactly what had, real, what really happened. I think, you know examine which benefit type of day-to-day. Yeah yeah definitely it would be a huge benefit, I think it would stop a lot of the questions throughout the project.

CONFIDENCE IN THE PRODUCT

Benefits are important because they give you confidence in the product you've got um it also lets you see that your processes in purchasing and and um viewing products is robust.

EXPENDITURE JUSTIFICATION

Well if you don't have benefits you wouldn't spend the money, the reality is you're not going to spend it if you're not going to get it so.

OPERATIONAL BENEFITS

Well everybody would be doing as a as a whole wouldn't they, rather than just the one person.

Um, we, yeah, it's easier in the future to sell things if you realise the benefits uh of what you're doing, if you don't realise but you have some benefits it's very difficult and that's where we're at at the moment. I believe that it would make a huge difference if everyone in this business knew what exactly that system does that we use, everyday, um it's not just a finance system, it's works and asset management system, it manages plants, it manages jobs, it manages projects, it manages payroll, it manages finances and I think that would then decide and don't think they realise it. So, the benefits are that important because we need to obviously keep the system going. What we going to do, are we going to turn it off? You can't turn it off.

BUSINESS CASE CHECKS AND BALANCES

Well I mean as I said one is you're going to basically track to see if you know once you've signed something off if you're going to get a a 360 review back to tell you that, whether you have achieved it but also you tend to find it will have a flow on effect to even when business cases are prepared because if people know that you actually will come back to assess to see whether things were achieved, you'll less, you're more likely to be a bit more robust and realistic in your uh upfront estimates as well and also you'll give your mechanisms a check against business cases that have come in, uh business cases will come in saying you know we can go and do this for 100 grand, but we know the last project cost us 600 grand then you're going to start a, raising questions and saying well why are you suddenly one sixth cheaper than the uh the last time we tried to do this you know, so you you will start to get that um pressures coming from multiple directions.

So I anyway I think that is where the energy of benefits realisation program puts the onus back on business to justify each project and to reduce the waste frequency if things don't tend to work out.

BENEFITS FOR INVESTMENT

I'm not really an end user so am I really going to speculate on this. Um look look I mean again it comes down to um as end users you provide requirements into these various activities um and and you know on the basis that again you are hoping that this is putting things in place that are going to make your work life more efficient and easier so, um if you have programs that don't project that don't have any type of monitoring above benefits realisation then you know there there could be a lot of money spent maybe even keeping you where you are or in some cases even taking you a few steps backwards so um you know from an end point, from an end users

point of view you're going to want to know that uh if you've invested time and or energy or or there's resources being invested in these programs that there is going to something coming out at the other end that um um that's going to help you out.

Um for me from an IT perspective I guess the benefits realisation Program would mean that only those projects with a true benefit would get up would make it through the authorisation process um and we would have less um less of an overhead of the projects to complete and deliver on time and I think that it is sort of like a natural selection process you end up getting only the cream that floats to the top so as to speak. um and you end up with a program of work that is much more focussed much more concentrated and strategically aligned.

DELIVERY OF BENEFITS

Er I think those as I've covered off in the atmosphere, it's more around as I said make sure that if there is any money invested its actually invested towards the business goal um you know not getting to the case where u using IT as the uh, industry uh little um hiccup that seems to be brought up all the time. You know it's it's um IT's there to facilitate business not business to facilitate IT you know make sure if you do something like a SAP-IT you're going to get a business benefit out of it not just a system benefit, so.

Uh commercially it is important um because you are taking people on that journey with you.

GREATER BUSINESS UNDERSTANDING

Aw it's very important. Something something that we use continuously, which we get all our information out of, we put all our information into it, so understanding what it can do is very important.

MONEY WELL SPENT

Benefits are important um because um without benefits um you know what is the point of spending um sums of money.

Ah definitely benefits are important. Like I said um you know that there are scarce resources from a cash flow point of view you have got scarce resources from a people who can implement

a project. So you have got to pick those projects that you give you the most benefit um to meet those criteria so yeah.

RECORDING OF IMPROVEMENTS/MISTAKES

Um well we we know what we wanted to achieve um that would have been uh set up in the documents. This realisation program would um, would uh record and um show actually um what the um what benefits were realised um and if there were any um what the negatives were um well it would document um document um you know the improvements, the benefits to the to the company.

Um to me it would be looking at the robustness of the operation and then after the whole um I suppose um going through the whole process you would see that yes we did make mistakes or no we didn't make mistakes, and uh use those as criteria for the next program.

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