2009

A Study into the Use of Business Process Reengineering in Re-designing Procurement Processes within the Southern Health Board

Treasa Dempsey

School of Business Studies, Cork Institute of Technology, Cork, Ireland.

Follow this and additional works at: https://sword.cit.ie/allthe

Part of the Business Administration, Management, and Operations Commons, Management Information Systems Commons, and the Operations and Supply Chain Management Commons

Recommended Citation


This Master Thesis is brought to you for free and open access by the Dissertations and Theses at SWORD - South West Open Research Deposit. It has been accepted for inclusion in Theses by an authorized administrator of SWORD - South West Open Research Deposit. For more information, please contact sword@cit.ie.
A Study into the Use of Business Process Reengineering in Re-designing Procurement Processes within the Southern Health Board

TREASA DEMPSEY
SCHOOL OF BUSINESS STUDIES
CORK INSTITUTE OF TECHNOLOGY

A Study into the Use of
Business Process Reengineering in Re-designing
Procurement Processes
within the Southern Health Board

By
Treasa Dempsey B.Comm

A thesis in fulfilment of the Degree of Masters of Business

Research Supervisor:
Dr Thomas J Rigney FCCA., MEd., MBS, MA, HdipEdAdminNUI

Summer 2009
ACKNOWLEDGEMENTS

I wish to gratefully acknowledge all those who assisted me in any way during the course of this research, especially:

- Dr Tom Rigney, my research supervisor, for his advice, direction, and encouragement; and in particular for his continual generosity with his time

- Des Roche (RIP), for his inspiration and support in getting me started on this research path

- The staff of CIT, especially Gerard O Donovan, for his guidance and help throughout the process

- The materials management function of the HSE, for their permission to conduct this research, and especially those who gave so generously of their time for interviews

- My babies, Daniel, Maeve, and James, for their patience while mom was working

- Finally, my husband, for his patience, love, and understanding. Thanks Don
**ACRONYMS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPR</td>
<td>Business Process Reengineering</td>
</tr>
<tr>
<td>BGH</td>
<td>Bantry General Hospital</td>
</tr>
<tr>
<td>BP</td>
<td>Business Process</td>
</tr>
<tr>
<td>CUH</td>
<td>Cork University Hospital</td>
</tr>
<tr>
<td>ERP</td>
<td>Enterprise Resource Planning</td>
</tr>
<tr>
<td>FISP</td>
<td>Financial Information Systems Project</td>
</tr>
<tr>
<td>GRN</td>
<td>Goods Receipt Note</td>
</tr>
<tr>
<td>HSE</td>
<td>Health Service Executive</td>
</tr>
<tr>
<td>HSE - SA</td>
<td>Health Service Executive – Southern Area</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>IS</td>
<td>Information Systems</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>KGH</td>
<td>Kerry General Hospital (Formerly known as Tralee General Hospital)</td>
</tr>
<tr>
<td>KPI</td>
<td>Key Performance Indicators</td>
</tr>
<tr>
<td>MM</td>
<td>Materials Management</td>
</tr>
<tr>
<td>PO</td>
<td>Purchase Order</td>
</tr>
<tr>
<td>RMM</td>
<td>Regional Materials Manager</td>
</tr>
<tr>
<td>SCM</td>
<td>Supply Chain Management</td>
</tr>
<tr>
<td>SHB</td>
<td>Southern Health Board</td>
</tr>
<tr>
<td>SLA</td>
<td>Service Level Agreements</td>
</tr>
<tr>
<td>SOP</td>
<td>Standard Operating Procedure</td>
</tr>
<tr>
<td>TGH</td>
<td>Tralee General Hospital</td>
</tr>
<tr>
<td>WTE</td>
<td>Whole Time Equivalents</td>
</tr>
</tbody>
</table>
ABSTRACT

Prior to undertaking the implementation of an integrated finance and procurement information system, the Southern Health Board (now known as the Health Service Executive – Southern Area) undertook a Business Process Reengineering project to redesign, standardise, streamline, and document their procurement processes.

This study examines how useful Business Process Reengineering can be in a public sector environment, using the project undertaken in the Southern Health Board, as a case study.

The literature on BPR, in conjunction with the material from the BPR project, and interviews from relevant project team members, is examined.

The case study demonstrates that it may be argued that 'true' BPR was not possible in the procurement elements of the Irish public health system. However, it demonstrates that the BPR process is an important and useful exercise to change incrementally, and improve, the processes of the organisation. These changes are identified, analysed, and their impact on the procurement process are demonstrated.
1 INTRODUCTION

1.1 GOALS & OBJECTIVES

1.2 STAKEHOLDERS

1.3 THE RESEARCH STRUCTURE

2 LITERATURE REVIEW

2.1 INTRODUCTION

2.2 BUSINESS PROCESS

2.3 PROCESS MAPPING

2.4 BUSINESS PROCESS REENGINEERING

2.5 BUSINESS PROCESS REENGINEERING AND THE PUBLIC SECTOR

2.6 BUSINESS PROCESS REENGINEERING AND INFORMATION TECHNOLOGY

2.7 BUSINESS PROCESS REENGINEERING SUCCESSES AND FAILURES

2.8 BUSINESS PROCESS REENGINEERING AND PEOPLE

2.9 CONCLUSION

3 METHODOLOGY

3.1 INTRODUCTION

3.2 TYPES OF RESEARCH

3.2.1 Primary and Secondary Research

3.2.2 Qualitative and Quantitative Research Methods

3.3 SELECTION OF CASE STUDY APPROACH

3.3.1 Single versus Multiple Case Study Method

3.3.2 The Holistic Case versus Embedded Case

3.3.3 Limitations of Case Study Approach

3.4 ACTION RESEARCH

3.5 SUPPLEMENTARY TECHNIQUES USED IN THIS STUDY

3.5.1 Triangulation

3.5.2 The Research Interviews

3.6 RESOURCES AVAILABLE TO THE RESEARCHER

3.7 THE INTERVIEWEES

3.8 THE INTERVIEW QUESTIONS

3.9 CONCLUSION

4 THE CASE STUDY

4.1 INTRODUCTION

4.2 BACKGROUND OF THE ORGANISATION

4.2.1 SHB Materials Management Function

4.2.2 Post 2003 - Evolution of the HSE

4.3 PROJECT DRIVERS & EXISTING POSITION OF THE ORGANISATION
4.4 Projects that form the basis of the Case Study ........................................... 54
4.5 Current State Analysis Project .......................................................................... 54
  4.5.1 Initiation Phase ............................................................................................ 55
  4.5.2 Requirements Phase of the Project ............................................................. 59
  4.5.3 Action Phase of the Project ......................................................................... 59
  4.5.4 Accomplishment Phase & Conclusion of the Project ................................. 63
4.6 Business Process Reengineering Project ............................................................ 64
  4.6.1 Initiation Phase ............................................................................................ 66
  4.6.2 Definition Phase .......................................................................................... 67
  4.6.3 Documentation Phase .................................................................................. 70
  4.6.4 Integration and Sign off Phase ...................................................................... 77
4.7 Conclusion ........................................................................................................ 78

5 Analysis of the Results .......................................................................................... 79
5.1 Introduction ......................................................................................................... 79
5.2 Purchasing (Requisition, Approval & Order Placement) Processes ................. 81
  5.2.1 The Requisition and Requisition Approval Process ................................... 83
  5.2.2 Evaluation of the Process - Changes from the Current State to the Reengineered map .......................................................... 86
  5.2.3 The Local Contract Process ....................................................................... 89
  5.2.4 Evaluation of the Local Contract Process - Changes from the Current State to the Reengineered map ................................................................. 93
  5.2.5 Obsolete Processes .................................................................................... 94
  5.2.6 Purchase Order Placement Process ............................................................ 96
5.3 The Remaining Elements of the Supply Chain .................................................... 98
  5.3.1 Inventory Management ............................................................................... 98
  5.3.2 Payments .................................................................................................... 98
  5.3.3 Contracts .................................................................................................... 99
5.4 The Interviews in Relation to the Project ............................................................ 100
  5.4.1 Current State Analysis ............................................................................... 100
  5.4.2 Business Process Reengineering Project .................................................. 103
  5.4.3 Analysis of the Interviews ......................................................................... 107
5.5 Conclusion ......................................................................................................... 107

6 Conclusion ............................................................................................................ 111
6.1 Introduction ........................................................................................................ 111
  6.1.1 Improvements achieved through the BPR process .................................... 111
  6.1.2 The Achievement of 'True' BPR ................................................................. 112
  6.1.3 Process Driven Rather than IT Driven Business ....................................... 113
  6.1.4 Improved Communication ......................................................................... 114
  6.1.5 New Position of Power with the Internal Environment ............................ 114
  6.1.6 New Position of Power with the External Environment ............................ 115
6.2 Conclusion ......................................................................................................... 116

7 Bibliography ........................................................................................................ 117
1 Introduction

This research thesis focuses on business process reengineering (BPR). It specifically concentrates on BPR in the procurement process within the Health Service Executive – Southern area (HSE-SA), formerly known as the Southern Health Board (SHB), in Ireland. BPR in general has been defined by Hammer and Champy (1993) as

The fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed

In the same year, Davenport (1993) described the same concept as 'process innovation'. These initiatives start with a relatively clean slate, rather than from an existing process. In other words, the fundamental business objectives for the process may be predetermined, but the means of accomplishing them are not.

The SHB was one of 11 Health Boards which were established under the Health Act 1970, with statutory responsibility for the delivery of health services in their respective areas. As one of the eleven Health Boards in the country, the Southern Health Board was under the auspices of the Department of Health and Children, and ultimately the Minister for Health and Children. The day-to-day management of the Southern Health Board was carried out by the Senior Executive Team, which was ultimately responsible for the delivery of health services in the Cork and Kerry Regions.

The individual Health Boards were abolished on 1 Jan 2005, and were replaced by a consolidated national structure, the Health Service Executive (HSE). The establishment of the HSE signified the first body charged with managing the health service as a single national entity.

This research uses a case study of a reengineering initiative embarked upon in preparation for an Enterprise Resource Planning (ERP) implementation in the SHB prior to the establishment of the HSE. The project which forms the basis of this case study began prior to the announcement of the new structure.
The research is restricted to the Supply Chain Management (SCM) processes, and in particular, focuses on the Procurement, Inventory management, and Invoice to Payment processes for all goods and services, with the exception of drugs and pharmacy. These processes are executed and managed by the Materials Management Function in the SHB. The Materials Management Function was responsible for the procurement and control of all goods and services for the Southern Health Board Area, and now the HSE – Southern Area, in accordance with EU Public Procurement, State Body Guidelines and internal procedures. The responsibility for the function lies with the Regional Materials Manager (RMM).

The RMM had a strategy group that reported directly to him. This group consisted of:
- Contracts Manager
- Equipping Manager
- Supplies Manager – Cork University Hospital (CUH) Group
- Supplies Manager – Kerry General Hospital
- Materials Management Business Manager
- Catalogue Manager

The contracts department headed up by the Contracts Manager is located in the grounds of St Finbarr’s Hospital, Cork City. The contracts department prepares, advertises and analyses tenders and awards contracts. It is responsible for all negotiations with suppliers of contracted items. An estimated 70% of the SHB budget is pay. The role of the Materials Management function is to manage the 30% non-pay element. Of the 30% non-pay spend it is estimated that only 30% of purchases are from contracts and 70% is off contract buying. The equipping department, controlled by the Equipping Manager, is responsible for the sourcing of, and tendering for, all equipment for capital projects.

Local purchasing departments are based in the main acute hospitals and psychiatric hospitals, as well as in the Community Services Administrative centres. The number of employees, (WTE’s – whole time equivalents) in the function is 96. This figure represents the number of people with a reporting line into the Regional Materials Manager. There are an undefined number of employees working on Materials Management and Supply Chain issues that are not directly reporting to, or controlled by, the materials management function. For example, for historical reasons, staff in the Information and Communication Technology (ICT) department raise their own
purchase orders directly with suppliers. Likewise, pharmacy buying and inventory management is done by the pharmacy departments and not through materials management.

This research will examine the work of the internal reengineering team. The internal reengineering team consisted of senior employees of the SHB who were directly involved with the running and management of the processes involved.

In summary this study is an attempt to answer the following research question:

*How useful is Business Process Reengineering (BPR) in the procurement process in the Southern Health Board?*

### 1.1 Goals & Objectives


Following these studies came the abolition of health boards and the emergence of the HSE. The HSE is organised on the basis of three core divisions: National Hospitals Office; Primary, Community and Continuing Care Directorate; National Shared Services Centre.

The need to introduce one integrated national IT solution became a priority with the establishment of the HSE. This catapulted the Financial Information Systems Project (FISP) from a local to a national project. FISP was a project, initiated in the Southern Health Board, to replace existing and incompatible financial and supply chain systems with one integrated Enterprise Resource Planning (ERP) system. The ERP system chosen by SHB was SAP. FISP had begun prior to the introduction of the HSE. What
began as a single site SAP implementation in the old Southern Health Board has emerged as a pilot implementation, which would be rolled out nationally in the coming years.

In the majority of agencies the existing financial and procurement systems had been in place for upwards of 12 years. Developments in the health sector have resulted in a greater need for enhanced financial management. Specifically, the Health Strategy “Quality and Fairness” (2001), the Value For Money Audit (Deloitte & Touche 2001), the Prospectus Audit of Health Structures (2003), the report of the Commission on Financial Management and Control (2003), collectively and emphatically point to the need for enhanced financial management. According to the project scope document full implementation of the FISP will enable the HSE to specifically achieve the following goals:

- Implement one system, configured in the same way throughout the Irish Health sector for all agencies, with national, common and standardised business processes.
- Deliver best value, best practice business processes that are structurally independent. This will require the design of national, common, standardised business processes (e.g. transactional processes) that are flexible enough to support any future organisational structure.
- Optimise value for money through increased process efficiency, enabling the elimination of waste and the redeployment of staff to support devolved financial management.
- Deliver improved management information to consultants, clinicians and other managers to enable them to take greater responsibility for the resources they are using, and facilitate greater transparency and accountability.
- Drive the organisational change required to implement an enhanced financial management, governance, control and accountability culture.
- Development of service, speciality and casemix costing to facilitate performance measurement, improved management and greater transparency in the use and allocation of resources.
- To deliver the financial management framework which underpins the Health Services Reform Programme.
Heath Service Executive – Southern Area (HSE-SA), SHB at the time, began the dual process in 2002 of creating a framework for FISP while also preparing the organisation for the forthcoming project. This process began with the Finance Department and the Materials Management Department developing independent yet parallel strategies. Deloitte and Touche facilitated this process. The Materials Management strategy is outlined in a document referred to as the ‘Blueprint for Enhanced Materials Management (2003-2008)’ developed by the materials management function. This blueprint stressed the development of comprehensive materials management policies and procedures as a prerequisite to the implementation of an ERP.

The development of the supply chain process and procedures by the Materials Management Function that followed, took the form of two interdependent projects:

- Current State Analysis Project
- Business Process Reengineering Project

The Current State Analysis element of the project was undertaken with the help of an external consultancy group. The subsequent process reengineering element was undertaken by the internal project group.

The objective of this research is to examine these projects as a business process reengineering initiative and determine whether or not it can be classified as ‘true’ business process reengineering, and to determine the extent to which Business Process Reengineering is useful in the Irish public health sector environment.

1.2 Stakeholders

Some general principles will be obtained from the project that will have significance for other companies, particularly public organisations embarking on a business process reengineering initiative. Private Sector organisations undertaking BPR, with similar issues of multi site and geographic disparity, experienced within the SHB, would also benefit from the experiences and results of this study.

Internal management within the Irish health service can benefit from specific lessons learned in this case study. In particular, management in Information and
Communication Technology, Materials Management, and Strategy and Planning departments can benefit. The Information and Communication Technology (ICT) department can use the experiences learned in other system implementation projects, any change program in the SHB region, or in any of the other HSE areas. The Materials Management function can use this case when embarking on change within the function and use the experience gained here when developing processes to establish a national Materials Management Function for the HSE. Strategy and Planning in particular can learn what can be achieved within the individual functions to initiate and instigate change, and establish what the limitations of the individual functions are.

Suppliers and customers, both internal to the health service and external, can use this study to learn more about the workings of the Materials Management function of the Health Service and how processes are designed and implemented. This is of particular benefit to suppliers when encountering the Materials Management function, and in particular the contracts department, for the first time.

More indirect stakeholders include students and the general public. Students in the areas of, BPR, implementation of integrated IT systems, management of public sector organisations, and change, will gain beneficial background knowledge from this study.

Finally, the general public will gain knowledge of the workings of public sector organisations and find evidence, or not, of value for money.
1.3 The Research Structure

Chapter 2 undertakes a review of the available literature relevant to the study. The BPR literature is critically evaluated. The literature considered includes an analysis of the various definitions of BPR, approaches taken in a BPR endeavour, and the resulting successes and failures attributed to BPR. The examination also extends to the role of people in BPR and the relevant role played by Information Technology (IT) in BPR. The literature review also examines publications relevant to BPR and the public sector.

Chapter 3 details the research methodology employed in this research. It begins with a discussion of the research options available to the researcher. It continues with an evaluation of qualitative and quantitative methods of data collection. It then outlines the strategy chosen for this research, namely a case study. This chapter illustrates the case study approach to research, both single and multiple, and the merits and limitations of this method of research. This chapter justifies the use of a single case method of research for this study. According to Cooper and Schindler (2001) and Flyvberg (2004), a single case can provide a major insight into a theory if well chosen and well presented.

Chapter 4 charts the case study used in this research. This chapter provides a profile of the organisation being studied. It discusses the structure and background of the health boards since they were established under the Health Act of 1970. This chapter also describes the structure of the health service since the announcement of the new Health Service Executive in 2003. This chapter then proceeds to outline the structure and the role of the Materials Management Function within the SHB. Subsequently, the project undertaken in the SHB that forms the basis of the case is outlined. Firstly, the need and objectives for the reengineering project are discussed. The discussion then develops into an examination of the work of the internal reengineering team.

Chapter 5 analyses the findings of the research. An attempt is made to analyse the significance of this preliminary work of the internal reengineering team in light of the subsequent ERP implementation.
Chapter 6 will summarise the findings of the study and conclude to answer the question posed:

How useful is Business Process Reengineering (BPR) in the procurement process in the Southern Health Board?
2 Literature Review

2.1 Introduction

Chapter 2 presents a review of the available literature relevant to the study. The Business Process Reengineering literature is critically evaluated in this chapter.

The literature considered includes an analysis of the various definitions of BPR, the approaches taken in a BPR endeavour, and the resulting successes and failures attributed to BPR. The examination also extends to the role of people in BPR and the very relevant role played by Information Technology in BPR.

An evaluation of BPR in the public sector is evaluated in particular as this has a direct impact on the project case.

2.2 Business Process

Process design plays a pivotal role in management and organisational science. Process design refers to the business processes that meaningfully link together tasks into a whole process. The objective is to create something new, when the entire process is executed, so that value is added for the customer (Davenport, 1993; Keller and Teufel, 1998).

Fitzgerald & Murphy (1996) discuss the various definitions of business process available. They conclude that researchers, including Bevilacqua & Thornhill (1992); Davenport & Short (1990); Thomas (1994), agree that a business process is a collection of interrelated activities that span functional boundaries to deliver an output. Fitzgerald & Murphy (1996) suggest this is too vague a definition, and can lead to significant variation in citing the number of processes contained in an organisation.

Thomas (1994) introduces the case of a large bank that estimated it had three processes, while a similar bank estimated they had seventeen core processes. IBM,
which in the 1980s had defined at least 140 processes across the corporation, is today working with 18 much broader processes.

When the objective is radical process change, a process must be defined as broadly as possible. A key source of process benefit is improving integration between functions. This can occur only when processes are broadly defined. Moreover, if a process output is minor, radically changing the way it is produced is likely to result in sub optimisation or, at best, only minor gains (Davenport, 1993). The appropriate number of processes reflects a trade-off between managing process interdependence and ensuring that process scope is manageable. The fewer and broader the processes, the greater the possibility of innovation through process integration, and the greater the problems of understanding, measuring, and changing the process (Davenport, 1993).

Business Processes are defined by Weeks (2005) as follows:

*Business processes start with inputs from suppliers and end with outputs that achieve outcomes for customers. In between, work flows through a series of repeatable steps, during which value is added to a product or service*

This is consistent with the idea of a true value chain. Every value activity employs purchased inputs, human resources (labour and management), and some technology to perform its function (Porter, 1985).

The classic work theories of Adam Smith and Frederick Taylor, on the division of tasks, still dominate the mindset that manages work practices in many public organisations, and can prevent enterprises from implementing integrated business processes.

Nordsieck, however, focused on the operational task in his work in the 1930s (Keller and Teufel, 1998). He implies a strong emphasis on 'how' work is done within an organisation, in contrast a product focus that emphasises on 'what'.

The conventional wisdom, even among advocates of process thinking, is that the process should be designed before investigating enabling technology or systems. A
process design should be enabled, not driven, by, a particular change lever (Davenport, 1993).

Unfortunately, this has not always been the case with Enterprise Resource Planning (ERP) implementations. With ERP, the user no longer receives just a piece of software. In fact, hidden in the ‘Trojan Horse’ (Keller and Teufel, 1998), are business management science principles blueprinted by the vendor not the organisation. This may lead to processes that are not customised directly to the requirements of the organisation.

It is well recognised in the literature that, from the perspectives of the firm implementing ERP, the capabilities of the ERP package place limits on the design of business processes, see fig 2.1 (Gattiker and Goodhue, 2002).

![Diagram showing the limits imposed on the business process by ERP packages.](Diagram)

(Gattiker and Goodhue, 2002).

*Fig 2.1 – Limits imposed on the business process by ERP packages*
2.3 Process Mapping

Soliman (1998) advocates process mapping, or process understanding, as the most important and fundamental part of business process reengineering. It is with the use of process mapping that an organisation can highlight where, and how, they can improve their processes. (Soliman, 1998). According to Soliman, business process mapping allows management to view the business at a glance. The view, available to management, varies from an overview map (referred to as a ‘macro-map’) to a very detailed map (called a ‘micro-map’), depending on what level of mapping was done in the organisation.

Soliman gives a simplistic, three-step version of how process mapping is performed. Firstly, the organisation identifies its products and services and their related processes. Secondly, data is gathered and prepared. Thirdly, the data is transformed into visual representation in order to identify potential problems. (Soliman, 1998).

Sattin (2006) relays the process of mapping in more detail. The starting point for process mapping is to define business processes. These processes are reviewed with the executive that has most to gain or lose by the process. A plan is then developed, detailing which processes are to be transformed, and their priorities. Next, the transformation of the first process commences. A team of motivated people with process knowledge is selected as the process review team. This team is required to map the process, but not in too much detail because the process will be changed anyway, and excessive detail is unnecessary. They identify strengths, weaknesses, issues and opportunities within the process. The team develops a business case with costs, benefits, implementation plan and potential risks. The final phase is to implement the new process. A new process is implemented as a pilot, and in stages. (Sattin, 1998)

When flowcharts have been documented, and potential problems highlighted, Akamavi et al (2000) identify four types of changes that can be made to flowcharts. These are

1. Reduced divergence. This leads to uniformity which tends to reduce costs, improve productivity and provide a more effective distribution system. This process is usually aimed at reaching economies of scale.
(2) Increased divergence. Greater customisation and flexibility, which leads to price increases and indicates a niche positioning strategy

(3) Reduced complexity. This indicates a specialisation strategy steps and functions are dropped from the system, so the resources can be focused on narrower services and complete satisfaction to the customer

(4) Increased complexity. The strategy is used to gain a greater penetration in the market (for example: banks have expanded their product ranges to maximise revenues)

(Akamavi, R et al, S; 2000)

Sattin (1998) identifies three ways to map, or document, the process. A line of vision process chart can be developed, displaying customer-related activities on the top, computer systems on the bottom and departmental functions in the middle. The organisation can use sequential process flow charts, which show all process activities and steps. Or brown paper mapping can be utilised, where stickers, representing activities, are placed on a large wall covered in brown paper. (Sattin 1998)

According to Akamavi et al (2000)

*The flow mapping or flow charting method is one of the simplest ways in which to analyse problems visually as well as to detail other parts of a process, or an entire process.*

A process map contains activities, business functions, inputs, outputs, cycle times, and decision points which reveal how knowledge is created, used, transferred, and by whom. (Vollmer & Phillips, 2000).

Microsoft's Visio is an example of a tool used in the mapping of a process. Visio consists of a set of shapes that can be dragged and dropped on to a blank page, or template. This, combined with a variety of arrows, is used to create a picture, or map, of the process. An input is required to start, and an output to complete. Between theses two points, there are a number of activities, represented by the same shape for each type of action. For example, activities are represented by a square; external deliverables are oval shaped. This makes the process visually very clear (La Ferla, 2003). However, there are problems associated with mapping, particularly in relation to mapping complex processes. This is made evident by Akamavi et al (2000)
even though large processes are created on huge diagrams known as a 'brown paper', the difficulty still remains of clearly documenting the process so that the given audience can clearly understand the flow of the whole process, and hence understand how the service is delivered.

Therefore, despite the advantages of process mapping, there are limitations when documenting large processes. When a process gets complicated so also does the complexity of the flowchart.

### 2.4 Business Process Reengineering

'Business Process Reengineering', in general, has been defined by Hammer and Champy (1993) as,

\[
\text{The fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed} \]

Hammer introduced this point in 1990. Hammer wrote that

\[
\text{reengineering strives to break away from the old rules about how we organize and conduct business} \]

He defined business process reengineering by explaining that at the

\[
\text{heart of business reengineering lies the notion of discontinuous thinking – identifying and abandoning the outdated rules and fundamental assumptions that underlie current business operations. (Hammer and Champy, 1993: p94)} \]

Davenport (1993) described the same concept as process innovation. These initiatives start with a relatively clean slate, rather than from an existing process. In other words, the fundamental business objectives for the process may be predetermined, but the means of accomplishing them is not (Davenport, 1993).

Despite this definition, in 1995 Davenport criticises Hammers (1990) desire to obliterate current practices. In contrast to his previous writings, Davenport advocates a critical analysis of the current work practices before embarking on change. He stresses the importance of observing work practices as the best way to give a design
team a full understanding of the daily contingencies that affect how a process is performed (1995: p27)

Davidson (1993) trivialises the concept of reengineering. He refers to it as merely the starting point for business transformation (p65). Davidson acknowledges the radical performance gains (1993: p65) reengineering achieves as defined by Hammer, Champy and Davenport, but further urges organisations to push for total business transformation.

Albeit the credit for the creation and original definitions of Business Process Reengineering in the early 1990's lie with Hammer & Champy; Davenport and Stoddard (1994: p122) remind us of the full history of Business Process Reengineering. Process analysis and design date back to Fredrick Taylor in 1911, with business processes in existence since the mid-1940s. Davenport and Stoddard (1994) attribute the start of business process redesign and incremental process change to Porter (1985), Gabor (1990), Juran (1964), Bower and Hout (1988), Stalk and Hout (1990). All of which preceded the 1990s, the era that business historians of the future will characterize...as the decade of reengineering (Davenport et al, 2003: p48).

Davenport and Stoddard (1994) criticise modern reengineering for ignoring its history and thus ignoring valuable lessons learned. This they attribute to the dilution of the powerful change approach of Reengineering (1994: p121) with the introduction of reengineering myths:

*Unfortunately, the popular management literature, by relying too much on hype and too little on research, common sense, and the lessons of the past, has created more myth than practical methodology.* (Davenport and Stoddard 1994: p121)

This dilution is evident in later research – more recently Davenport et al (2003) recognised the importance of early definitions of reengineering. They say this definition of BPR changed, and reengineering came to mean any change project even incremental change of very small processes (p48). Using the term reengineering for any project I want to get funded saying that all these diverse activities were forms of reengineering raised expectations for the concept and...
no doubt hastened its demise (Davenport et al 2003:p48)

may have been the trigger to the decline of business process reengineering.

2.5 Business Process Reengineering and the Public Sector

Weeks (2005) referred to the public sector's reaction to business process reengineering

*The process-management revolution – driven by advanced performance measurement, flatter corporate structures, process-based teams, and the use of technology and process change to reengineer work – has transformed American business in the last twenty-five years. This revolution is only beginning to change the public sector.* (p3)

Previous to this, available literature looked at the differences between private and public, and emphasised reasons why BPR was unsuitable for public sector.

Hutton (1996) lists a number of characteristics in public sector organizations that have a bearing on BPR. These include rigid hierarchies; culture; multiple stakeholders for many processes; changes in policy and direction can be sudden and dramatic; overlap of initiatives; wide scope of activities; staff.

McAdam & Mitchell (1998) identify these issues as people-related, or 'soft' issues, rather than process or 'hard' issues.

Cats-Baril and Thompson (1995), in agreement, expands further by highlighting differences between the public and private sectors. They cite, more constrains imposed by red tape, greater level of interdependence across organizational boundaries, higher level of extra-organizational linkages, greater interdependence across organizational boundaries, the turnover of top level administrators, the need to convince employees to change the existing organizational processes is greater, the difficulty to implement change is increased, and management tends to have less authority than its private sector counterparts. According to Cats-Baril and Thompson (1995):
the concept of reengineering processes goes against the prevailing culture in many public sector organizations, the perceived need to reduce government bureaucracy is forcing cultural changes

This view leads Indihar Stemberger & Jaklic (2007) to conclude that it is not possible to radically change the execution of business processes in the public sector, or to alter the organizational structures. They argue that business process reengineering, or business process change, in the public sector mostly means unification of business processes, automation of some activities and elimination of some unnecessary one (p222). Thereby achieving limited organisational and process change rather than a dramatic or radical one.

Reyes (1998) suggests that reengineering is just another method in a litany of change techniques, designed for the private sector, and used in a public sector setting to introduce efficiencies. These methods, reengineering included, not only ignore the differences between public and private sectors, but also, more importantly, do not address the inherent problems in public sector. Reyes (1998) suggests that:

reengineering comes on the heels of a growing inventory of prescriptions and interventions towards reforming government bureaucracies today. As a philosophy and a strategy geared towards enhancing corporate systems and methods in a globalized environment, reengineering can be viewed as part of a shopping list of aspirant paradigms that prescribe ways and approaches to reverse the tide of incompetence, inefficiency, redundancy, rigidity and the problematic of oversized staffs that characterize government bureaucracies today (Reyes,1998: p43)

Despite differences between public and private sectors, as outlined, public sector organizations are being scrutinized, and held accountable, for their use of funds more than in the past. Taxpayers increasingly compare public sector to private sector, demanding better customer service. Public organisations are responding. They are spending more on IT, when public budgets are under public scrutiny. But no different to the private sector, public organizations find a large number of IT projects run over budget, behind schedule, and produce fewer benefits than expected; but attract more publicity than their private counterparts. (Cats-Baril and Thompson,1995).
So can BPR work in the public sector? Reyes (1998) believes that it cannot work unless the public sector can change its bureaucratic culture and break away from the ties of the past. Reyes (1998) states that the culture of bureaucracies has been so ingrained in the public sector that resistance to change would not only come from inside, but also from politicians and lobbyists. He believes this is especially evident if reengineering would result in downsizing the work force:

*A major issue that would have to be addressed is that downsizing of the public sector because of a reengineering process may not be a popular one and may invite the wrath of both politicians and of the public. Wide-scale removal or dismissal of government personnel at any level for reasons of redundancy will always be an explosive and sensitive issue that may not generate sympathy from the public (Reyes, 1998: p50)*

Stemberger & Jaklic (2007) argue that a reengineering initiative can be successful, if there is sincere commitment from the top management. This sincere commitment Stemberger & Jaklic (2007) regard as the critical success factor. However, like Reyes (1998), Stemberger & Jaklic (2007) identify this commitment as a major problem, because top management must balance the need for change internally with the needs of, and pressures from, politicians and public.

*Sincere commitment of the top management is considered to be ...the critical success factor of the project...... in the public sector, this could be one of the major problems due to the fact that this commitment is more of a formal nature, a consequence of public opinion pressure and not the truthful awareness of a need for a change (Stemberger & Jaklic 2007: p224)*

McAdam & Mitchell (1998) give the most positive of outlook. They claim that BPR models and methodologies can be applied successfully to public sector organisations, but cannot be applied without considerable modifications. The modifications they highlight take into account localised key success factors within the public sector, and the huge importance of communication in each stage of the process.
2.6 Business Process Reengineering and Information Technology

Hammer (1990) states that heavy investments in information technology have delivered disappointing results – largely because companies tend to use technology to mechanize old ways of doing business. He condemns the misplaced concentration on IT, instead of on business process, when he refers to embedding outdated processes in silicon and software. This is reiterated by Hammer (1999) when he claims

*the inspiration for classical reengineering can be summarised in the phrase ‘automating a mess yields an automated mess’. Poorly designed processes are not improved by simulating them on a computer*

Grover et al (1995) agree with Hammer. Grover et al contend that new IT systems should be designed to support the new processes of an organisation. The organisation’s processes should not have to be shoe-horned into ill-fitting programmes.

This argument was revisited by Davenport, Prusak, Wilson (2003), when they discussed what went wrong with reengineering. The authors argue that over-reliance on fitting processes around new IT was one of the main reasons for failures in reengineering. They claim organisations were too eager to hand over control of their reengineering to outside consultants and vendors of enterprise software. They suggest the managers of reengineering projects flocked to the enterprise vendors such as SAP AG, Oracle, and PeopleSoft Inc (Davenport, Prusak, Wilson, 2003). These companies, not surprisingly, relied heavily on their own software package to steer the process change. Whilst the authors acknowledge that software vendors’ processes may be built on best practice, they argue such processes tend to be generic, rather than specific, to a company’s needs.

In addition, because it is expensive to modify systems, all companies tend to end up with the same, or similar, processes. Their view is that this negates any competitive advantage companies should have gained from their reengineering project.

However, this interpretation is not shared by Sayer (1998). She refers to BPR as solely a project to introduce IT, ignoring the importance of process change.
BPR promotes a flatter organizational structure, filled with empowered process workers who use IT in radically new ways to carry out operations. Sayer, Kylie (1998: p247)

This sentiment is repeated by Newell, S; Swan, J & Galliers, R (2000) who refer to IT-based innovations such as BPR.

Clemons (1995) takes a softer stance; he discusses the inevitability of the role of IT in BPR. He argues that redesign of an organisation's processes, structures, ethos and, perhaps, the re-examination of corporate strategy predictability leads to a multi-million-dollar project to replace the organisation's IT.

Broadbent et al (1999) reiterate this, stating that regardless of the initial state of IT infrastructure, successful BPR will result in some change, or extension, to the firm's IT.

Gunasekaran and Nath (1997:p92) go beyond the use of IT in the reengineered organisation: they acknowledge the dual role of IT within the area of BRP. They discuss the use of technology in the BPR initiative/project, and also the emergence of enabling technology to improve business processes, and improve the integration of various functional areas.

The importance of IT, as an enabler in BPR, was also discussed by Davenport & Stoddard (1994), and Maull et al (1995). Davenport & Stoddard (1994:p123) refer to IT as clearly an enabler of reengineering. The authors discuss the importance of acknowledging that reengineering is a business initiative. They suggest there is an important role for IT in enabling the reengineering. Their research dismisses 'the myth' that Information Systems (IS) should lead reengineering. This leads to IS managers starting reengineering projects, and later discovering they cannot implement change, because authority to do so lies outside their control. This leads to an understanding that there is an important need for a partnership between IS and managers associated with the business process being redesigned.

Davenport & Stoddard (1994) also warn that there is an important role for IT to avoid becoming an inhibitor, or disabler, to reengineering. Broadbent et al (1999) regard IT
as sometimes enabling, and, other times, constraining, a firm’s BPR efforts. This depends on whether the needed IT infrastructure is available or not.

In our research we found that having the ‘right’ IT infrastructure services in place speeds implementation of new process designs. If the required infrastructure services do not already exist, the business benefits of the redesigned or new business processes can be a powerful argument to justify the infrastructure investments for BPR and other initiatives.

Broadbent, Weill, St.Clair (1999:p159)

Albadvi et al (2007) investigate how to invest in IT to increase productivity. The authors conclude that investment in IT alone does not improve a firm’s productivity. However, combined with investment in organisational changes and redesign, performance can be improved. They claim the greatest productivity of IT is realised when IT investment is integrated with investment in new strategies, new business processes, and new work practices. Thus, Business Process redesigning, and organisational reengineering, makes optimal use of IT investment.

Olalla (2000) discusses the types of IT that make BPR work. He states that, to reengineer processes successfully, an organisation must redesign processes with a large number of intermediate steps in order to eliminate as many intermediate steps as possible.

Olalla (2000) claims that there are three types of processes: interorganisational, interfunctional, and interpersonal. He lists shared databases, and electronic data exchange as IT that eliminates intermediate steps in interorganisational processes. Telecommunication networks make simultaneous work in various locations possible in interfunctional processes. Imaging technologies and electronic mail are technologies that aid reengineering of interpersonal processes. These Information Technologies, along with Decision Support Systems, Expert Systems, and CAD systems among others, reduce time and costs and improve the output quality in operational processes Olalla (2000:p585).

Olalla (2000) advocates the use of IT to aid communication and collaboration to eliminate steps in business processes. Those communication tools include email, and video conferencing.
There are technologies that collect and distribute information such as video conferences, databases, email or telecommunication networks, and executive information systems. Second, there are the information systems that help make decisions, namely decision support systems and expert systems. Olalla (2000: p586)

Examples of such technology-aided BPR are reported by Hammer (1990). In the transformation in Ford Motor Company for example, Ford reduced its work force by 75% by applying shared databases in the accounts payable process. Hewlett-Packard increased their sales by 10%, and their salesmen's time with customer by 27%, by using portable computers connected to the company's inventory database. These initiatives enabled sales staff to get real-time information in the field. (Olalla 2000:p588).

2.7 Business Process Reengineering Successes and Failures

Much of the early literature available on BPR in the early 1990's was based on defining and promoting BPR: Hammer(1990), Hammer & Champy (1993), Davenport (1993). The narrative changed in 1995 to the reporting of, and discussions around, the successes and failures in BPR initiatives. Davenport (1995) declares that popular research on reengineering claims the failure rate of projects is 50% to 70%. Clemons (1995) refers to BPR as 'Risky Business' (p61). Clemons' (1995) argument suggests that Davenport (1995) may be overly positive by understating the failures of such projects:

However, a larger body of evidence suggests that many, even most, reengineering efforts ultimately fail (Clemons 1995:p62)

In support of this view on BPR failures, Fitzgerald and Murphy (1996) suggest failures are underestimated, because many failures go unreported: the organisation does not want to make public the information that their initiative failed, or worse the organisation may not survive to tell the tale.
Davenport (1995) defends BPR when he asserts that, despite the widely reported high failure rate, there is no factual evidence of rate of failure.

Davenport (1995) argues failure results of reengineering are further done a disservice, because of a misinterpretation over what constitutes a reengineering success, or failure. He states that redesign, or reengineering, should be judged on the plan of action, not the resulting implementation.

When we set out to redesign a business process, we are really only creating a plan for how work will be done in the future...consultant Tom Peters estimates that the percentage of strategic plans that are implemented as designed is less than 10%. Why should we expect reengineering-oriented plans to be much different?

Like Davenport (1995), Cresto et al (1995) also suggest a slight positive slant on the reported failures

Business process reengineering can be very successful — if it doesn’t fizzle out, drown in a seemingly unsupportive organisation structure or stagnate because of resistance or lack of knowledge

Hall et al (1994) proposed three critical determinants of successful BPR projects. These are:

1. Breadth -- whether the project is set up to improve performance across the whole business unit.
2. Depth -- the change to six fundamental organizational elements, namely organizational structure, roles and responsibilities, measurements and incentives, information technology, shared values and skills.
3. Leadership -- the extent of top management commitment.

In support of this, heading the list of reasons for failure, in the literature, is lack of leadership support. Davenport (1995) refers to poor results due to non-existence of top management support. Cresto et al (1995:p72) claim that BPR projects tend not to live up to expectations because managers don’t understand how the business operates.
Gunasekaran and Nath (1997) refer to loss of nerve (p92). Hall *et al* (1994) conclude that:

*Ultimately, however, a reengineering project – like any major change program – can produce lasting results only if senior executives invest their time and energy.*

Davenport (1995) and Cresto (1995) agree that another significant reason for failure is an organisation’s inability, and/or unwillingness, to change. Gunasekaran and Nath (1997) state that one of the factors preventing successful BPR is instigators pulling back when people resist change.

Another suggested reason for failure is that the time frames for change are too long (Cresto *et al*, 1995). This over-long time frame leads to the business environment changing before the new reengineered processes are adopted. (Davenport, 1995). Other suggested reasons for failure are: undefined ownership of processes (Cresto *et al*, 1995); the change initiative did not enlist the cooperation of the people who were involved in the process (Davenport, 1995); correcting the process instead of changing it (Gunasekaran and Nath, 1997); and settling for minor results (Gunasekaran and Nath, 1997).

Davenport, T and Prusak, L; with Wilson, J. H. (2003) suggest that perhaps the greatest reason for failed BPR initiatives is that the reengineering effort was vastly underestimated, and over simplified.

*The greatest shortcomings of the Hammer and Champy reengineering work is not that it neglects people or that it employs overblown rhetoric, but that it fails to acknowledge how difficult, time-consuming and expensive it is to reengineer.*

### 2.8 Business Process Reengineering and People

Davenport (1995) proposes the real reason reengineering and information management initiatives fail so often is because they are wrongly assumed to be engineering projects.
The engineering model emphasizes design, modelling, and advance planning. He claims that it wrongly *deemphasizes the human skills needed to make a community out of a set of people working on the same process or sharing certain information* (Davenport 1995: p24).

This article was followed, in 1996, by an article in the Wall Street Journal that offered a less diluted version of this argument. A front-page Wall Street Journal article published a statement by Hammer:

> Dr Hammer points out a flaw: He and the other leaders of the $4.7 billion re-engineering industry forgot about people. 'I wasn't smart enough about that,' he says. 'I was reflecting my engineering background and was insufficiently appreciative of the human dimension. I've learned that's critical.' (Davenport, Prusak, Wilson 2003: p48)

The article goes on to explain that Hammer’s earlier rhetoric neglected the human element, with phrases such as, *In reengineering, we carry the wounded and shoot the stragglers, and, It's basically taking an axe and a machine gun to your existing organisation.* (Davenport, Prusak, Wilson, 2003: p48)

Cooper & Markus (1995) agree that the high failure rate in Reengineering Projects is due to mishandling of human resources. They argue that reengineering fails because people resist change. As long as organisations continue to assume that human resources will resist a change because of the change per se, they will have difficulty implementing that change. An organisation will not succeed until they realise that the people are not reacting to the change, but to the way in which they are treating during the implementation of that change. Cooper & Markus (1995) expand by explaining how the inclusion of people in the change will aid a smooth change implementation. They state that the engine of reengineering is not reengineering consultants or analysts, but is the managers and staff who do the work. The people involved in the processes day to day should be included in the reengineering, rather than have new processes imposed on them in implementation. Cooper & Markus (1995) advocate that reengineering project teams should be staffed with people who perform key activities in the process that is being redesigned. The success of a project hinges on these people’s knowledge, and also their increased willingness to implement the change because of their involvement. Cooper & Markus (1995) write that:
The first and most important lesson is that lasting organizational change always requires significant change in people. Without change in human knowledge, skill, and behaviour on the job, change in technology, processes, and structures is unlikely to yield long-term benefits. It is essential to focus on changing people as well as other aspects of the organization, because people make the difference in organizational performance and have ideas for productive change. (Cooper & Markus, 1995)

2.9 Conclusion

There are a number of different definitions for a business process. Definitions in the available literature, while not conflicting, allow for a very wide concept of what makes up a business process. This is particularly evident in the Bank example cited.

Regardless of what constitutes a business process, process mapping is identified as an efficient, and widely utilised tool, for documenting the process. Process mapping and flowcharts are regarded as the simplest way to analyse problems visually, but they are not without their limitations, in particular when it comes to large complicated processes.

The literature in relation to BPR describes a process that involves fundamental rethinking, radical redesign, and dramatic improvements. It is a concept that encourages participants to break away from old rules, and ways of working, and to completely rethink the process. Not all authors agree that this is a new concept. Some see BPR as a repackaging of earlier redesign concepts, going back as far as Taylor in 1911. Proponents of this view refer to repackaging as hype, rather than a new concept.

There is some indication in the literature that BPR can work in the public sector, but BPR is described as useful, rather than successful. This view says BPR can be successful only with considerable modifications, which indicates that ‘true’ BPR is not possible.

The initial period of literature, dedicated to defining and promoting BPR, was followed by a period of literature devoted to discussing the success and the failures of
the concept. The literature pertaining to failures was much stronger, and more prevalent, than that pertaining to successes. It appears that failure in BPR was the popular belief in the mid to late 1990's. This is modified slightly by the belief that

1) statistically, BPR has been no greater a failure than any other planning project
2) a number of the projects that failed were not 'true' BPR.

The literature followed on from this to explain why BPR projects failed, and how to best avoid BPR failures.

IT is an important element in successful BPR. BPR, rather than being an IT driven project, is an initiative enabled by IT. IT has the duel role in BPR. IT aids a BPR project itself as a project tool. Then ultimately, IT is used to implement more efficient processes.

Another important element in successful BPR is the human element. BPR initiatives are rarely, if ever, successful if treated as engineering projects in which the people involved in the processes are ignored. Human resources, people, employees are an important element in all business processes, and thus it follows that they are an essential element in redesigning those business processes. Research suggest that the people involved in the day to day running of BPR processes are those best qualified to map existing processes, and validate proposed new processes. To exclude people from BPR would be to lose valuable insight into the processes being redesigned, and ultimately alienate the element best able to implement and accept the change.

Chapter 3 looks at the methodology used in this research thesis. The different methods of research relevant to this study are evaluated. The most appropriate methodology is outlined.
3 Methodology

3.1 Introduction

This chapter describes the methodology used in this study. It begins with a broad discussion on research classification. It then focuses on the research methods considered, and the appropriateness of selecting a single case study method. It also describes briefly the interview method of data collection, used to support the case study method.

3.2 Types of research

Grinnell (1993) defines research, as a structured inquiry that utilises acceptable scientific methodology to solve problems and creates a new knowledge that is generally applicable. More recently, Kumar (2005) believes research to be a way of thinking, rather than just a set of skills or formulas. The mere collection of data is not true research, unless the data is collected systematically, is interpreted systematically, and there is a clear purpose identified (Saunders et al, 2007). Saunders et al identify the main research strategies as experiment, survey, case study, action research, grounded theory, ethnography, and archival research.

Research methods are classified in various ways. The first section of this chapter describes primary and secondary research methods, and qualitative and quantitative research methods.

3.2.1 Primary and Secondary Research

A combination of primary and secondary sources of data is used in most research. The mix of sources will depend on availability of secondary data, or the accessibility of primary data collection available to the researcher. (Saunders et al, 2007).
3.2.1.1 Primary Research

Primary Data refers to raw data collected without previous interpretation. Primary data is data collected first hand by the researcher (McNeill and Chapman, 2005), and is collected specifically for the research project being undertaken (Saunders et al 2007). Examples of primary data are memos, letters, interviews, speeches, laws, and court decisions. Some examples internal to an organisation include inventory records, personnel records, and purchase requisitions (Cooper and Schindler, 2001). The method used will depend on the purpose of the study, the resources available to the researcher, and the skills of the researcher (Kumar, 2005).

In this research study, the primary data consists of meeting minutes and progress reports from the project, notes from site visits and brainstorming workshops when data for the current state analysis was collected, and the brown paper mapping developed in the BPR project. Finally, this will be supplemented with primary information collected in follow-up interviews with the project team. The interview method is discussed in more detail later in this chapter.

3.2.1.2 Secondary Research

Secondary data refers to data pertaining to the research question that has already been collected by someone else for their own purposes. This data can then be used in part for the purposes of the researcher's study. This secondary data can be classified under the following categories: Government publications, Earlier Research, Personal records, Mass Media. Examples of secondary sources of data under these categories include census, economic forecasts, health reports, newspaper articles, and personal records (Kumar, 2005).

Unlike primary data, secondary data has at least one level of interpretation inserted between the event and its recording. This allows for more error and less control over the truth (Cooper et al, 2001). This secondary analysis is referred to by Seale et al (2004) as reanalysis. Kumar (2005) also alerts the researcher to some problems associated with the collection and use of Secondary Data. The validity and reliability of the data used from secondary sources will vary, depending on the origins of the data. Data used from a census will be more reliable that information obtained from
personal records. Personal records and newspaper articles will have the added disadvantage of being less objective and more likely to reflect the bias of the original authors. Finally there exists the likelihood that the information available is not easily accessible or is only accessible in a format that does not match the researcher’s needs. For example statistics relating to procurement may be collected for the purchase to invoice process but the research subject relates to the requisition to pay process. Seale et al (2004) also refers to the disadvantage of misinterpretation associated with the use of secondary data. This can occur through lack of skill of the researcher or more often opportunistic interpretation of the data.

The advantages of secondary data are highlighted by Saunders et al (2007). The main advantage associated with the use of secondary data is the huge saving both financial and time. The research can utilise the time saved on collecting data, to interpret and analyse that data. Another large advantage to secondary data is that it can be used to triangulate the researcher’s findings and add weight to the researcher’s results. Finally, secondary data is more permanent and thus can be verified easily and explored further by readers of the research study.

The standard operating procedures developed by the Southern Health Board (SHB) project team in the BPR initiative forms the basis of the secondary sources of data for this study. This is complemented by a review of current literature in the relevant subject area.

3.2.2 Qualitative and Quantitative Research Methods

Once the Primary and Secondary data is collected, according to Saunders(2006), this data is then examined using qualitative and/or quantitative methods of analysis. One of the most common distinctions in research is between structured and unstructured research methods. The structured approach is referred to as quantitative research and the unstructured is referred to as qualitative research (Kumar, 2005). While a case study, as used in this research, is most often seen as qualitative research method (Copper et al, 2001), a case study typically uses both qualitative and quantitative methods of data collection (Yin, 2004) referred to as Mixed Method Research (Saunders et al 2007).
3.2.2.1 Qualitative Research

Qualitative research is an umbrella term that covers a variety of styles of social research, drawing on a variety of disciplines such as sociology, social anthropology and social psychology (Denscombe 2003:p267).

Qualitative research refers to the collection, generation, analysis or use of any data that is non-numerical (Saunders et al, 2007). It does not however exclude the use of numeric information:

*By our pragmatic view, qualitative research does imply a commitment to field activities. It does not imply a commitment to innumeracy* (Kirk and Miller 1986:p10)

Qualitative research concentrates more on relevant data in any format, rather than rigid tabulation of facts. It is not concerned with standardising the interpretation of the data collected but in developing a complex collection of relevant data (Silverman, 2005).

There are advantages and disadvantages associated with qualitative analysis.

Some advantages outlined by Denscombe (2003) are that the data is ‘grounded in reality’ and there is a great since of richness, depth and detail to the data. Also, in contrast to quantitative analysis, there is an expectation, and acceptance, of ambiguity and contradictions, because of the less standardised nature of the analysis. Denscombe (2003) was also aware of the disadvantages associated with qualitative analysis. He noted that qualitative methods of data collection can be far less representative than quantitative and can be open to more question and doubt. Qualitative research can also be influenced by the beliefs and preconceptions of the researcher, more so than quantitative methods. According to Byrman (1988) qualitative research lends itself towards an anecdotal approach to the use of data and conclusions reached. The researcher must overcome the temptation of convincing themselves, and readers, of facts based on hand picked, or out of context, examples, and must avoid the problem of *anecdotalism* (Silverman, 2005).
Some examples of qualitative research are in-depth interviews, participant observations, case studies, and street ethnography (Copper et al, 2004)

### 3.2.2.2 Quantitative Research

Quantitative Research is characterised by a *methodology of formulating hypotheses that are tested through controlled experiment or statistical analysis*, Kaplan (1988). Generalizability is the aspiration of quantitative research and is normally achieved by statistical sampling (Silverman, 2005).

Examples of quantitative research methods include statistic modelling and experimentation (Saunders, 2007).

### 3.2.2.3 Qualitative versus Quantitative Research

The research process involved in qualitative or quantitative research is broadly the same. What differs is the method of data collection, the analysis of that data, and the way the findings are communicated.

Kumar (2005) identified the differences between the two methods. He believes that one of the most predominant differences is in how the data is collected. Quantitative research lends itself to structured, rigid data collection whereas qualitative research leans towards unstructured, flexible data collection such as observations and unplanned interviews. Another difference includes the advantage and importance of a large sample size in qualitative research compared to the examination of few or even one case, as in this study, in quantitative research. The analysis and communication of findings of qualitative study relies largely on numerics and statistics, whereas quantitative findings are more narrative.

Both qualitative and quantitative analysis has their strengths and their weakness, their advantages and disadvantages. Neither is better than the other, but rather one can be more suitably used to answer the research question.
In most cases, as in this study, a combination of both qualitative and quantitative analysis is appropriate. (Kumar, 2005; McNeill et al, 2005)

### 3.3 Selection of Case Study Approach

Yin (1994: p13) defines a case study as

*an empirical enquiry that investigates a contemporary phenomenon within its real life context, when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used.*

Yin (1994) argues that the case study allows the investigation to be holistic and to preserve the characteristics of real life events such as business processes, life cycles, and internal relationships.

The case study is a concentrated study of a single area of concern. Usually this single area of concern is associated with a location and is therefore specific to a time and place (Daymon, 2002). It is the preferred method of research when the researcher has little control over events and there is no pressure on the researcher to impose controls (Yin, 1994; Denscombe, 2003). Hackley (2003) clarifies however that case study is not strictly speaking a research method; it is merely a method of data collection. It is the combination of data analysis methods such as qualitative and quantitative analysis that generate the findings.

The case study has a very well established and formidable history. The case study approach is the single most popular general approach to research in business and management. The approach and the resulting research outcomes from case studies are widely accepted and trustworthy (Hackley, 2003).

The use of case study is particularly advantageous because it uses multiple sources of evidence (Robson, 2002; Saunders et al, 2007). The diversity of a case study is in the utilisation not only a variety of research methods but also multiple sources of data (Denscombe, 2003). There are a variety of methods of data collection and data uses stemming from the case study approach. Most rely on pre-existing information within the organisation or case used; others employ an ethnographic style if the researcher, as
in this study, has access to the organisation to observe from within, and is referred to as Action Research. Action Research is discussed in detail later in this chapter.

Some studies use multiple cases to make comparisons or to verify findings, while other studies find a strong enough case to justify a single case study approach. This proves that the case study approach is varied and there is no single method of dealing with a case study method (Hackley, 2003).

Another advantage of the case study approach and according to Denscombe (2003), the main advantage, is that the focus in a case study is on one or a few instances of an event which allows the research to deal with the subject matter in depth, the focus is on depth rather than breadth of study, and thus enables the researcher the opportunity to concentrate on the particular rather than the general.

Denscombe also emphasised the advantage of doing research in a natural setting, where the event being researched has already happened or already exists and is not artificially generated for the purpose of research. This lends itself towards more credible and reliable data.

Yin (2003) differentiates between four case study strategies based upon two separate dimensions: single case versus multiple case; holistic case versus embedded case.

3.3.1 Single versus Multiple Case Study Method

A single case study has been described as a non-longitudinal, single shot of a given organisation (Chass, 2004). It allows the researcher the opportunity to undertake a deep but narrow investigation of a particular phenomenon (Daymon, 2002).

Saunders et al, (2007:p140) identify two circumstances for using single case. A single case is suitable for use when the case is unique or critical. Alternatively, a single case study method is used when the case is typical or representative of standard. According to Cooper and Schindler (2001) and Flyvberg (2004), a single case can provide a major insight into a theory if well chosen and well presented. In contrast Yin (2003) believes that the researcher will need a stronger justification for using single case than multiple and therefore a multiple case study is preferable.
A multiple case study allows the researcher some measure of generalization in the findings and allows for identification of comparisons or contrasts between cases. Once the research goes to or beyond the use of four cases then the results may become diluted due to the lack of depth the research can achieve within the limitations of time (Daymon, 2002). As indicated by Saunders et al (2007:p140) the rationale behind using multiple cases is to legitimise the findings in the first case and therefore the ability to generalise. Yin (2003) states that this can be achieved by the selection of cases that replicate each other with results that are either predictably similar or results that are contrasting for predictable reasons.

A single case study method is most appropriate in this research as the case examined is a unique instance of such an event in the industry involved. Whilst other public service and not for profit organisations have undertaken business process reengineering projects, none represent the geographical diversity, product diversity, multi site differences involved in this case. This case covers the full product range consumed by the Southern Health Board, excluding drugs. It includes all catering products, bandages, aids and appliances, furniture, communication and IT products, perishable and long life foods. This diversity is complicated by the large geographical spread between Cork and Kerry of all the different and varying consumer units. These units vary from acute hospitals such as Cork University Hospital to a part time health centre in Dingle.

### 3.3.2 The Holistic Case versus Embedded Case

The difference between holistic and embedded case study refers to the unit of analysis (Saunders, 2007). According to Yin (2003), if the case study relates to one organisation, and the organisation as a whole, it is referred to as a holistic case study. However, if the case study refers to one organisation and considers only sub-units or departments within that organisation then it is referred to as an embedded case.

For the purpose of this research, the researcher will be using an embedded case study approach. Only the materials management department, and its associated integration
with the finance department will be examined within the overall organisation, the Southern Health Board.

### 3.3.3 Limitations of Case Study Approach

Despite its advantages many researchers avoid using case studies (Yin, 1989). Yin (1989) identifies the main concern as being a perceived lack of rigour (p21). The results of the case study can be influenced by the personal opinions, prejudices and biases of the researcher. This however need not be a limitation. Firstly, the investigator, when conscience of this bias can work hard to reduce or indeed avoid this limitation. Secondly, bias is no more or no less a limitation in case study as in other recognised research strategies. Such bias can also enter into the conduct of experiments, the designing of questionnaires, or the conducting of historical research (Yin, 1989). Therefore, in all research, not just case studies, careful attention must be given not to bias results. In this study the researcher counteracts this limitation with the use of multiple data collection techniques through triangulation, which is discussed later in this chapter.

A second limitation cited by Yin (1989) states that case studies provide very little basis for scientific generalisation. However the same thing can be said for other research methods, for example experiments. As stated by Hakim (1987):

*The purpose of the case study is not to represent the world, but to represent the case.*

Despite cited limitations, the case study was chosen for this analysis, because it facilitated examination of the wide range of social and cultural diversities, which are evident in the Southern Health Board. It enabled the researcher to study the business process reengineering initiative not as an independent module but as a component of an organisation’s operations.
3.4 Action Research

The inception and development of action research is grounded in the notion that systems could only be understood, and changed, if the members of the system were participants in the inquiry process. This approach originated in a scientific premise that, with participative involvement, the data collected is superior, and the change is more likely to be implemented. Kurt Lewin is credited with the advent of Action Research; it is regarded as one of Lewin's enduring legacies. Even though 'action research' has become a generic term and is used to refer to a broad range of activities and methods; at its core, action research is a research approach that focuses on simultaneous action and research in a participative manner (p34). It is effectively an integration of theory and practice. The research is not primarily about increasing the knowledge in a subject area but is about creating a holistic view of the case without the traditional distinction between academic and practical knowledge. (Coughlan & Brannick, 2001).

In action research the researcher is part of the case being examined, the problem and the eventual solution. This participation and involvement not only gives a unique insight into the case but also creates an ownership of the change that the solution drives. (Bruce, 1992; Gardner, 1974).

The main characteristics of Action Research have been widely published (Argyris et al, 1985; Bargal et al,1992; Gummesson, 2000). The literature relating to Action Research agrees that it is rooted in change. It is cyclical in nature and involves iterative cycles of identifying a problem; planning; acting; and evaluating; ultimately changing the patterns of thinking and action. It is fundamentally about change. It challenges the status quo from the participant's perspective and is concerned with research in action rather than research about action. It is therefore considered to be interactive in nature.

One of the largest distinctions in action research is that it has two goals; it solves the cases problem, and contributes to the knowledge in the subject area. It also, simultaneously, contributes to problem solving, and knowledge generation.
Action research includes all types of data gathering methods but is generally accepted a qualitative in nature. It requires cooperation between the researcher and the practitioners in which each party has the ability to learn from each other. Thus an important element of this type of research is the continuous feedback to all parties involved.

In this research study the researcher had a leadership role in the Business Process Reengineering initiative that is the subject of this case study. The researcher had the role of project manager dedicated solely to the project, with a small, but focused and influential project team, that were assigned on a part time basis to the initiative. The project owner was the Regional Materials Manager for the SHB. The Project Manager was a Business Analyst from the Information and Communication Technology (ICT) Department. The rest of the core team was made up of the Contracts Manager, and the Catalogue Manager. The Supplies Manager in the CUH group, the Equipping Manager, and the Supplies Manager in Kerry General Hospital (KGH) played smaller, but essential roles, as process owners. They attended workshops, and made themselves available, for information retrieval and finally training. This group was supplemented, and supported, by a larger group of employees, who were considered experts in their own module. Finally, a consultancy company, EPC, facilitated the initial current state analysis. They had two consultants assigned to the project for a pre-defined period of time and scope. The project team at the start of the project defined this time and scope. The involvement of the researcher in the project at such a high level enables this action research study to be informed and well balanced, giving a richness that may not have been achieved by a researcher outside the organisation working in retrospect.

3.5 Supplementary Techniques used in this Study

It must be assumed that no one approach to research is sufficient; a variety of approaches add richness to the results (Kaplan et al., 1988). As a means of verifying the results of this study, a process of triangulation is adopted, which include interviews and documentation review.
3.5.1 Triangulation

Triangulation is a common term in qualitative research. It is a nautical metaphor that refers to verification of research findings by reference to more than one source (Hackley, 2003). Triangulation refers to the use of different data collection techniques within one research study in order to verify the results obtained (Saunders et al, 2007). It enables the researcher to get a true fix on the situation by combining different methods of data collection and analysis. A more complete and valid picture is provided by the use of a combination of more than one perspective of a situation (Silverman, 2005; Daymon, 2002).

Triangulation can involve combining quantitative and qualitative methods, in order to check on the accuracy, and validity, of the data gathered by each method. For example, follow up interviews can be used to verify observations made by the researcher; questionnaires maybe used to follow up unstructured interviews (McNeill, 2005). For these reasons, research that uses triangulation to obtain findings is more convincing, as the verification of multiple methods adds to the validity and reliability of those findings (Hackley, 2003).

In addition to adding validity to findings, triangulation is also viewed as a strategy that would enable researchers to rise above personal biases that stem from single methodologies by combining multiple observation, theories, methods, and data sources, (researcher) can hope to overcome the intrinsic bias that comes from single-methods, single-observer, and single-theory studies (Denzin 1989:p307).

Daymon (2002) warns of the misuse of the term triangulation. He warns that the mere mixing of methods is insufficient for triangulation and does not automatically prove validity. Triangulation only takes place when the same phenomenon has been examined in different ways or from different perspectives.

3.5.2 The Research Interviews

Yin (1989) states that the case study is the most appropriate means of researching when a how and why question is being asked about a contemporary set of events over which the investigator has little or no control (p20). As interviewing is a recognised
method of conducting case study research this same advantage is inherent in it. An interview is described as a purposeful discussion between two or more people (Kahn and Cannell, 1957). The research interview is a general term for several types of interview technique designed to gather valid, reliable, and relevant data. The varying types of interview techniques different depending on the degree to which they are structured or unstructured, formal or informal, standard or non-standard.

Standard, structured interviews are generally more explanatory and descriptive in nature. An example of such an interview technique is the questionnaire (Saunders et al, 2007). Questionnaires are composed of closed questions and fixed choice responses and are designed to collect quantitative data (McNeill, 2005).

Semi structured and unstructured interviews are more informal, and are designed to explore in depth the area of research (Saunders et al, 2007). They are more like informal conversations. Questions will more likely be open ended, and designed to collect both factual and attitudinal data (McNeill, 2005). Semi Structured interviews are regarded as exploratory in nature. Examples of this type of interview are face-to-face interviews, group interviews, and focus groups (Saunders et al, 2007).

Semi-structured, informal interviews are used in this research study.

3.5.2.1 Semi-structured Interviews

According to McNeill (2005), interpretivists prefer the use of the unstructured interview, in which the interviewer has a plan of the scope of work to be covered and the direction of the interview, but has the liberty and ability to change, and even abandon altogether, the question focus. This allows the interviewer to follow the interviewee, if the researcher thinks it will generate interesting data. Questions are therefore not standardised. This insures that no two interviewees experience the same interview.

Unstructured and semi structured interviews often use smaller samples than found in large-scale surveys. This allows more time to be spent with the interviewee. This is advantageous as it allows time for a relationship of trust to develop between the
interviewer and the interviewee. This can lead to the generation of more qualitative data about the interviewee's beliefs and attitudes. As the interviewee becomes more comfortable and the discussion becomes more open the interviewee is less likely to be guided by the bias of the interviewer or the interviewer's questions. The interviewer must however maintain some control over the interview to prevent an open discussion to develop in an irrelevant pattern (McNeill, 2005)

3.6 Resources Available to the Researcher

The case study used in this research study consists of a review of selected Materials Management processes at a specific number of locations in the Southern Health Board, followed by a process reengineering of those processes. The processes selected were:

- Contracting
- Purchasing
- Invoice to Payment
- Inventory Control (including, Stores, control, issue and requisition fulfillment)

Four pilot areas were chosen to represent Materials Management in both the Hospital and Community Services areas. The locations included in this analysis were Cork University Hospital (CUH), Kerry General Hospital (KGH), Bantry General Hospital, and Community Care Purchasing department in Denny Street, Tralee. These sites were chosen as representative samples of all SHB sites. CUH is a large acute hospital. KGH is a med sized acute hospital. Bantry General Hospital is a small acute hospital. Denny Street is a Community Care Headquarters for Kerry. Denny Street contains a supplies office for Community Hospitals and Health Centers in the Kerry Region.

The research will include a review of the documentation available from the Business Process Reengineering initiative. This includes project status reports, minutes of workshops and site visits, process maps, among other documentation.
The research will also comprise of semi-structured interviews with personnel involved in these processes. Those selected to be interviewed, comprise of personnel involved in the project and thus involved on a daily basis with the processes. Also included are interviews with personnel who did not participate directly in the project, but on whom the resulting redesigned processes were imposed. This allows for a balanced and accurate account of the project and its affects on the Materials Management Function.

The availability of the above documentation and the willingness of the interviewees to partake in this research are largely due to the fact that the researcher is a current employee of the Health Service Executive – Southern Area and had a lead role in the Business Process Reengineering project. The documentation and the interviews will serve an important function in the triangulation to guard against potential bias of the researcher based on this fact.

3.7 The Interviewees

Three key personnel were interviewed for the purposes of this research. These personnel consist of two employees who spent their entire career in the public service, and one employee who has had a varied career in public and private industry. The interviewees chosen consist of personnel employed at both management and operational levels of the materials management department. All three were very willing participants in the interview process.

The first interviewee, Mr A, is a manager in the Materials Management Department. He has been working in the health service for 30 years all of which were in the materials management function in different locations in Cork and Kerry, and more recently took a national role in the area of supply chain. He worked at every level of the hierarchy, and every element of the supply chain, within the health service. Therefore, he has extensive and very valuable experience relevant to this study. Mr A was a member of the project team for the Current State Analysis and the Business Process Reengineering projects which are examined in this research. He contributed extensively in the workshops relating to the processes he is currently involved in, and gave limited but valuable input in all the other workshops he attended.
The second interviewee, Mr B, is on the operations level in the materials management department. He has extensive experience in the health service and has worked in the SHB for almost 20 years. Mr B had an organising role in the project and contributed in the workshops. His contribution however was more limited than the others interviewed, as he tends to prefer smaller discussion groups or interviews. Even within the interview for this research, Mr B was limiting his conversation to answering the questions directly and did not expand fully. His answers were positive, factual, and short on opinion.

Mr C, the third and final interviewee, is a manager in the materials management department. He, unlike the other two interviewees, had only been working in the health service for 12 months prior to the commencement of the projects. He had a senior management position in the area of supply chain management in the private sector for 5 years prior to joining the Southern Health Board. Mr C participated in all the workshops in relation to the processes he manages directly. His experience in the private sector at a high level brought a fresh perspective to the workshops and interview.

3.8 The Interview Questions

The interviewees were first introduced to the research question:

*How useful is Business Process Reengineering (BPR) in the procurement process in the Southern Health Board?*

It was then intended to have a very short discussion on the interviewee, discussing his/her role in the Materials Management function and his/her involvement with specific processes in the supply chain.

This was to be followed by a discussion on the current state analysis project. The following questions were given as a guide for the conversation:

- What was your participation in the Current State Analysis Project?
- What did you think of the brown paper mapping process, was it useful, productive, clear?
How do you believe the other participants responded to the workshops?
Do you believe the information given at the workshops represented what really was happening on the ground?
What was your reaction to the final report by the facilitators?
How did your colleagues not involved in the project react to the flowcharts?

A discussion on the Business Process Reengineering project was to follow. This discussion was guided by the following questions:

- What was your participation in the process-reengineering project?
- Did the resulting processes reflect a realistic achievable goal for Materials Management?
- How did your colleagues not involved in the project react to the new streamlined processes?
- Did these new processes go far enough in making material changes?
- Were these processes implemented in your area?

3.9 Conclusion

This chapter describes the research methods available and justifies the research strategy used in this study. The results are detailed in later chapters.

Both primary and secondary data collection and the use of quantitative and qualitative methods for analysing the collected data are listed and explained initially. Whilst it is acknowledged that all research uses forms of primary and secondary data collection; and it is difficult to exclusively use quantitative or qualitative methods of analysing that data; this research study will predominately utilise quantitative analysis because of the nature of the research. The research studies a business process redesign project that does not produce much if any numerical data or results.

The chapter proceeds to clarify the merits of the case study approach to research. Single versus multiple case study selection is discussed, as well as holistic case versus embedded case. This research uses a single case study because of the uniqueness of the case. Whilst it is acknowledged that other not for profit organisations or government department have undertaken business process reengineering projects,
none have had the same level of product, multi site, and geographical complexity and diversity as this case.

This research study uses embedded case study method as the primary source of data. Data is examined from the Materials Management Department of the Southern Health Board. The holistic approach would broaden the research scope unnecessarily and distract from the focus of the work.

The limitations of the Case Study approach were also examined earlier in this chapter, in particular the limitations around personal bias and opinions of the researcher. Despite the limitations and the advantage of the researcher being conscious of the possibility of the limitations, the case study was chosen as the most appropriate research method to facilitate the complexity of the research on a business, social, and cultural platform.

The chapter then progresses to a discussion on Action Research. The involvement of the researcher in the project from its inception allows the research to be accurate and well balanced; giving a richness that may not be achieved by a researcher outside the organisation whose involvement would begin after the project is completed.

Finally, some supplementary techniques were examined; these include interviews, document reviews, and triangulation.

Interviews were evaluated and the differences between structured, semi-structured, and unstructured interviews debated. This research relies on semi-structured and unstructured interviews. This is primarily because of the qualitative nature of the research and compounded by the relationship between the researcher and the interviewees. Because the researcher was a colleague of the interviewees for the duration of the project, the interviewees are more comfortable with and agreeable to unstructured and semi structured type of interviews. The relaxed relationship allows a more honest and full response.

In conclusion, the data from the case was gathered through action research, semi-structured interviews as well as through a review of project documentation. This strategy, together with a review of academic literature, fulfils the criteria of sourcing
data from both primary and secondary sources. Qualitative analysis techniques were chosen as a means of accounting for the social ethos of the materials management department and the combined use of interviews and documentation review fulfils the need for external validation through triangulation.

The availability of documentation and the willingness of the interviewees to partake in this research are largely due to the fact that the researcher is a current employee of the Health Service Executive – Southern Area and had a lead role in the Business Process Reengineering project. The documentation and the interviews will serve an important function in the triangulation to guard against potential bias of the researcher and add to the accuracy and richness of the results.

The Business Process Reengineering Project Case Study will be examined in more details in the next chapter. The results and findings of this research study will also be detailed in subsequent chapters.
4 The Case Study

4.1 Introduction

Chapter 4 presents the project used as the case study in this research. It provides a profile of the organisation being studied. It discusses the structure and background of the health boards, since they were established under the Health Act of 1970.

This chapter also describes the structure of the Health Service since the announcement of the new structure, the Health Service Executive, in 2003.

The author then proceeds to outline the structure and the role of the Materials Management Function within the SHB.

Finally, the project undertaken in the SHB, which forms the basis of the case studied, is outlined. The need and objectives for the reengineering project are discussed. The discussion then develops into an examination of the work of the internal reengineering team.

4.2 Background of the Organisation

Under the Health Act 1970, the Health Boards were established, under the auspices of the Department of Health and Children and the Minister for Health and Children. They had statutory responsibility for the delivery of health services in their respective areas.

The following is a list of the Health Boards

- Eastern Regional Health Authority
  - Eastern Area Health Board
  - East Cost Area Health Board
  - South Western Area Health Board
  - Northern Area Health Board
- Midland Health Board
- Mid-Western Health Board
- North Eastern Health Board
The objective of the Southern Health Board (SHB) was to provide health and social services to people in Cork and Kerry. The patient / consumer is at the heart of everything we do and to that end we have adopted Caring for People as our Mission Statement (www.SHB.ie). The day-to-day management of the SHB was carried out by the Senior Executive Team. The Chief Executive Officer implemented the policy of the Board. In addition, the CEO had statutory responsibility to determine the eligibility of individuals for health services, and for the appointment, supervision and remuneration of staff. The service was divided into three programmes namely, Acute Hospital Services, Community Services, and Mental Health/Intellectual Disability Services, each of which was managed by a Programme / General Manager. The other members of the Senior Executive Team were the Director of Public Health, Director of Finance, Director of Support Services, and Director of Strategy and Planning. (www.SHB.ie)

The SHB corporate headquarters was in Aras Slainte, Wilton Rd, Cork. These offices housed Corporate Finance, Information and Communication Technology (ICT), Human Resources (HR), Personnel, Strategy and Planning, Communications departments as well as the office of the CEO. Mental Health and the Acute services all had their own in house administrative centre. The SHB has three acute hospitals. It is also divided into five community service areas (see fig 4.1) namely:

- North Cork – Administrative Centre in Gould house, Mallow
- North Lee – Administrative Centre in Abbey Court House, Cork city
- South Lee – Administrative Centre in Abbey Court House, Cork City
- West Cork – Administrative Centre in Hospital Grounds, Skibbereen
- Kerry – Administrative Centre in Denny St, Tralee

These community services areas are headed up by the Local Health Office Manager and are responsible for all community hospitals and health centres in their specific area.
Fig 4.1 map of the Southern Health Board region
4.2.1 SHB Materials Management Function

The SHB Materials Management function was responsible for the procurement and control of all goods and services for the Southern Health Board Area, and now the HSE – Southern Area. This is done in accordance with EU Public Procurement, State Body Guidelines and internal procedures.

The responsibility for the function lies with the Regional Materials Manager (RMM). The RMM had a strategy group that reports directly to him. This group consists of:

- The Contracts Manager
- The Equipping Manager
- The Supplies Manager – Cork University Hospital (CUH) Group
- The Supplies Manager – Kerry General Hospital
- Materials Management Business Manager
- The Catalogue Manager

The Contracts Department, headed up by the Contracts Manager, is located in the grounds of St Finbarr’s Hospital, Cork. The contracts department prepares, advertises and analyse tenders, and awards contracts. They are responsible for all negotiations with suppliers of contracted items. An estimated 70% of the SHB budget is pay. It is the role of the Materials Management function to manage the 30% non-pay element. Of the 30% non-pay spend it is estimated that only 30% of purchases are from contracts and 70% is off contract buying.

The Equipping department, controlled by the Equipping Manager, is responsible for the sourcing of, and tendering for, all equipment for capital projects. Local purchasing departments are based in the main acute hospitals and psychiatric hospitals, as well as in the Community Services Administrative centres.

The number of employees, in the Materials Management (MM) function is 96. This figure represents the number of people with a reporting line into the Regional Materials Manager (Head of the function). There are an undefined number of employees working on Materials Management and Supply Chain issues that are not directly reporting to, or controlled by, the materials management function. For example, for historical reasons, staff in the Information and Communication
Technology (ICT) department raise their own purchase orders directly with suppliers. Likewise, pharmacy buying is done by the pharmacy departments and not through materials management.

Prior to the announcement of the new health service structure in 2003, the role of the Materials Management (MM) function was to establish and maintain policies and procedures ensuring compliance with national and EU regulations and establish user groups where appropriate. The function also co-ordinated / controlled the health boards tendering and contracting requirements by extending procurement skills to all areas of non-pay expenditure involving the purchase of goods or services. They also engaged in performance monitoring of all key elements of material management. The MM function provided the customer-orientated purchasing and supply service to users. Finally the MM function aimed to develop appropriate stock management practices and procedures.

4.2.2 Post 2003 - Evolution of the HSE

This section describes the structure of the Health service since the announcement of the new Health Service Executive. This structure is still emerging.

Prior to 2003, the Irish health service structures had been in place for more than 30 years. Three reports, the Brennan Report on Financial Management and Control Systems in the Health Services (commissioned by the Department of Finance), the Prospectus Report on the Audit of Structures and Functions of the Irish Healthcare System (commissioned by the Department of Health and Children), and the "National Task Force on Medical Staffing" (Hanly Report), formed the basis of the Government decision to reform the Irish health system in 2003. The individual Health Boards were abolished on the 1 Jan 2005 and were replaced by a consolidated national structure, the Health Service Executive (HSE).

The Health Service Executive (HSE) is responsible for providing Health and Personal Social Services for the Republic of Ireland. The aim of the HSE is to provide world class health services to everyone (Professor Brendan Drumm, Chief Executive Officer, Health Service Executive (www.HSE.ie)).
The establishment of the HSE signified the first ever body charged with managing the health service as a single national entity.

The services provided by the HSE are:

- **Health Services**
  - Primary, Community and Continuing Care
  - National Hospitals Office
  - Population Health

- **Support Services**
  - Human Resources
  - Finance

- **Corporate Services**
  - National Shared Services
  - Information and Communication Technology
  - Procurement
  - Estates

The HSE reports to a Board appointed by the Minister for Health & Children. The services are run through a number of national directorates. The Executive is organised on the basis of three core divisions: National Hospitals Office; Primary, Community and Continuing Care Directorate; and the National Shared Services Centre. The National Hospitals' Office runs the country's 53 acute general hospitals and the community services are run by the Primary, Community & Continuing Care directorate. The hospitals are managed locally through ten local hospital networks that report into the National Hospitals' Office (NHO). Community services are managed locally by Local Health Managers which report into the Primary, Community and Continuing Care directorate (PCCC).

All services not organised on a national basis, are now delivered through one of four administrative areas:

- HSE West
- HSE South
- HSE Dublin Mid-Leinster
- HSE Dublin North East
4.3 Project Drivers & Existing Position of the Organisation

The Financial Information Systems Project (FISP) was a project initiated in the Southern Health Board in 2002 to replace existing and incompatible financial and supply chain systems with one integrated Enterprise Resource Planning (ERP) system. The ERP system chosen by SHB was SAP. The need to introduce one integrated national IT solution became a priority with the establishment of the HSE. This catapulted the FISP from a local, to a national project. What began as a single site SAP implementation in the old Southern Health Board emerged as a pilot implementation, which would be rolled out nationally in the coming years.

In the majority of the health service areas, the existing financial and procurement systems have been in place for up to 12 years. The Health Strategy “Quality and Fairness” (2001), the Value For Money Audit (Deloitte & Touche 2001), the Prospectus Audit of Health Structures (2003), the report of the Commission on Financial Management and Control (2003), collectively and emphatically point to the need for enhanced financial management. Full implementation of the FISP will enable the HSE to specifically achieve the following goals as outlined in the project scope document:

- Implement one system, configured in the same way throughout the Irish Health sector for all agencies, with National, common and standardised business processes.
- Deliver best value, best practice business processes that are structurally independent. This will require the design of National, common, standardised business processes (e.g. transactional processes) that are flexible enough to support any future organisational structure.
- Optimise value for money through increased process efficiency, enabling the elimination of waste and the redeployment of staff to support devolved financial management.
- Deliver improved management information to consultants, clinicians and other Managers to enable them to take greater responsibility for the resources they are using, and facilitating greater transparency and accountability.
- Drive the organisational change required to implement an enhanced financial management, governance, control and accountability culture.
Development of service, speciality and casemix costing to facilitate performance measurement, improved management and greater transparency in the use and allocation of resources

To deliver the financial management framework which underpins the Health Services Reform Programme.

HSE-SA (SHB at the time) began the dual process in 2002 of creating a framework for FISP while also preparing the organisation for the forthcoming project. This process began with the Finance Department and the Materials Management Department developing independent yet parallel strategies. Deloitte and Touche facilitated this process. The Materials Management strategy is outlined in a document referred to as the ‘Blueprint for Enhanced Materials Management (2003-2008)’. This blueprint stressed the development of comprehensive materials management policies and procedures as a prerequisite to the implementation of an ERP.

4.4 Projects that form the basis of the Case Study

The development of the supply chain process and procedures by the Materials Management Function that followed, took the form of two interdependent projects:

1. Current State Analysis Project
2. Business Process Reengineering Project

4.5 Current State Analysis Project

This project consisted of a review of selected Materials Management processes at a specific number of locations in the Southern Health Board. The processes selected were:

Contracting
Purchasing
Invoice to Payment
Inventory Control (including, Stores, control, issue and requisition fulfillment).
Four pilot areas were chosen to represent Materials Management in both the Hospital and Community Services areas. The locations included in this analysis were Cork University Hospital, Tralee General Hospital, Bantry Hospital, and Denny Street in Tralee.

The major deliverable of the project was a documented business process including flow of the business, systems in use, matrix of staff document volume and frequency of flow of the current 'as is' status. The Project was due to be completed by 28/6/02. It was proposed to have five, one full day workshops commencing week beginning 20\(^{th}\) May 2002.

This project consisted of four interdependent sequential phases. These phases were the initiation phase, the requirements phase, the action phase, and the accomplishment phase. Each of which is outlined in detail below. The project began in May 2002 and the final report was presented in July 2002. This consisted of 40-day effective time and two month elapsed time.

4.5.1 Initiation Phase

The initiation phase was allocated 10 working/effective days. This phase consisted of setting up the project team. The project team consisted of two full time members on the project, the project manager and the project coordinator. The remaining members of the team gave their time on a part time basis as the continuance of service was priority throughout the process. These remaining members were a combination of managers and users of the processes. The project organisation is mapped out in fig 4.2 and detailed in table 4.1 below.
fig 4.2 Project Organisational Chart
<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibility</th>
</tr>
</thead>
</table>
| Project Sponsor       | • Has ultimate responsibility and authority for the project  
                          • Resources project appropriately  
                          • Prioritises implementation program  
                          • Leads organisational change  
                          • Establishes success measures  
                          • Approves changes to scope and provides whatever additional resources are required  
                          • Makes key business decisions for the project                                                                 |
| Project Steering      | • Materials Management Group                                                                                                                                 |
| Committee             |                                                                                                                                               |
| Project Manager       | • Develops and tracks the TOR, PID  
                          • Develops and maintains the Project Schedule and its contents  
                          • Tracks and disposes of project issues – Issue Management Owner  
                          • Is responsible for the delivery of the project  
                          • Monitors status of assignments given to members  
                          • Sole responsibility for communication with vendor, and defined external bodies  
                          • Communication Management owner  
                          • Responsible for Project Communication  
                          • Responsible to the Project Sponsor and Project Steering Committee  
                          • Co-ordinates project and Project Steering Committee meetings  
                          • Owner of Project Metrics process  
                          • Manages changes in Assumptions and scope  
                          • Owns resource planning for the project  
                          • Responsible for financial reporting                                                                 |
| Module Leaders        | • Is responsible for the completion of the deliverables for that module  
                          • Monitors status of assignments given to members  
                          • Responsible for Communication to modules  
                          • Responsible for resource planning for that module                                                                 |

*Table 4.1 Project Team Responsibilities*
The setting up of the project team was followed by a project information and communication presentation to Senior Management within the Materials Management Function. This presentation contained an explanation of the purpose of the project. This project was established to develop a current state analysis or a complete ‘as-is’ (current state) picture of the materials management functions processes. The main driver was explained as the development of integrated, standardised processes to facilitate the implementation of a standard system. The scope of the project was outlined in the presentation. The scope was limited to four areas. These areas consisted of an acute hospital, a small general hospital, the contracts department, and a community care area. The Regional Materials Manager (RMM) deemed this representative of all the different types of entities within the health board.

The next part of the presentation dealt with an explanation of how the analysis would be conducted and the tools used. The concept of gaining the required information though workshops was explained. The importance of defining the scope of each workshop and choosing the most appropriate people for the workshops was highlighted. It was also highlighted that an external consultant would facilitate the workshops to eliminate any potential bias. The workshops would chart the current processes and highlight any issues and problems associated with those processes. The deliverable from each workshop would be a charted business process plus an analysis of any gaps identified in that process.

The presentation allowed time for discussion and questions. The project manager and project coordinator delivered this presentation. It was then delivered to each of the key areas involved, namely the staff of the Materials Management Function in the Contracts Department, Cork University Hospital, and Kerry General Hospital.

An initial high-level one-day scoping workshop was held with the project team once all initial communication was complete. This resulted in a 13 page terms of reference/scope document. This document outlined and discussed the project background, the goals and objectives, the deliverables, the project organisation map, project timelines and work plan, project tools used, and a communication plan. The document also highlighted what was regarded as out of scope, the risk associated with the project; as well as listing all related projects and external influences.
This scope document formed the bases for the development of a tender document for the selection of consultants to act as facilitator to the process and ultimately to publish a report on the current state of the processes. This tender document contained background information on SHB, the materials management function, and the project. It outlined the scope of the project briefly. Finally, it invited the consultancy firms to submit proposals. This invitation gave expectations of what the proposal would contain, so that the resulting submissions could be compared easily and analysed fairly, as outlined in the next paragraph. This tender document was forwarded to three pre-selected consultancy firms.

The proposals from the consultancy firms were analysed. The analysis was based on six variables: total cost, number of days on site work, experience of personnel proposed for consultancy, relevant experience in the field required, how requirements are to be met, and proposed methodology. These variables were weighted and totalled. The firm with the highest score was chosen to facilitate the process. The consultancy firm EPC consultancy was chosen.

This completed the Initiation Phase of the project.

4.5.2 Requirements Phase of the Project

The Requirements Phase consisted of developing a full comprehensive scope document on the project, circulating this document for comment, and signing off the scope. This scope document was a fleshing out of the high level scope developed in the initiation phase. It contained all the same elements as the high level document but in considerably more detail. This phase had an elapsed time of two weeks.

4.5.3 Action Phase of the Project

The action phase of this project commenced on May 29th 2002 with a business overview workshop and progressed through four separate process focused workshops as follows:

June 6th. Purchasing workshop

Attendees: One person from purchasing dept and one person from accounts payable in Bantry General Hospital
One person from purchasing dept and one person from accounts payable in Tralee General Hospital
One person from purchasing dept and one person from accounts payable in Cork University Hospital
Project Manager, Management Services
Two Consultants from EPC consultancy company
There was no representative from Regional Materials Management office in Eye, Ear and Throat

The purchasing workshop was designed to capture the purchase to pay process. Brown paper mapping was used throughout the workshop. Brown paper mapping is a structured way of mapping and representing a process. It is used to represent As-Is (actual process in use today), Should-be (according to best practice), Could-be (optional methods), To-be (process to be implemented). In this case it was used to represent the As-Is, the current state. The objective of brown paper mapping is to create a pictorial representation of the process, detailing all steps whether system, manual, mandatory, or optional in nature.

In this case, a roll of brown paper was stuck up around the room initially. The facilitator of the workshop started the process by asking probing questions, as he was receiving the answers he was developing a map of the process. Each of the steps of the map was represented by a sticker such as a post-it with textual information about the step on the post-it. These post-its were arranged on the brown paper working from left to right. Arrows and connecting lines from post-it to post-it were drawn on the brown paper. As the conversation and discussion progressed, these post-its were frequently moved until all participants were happy that the visual map demonstrated the actual flow of the process.

The map was broken up into four sections; namely, Requirements, Purchase Order (PO) Placement, Receipts and Payments. The requirements section covered all the possible areas a requirement could come from and the forms these requests could take. Basically covering the initiation of a request and Purchase Order. Purchase Order Placement covered all the possible ways that a Purchase Order could be created, authorised, and processed, using manual or Aran system. The Aran system is the purchase order system in use in the SHB for the last ten years. This system is only
in use in limited areas such as CUH and headquarters. Receipts section delved into all the possible receiving point within the scoped area, and any checks, authorisations and validations that are performed against a manual or Aran system. The Payments section related to the Accounts Payable (AP) function and again delved into any checks, authorisations and validations that are performed against a manual or Aran system.

The representatives from CUH, TGH and BGH were very forthcoming with facts. EPC adopted a friendly, but probing, style and maintained the momentum and enthusiasm throughout.

When all participants agreed that the visual map represented the actual process, the contents of the brown paper map were enter in Microsoft Visio (MS Visio) as a flowchart. Microsoft Visio (MS Visio) is diagramming software for Microsoft Windows. These MS Visio maps were then circulated to the workshop attendees for verification. The intention was that the attendees could discuss with their colleagues and verify their input.

June 7th. Stock control workshop

Attendees: Senior Supplies Officer and Stores officer from Bantry Hospital
Senior Supplies Officer and Stores officer from Tralee Hospital
Purchasing Officer and Stores Officer from Cork University Hospital
Project Manager from Management Services Department
Two consultants from EPC
There was no representative from Regional Materials Management office in Eye, Ear and Throat

The inventory workshop was broken into Receiving, Delivery/Issue, and Stock control. Again the same brown paper mapping technique was used. The Receiving section reaffirmed the receiving points identified in the purchasing workshop, and delved further into the actual process of receiving in each area. Delivery/Issue captured the information relating to issuing goods to the wards in the hospital or delivering them to areas outside the hospital complexes. Stock Control delved into cycle counting, physical inventory, the Aran system and the Catalogue. Once all participants agreed that the visual map represented the actual process, the contents of
the brown paper map were enter in Microsoft Visio (MS Visio) as a flowchart. These MS Visio maps were then circulated to the workshop attendees for verification.

June 18th. Contracting workshop

Attendees: Contracts Manager, Equipping Manager, and two Contracts officers from Central Contracts
Project Manager from the Management Services Department
two consultants from EPC
Regional Materials Manager and Catalogue Manager from the Regional Materials Management office in Eye, Ear and Throat

The purchasing workshop was designed to capture the process used in Central Contracts. Again brownpaper mapping was used. The equipping manager led the workshop initially with a detailed run through of the contracting elements of equipping. The Contracts Manager then took over the commentary and detailed the process for the other areas, with valuable input from the contracts officers.

The workshop was very positive despite obvious frustration related to the systems or lack thereof. Once all participants agreed that the visual map represented the actual process, the contents of the brown paper map were enter in Microsoft Visio (MS Visio) as a flowchart. These MS Visio maps were then circulated to the workshop attendees for verification.

June 18th. Denny Street workshop

Attendees: Two administrative Officers from Denny Street, Tralee
two consultants from EPC
Regional Materials Manager and the Catalogue Manager
Project Manager from Management Services

This session filled in the gaps from the Purchasing and Inventory workshops regarding Community Care. It was a short but worthwhile exercise and helped to answer some questions regarding contracts from the customers’ viewpoint.

Once all participants agreed that the visual map represented the actual process, the contents of the brown paper map were enter in Microsoft Visio (MS Visio) as a
flowchart. As with all the other workshops the workflows that were developed from the workshops were circulated to the attendees for verification.

The Action Phase was completed on schedule at the end of June 2002.

4.5.4 Accomplishment Phase & Conclusion of the Project

The Accomplishment Phase was a short phase that consisted of the amalgamation of all information into a single document or report. This document was presented to the project team by EPC consultancy with commentary and discussion. It contained the MS Visio maps developed from the workshops, along with a commentary of the observations and findings of the facilitators. The document highlighted that the existing structure, processes and practices delivered an acceptable service to the customers. It emphasised that the existing processes do not appear to be disadvantageous to the ongoing operation of the business, despite the strong dependency in some areas on key individuals and local knowledge. The operating processes are undocumented and are interpreted differently in the varying locations casing inconsistency of operating performance.

Some of the key observations include the high fragmentation of processes and the dependence on manual intervention to provide integration between the functional elements of the supply chain. In some cases there is a lack of appreciation for a functional areas impact on upstream or downstream operations. The bigger picture of the whole supply chain is not well articulated. There is a lack of Information Technology within the supply chain, and where an IT system is available it is out of date and inadequate. The document went on to highlight issues in each of the functional areas in detail. This document was concluded with recommendations for improvement and how this improvement could be implemented. The recommendation strongly indicated the need for a business process reengineering initiative and warned against piece meal change, as it was likely to add to the lack of integration and inconsistency rather than solve it.

This completed the accomplishment Phase. The completion of the accomplishment phase signalled the end of the current state analysis project.
4.6 Business Process Reengineering Project

Once the Current State Analysis was complete and the Materials Management function and Finance Function had decided on a strategy for the future, it was an appropriate time for the Materials Management Function to work on the recommendations from the Current State Analysis project and start a business process reengineering initiative.

The position of the function in relation to this and related projects is represented diagrammatically in Fig 4.3

Fig 4.3 Projects Outline
The primary purpose of this project was to develop policies and procedures to standardise work carried out by the Materials Management Function. This was viewed as an essential prerequisite to implementing an ERP system and introducing e-Procurement. The establishment of standardised policies and procedures would improve efficiency through a more integrated approach to procurement and deliver improved service levels to buyers, suppliers and users involved with procurement. The project would result in minimising the transaction costs associated with procurement through the standardisation, streamlining of the procurement process and optimise inventory levels through the adoption of efficient procurement practices. It would also maximise value for money by enhancing the buying power of the SHB and make effective use of human resources in the procurement process.

The two primary goals of the project were to develop policies and procedures for each area of Materials Management, and to initiate the implementation of these policies and procedures. The development of the policies and procedures included the development and documentation of procedures for Contracting, Purchasing, Inventory Management, Accounts, Supplier Management, Management Reporting, and Customer service. The initiation of the implementation of these procedures consisted of training the business experts in each area on the policies and procedures and advising them on how best to implement the changes.

Any element of the project that is to be undertaken directly by the National Procurement Strategy or any element of the project that is to be undertaken directly by FISP was deemed out of scope of the project. Training was largely out of scope. The project included training the business expert from each module on the Policies and procedures. It was then the responsibility of the Quality Assurance officer and the Business expert in each area to train their area and ensure compliance.

The project began in July 2003 and was completed in Feb 2004. It was a 4-phase project, namely the Initiation Phase, the Definition phase, the Documentation phase, and the Integration and Signoff Phase.
4.6.1 Initiation Phase

The project initiation phase as with the previous project consists of the development and agreement of the scope and the project plan. This phase also includes the creation of the project team and the setting out of the roles and responsibilities of this team. Table 4.2 sets out the roles and responsibilities for the project.

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibility</th>
<th>Individual</th>
</tr>
</thead>
</table>
| Project Sponsor               | • Has ultimate authority over, and is responsible for, the project  
                                 • Provide strategic leadership to this project  
                                 • Ensure the provision of resources for this project  
                                 • Approve changes to the scope and provide whatever resources those changes require  
                                 • Ensure the alignment of this project and its deliverables with SHB strategy  
                                 • Review and approval of project deliverables                                                                                                          | Director of Support Services      |
| Project Owner                 | • Ensure that project resources are available  
                                 • Review and approve deliverables  
                                 • Help resolve project issues  
                                 • Approve changes to the scope and provide whatever resources those changes require  
                                 • Ensure alignment of this project with its deliverables  
                                 • Ensure the future use, and re-use, of this project’s deliverables                                                                                   | Regional Materials Manager        |
| Chief Business Process Expert | • Provide expert source information for the project from a business point of view  
                                 • Represent the business  
                                 • Ensure compilation, analysis and documentation of policies and procedures  
                                 • Author of the project initiation document  
                                 • Provide a link between the different sections of MM  
                                 • Develop and undertake training on new procedures  
                                 • Responsible for Change management                                                                                                                        | Contracts Manager                 |
| Business Process Expert       | • Provide expert source information for the project from a business point of view  
                                 • Represent the business  
                                 • Compile, analyse and document policies and procedures  
                                 • Undertake training on new procedures                                                                                                                      | An expert from each MM area       |
| Project Manager               | • Manage the delivery and co-ordination of project  
                                 • Compile, analyse and document policies and procedures  
                                 • Provide link with related projects                                                                                                                                 | Project Manager from the Management Service Dept |

Table 4.2 Roles and Responsibilities
4.6.2 Definition Phase

It was decided that the business processes would be designed and documented using a hierarchy of Function, overview business process, business process, and standard operating procedure, as per fig 4.4

The Overview Business Processes are listed in the Materials Management Strategy Document as Demand Planning, Forecasting and Sourcing; Contracting; Purchase Requisition to Payment; Inventory Management; Supplier Management; Management Reporting and QA; Organisational Management and Development. This is shown diagrammatically in Fig 4.5
For each of these Overview Business Processes, Business processes and corresponding Standard Operating Procedures would be developed. The Business Process (BP) would take the form of a flow chart designed on Microsoft Visio, with the textual description outlined in the Standard Operating Procedure (SOP) in Microsoft word. In this phase of the project a template Business process and a template Standard Operating Procedure was designed.

The template Business Process consists of three sections. The first section is the trigger that sets the business process flow in motion. The Action phase represents what steps are taken in the business process. The output phase sets out the end point or the integration point from this process flow to another flowchart. The symbols used are Microsoft Visio standard. The template is demonstrated in fig 4.6
The SOP template is a 9-page word document designed to be used as a template for the creation of an SOP to serve as a textual guide to a corresponding BP. This document contains:

- textual description of the BP inputs, outputs, and the intervening steps
- details of the roles and responsibilities of the individuals involved in the process.
- a document approval and version control section. (This ensures that the reader is confident that s/he is reading the most up to date approved version of the document).
4.6.3 Documentation Phase

The documentation phase was scheduled to last six months. It was named the documentation phase to represent the deliverable of this phase, which are the final documented reengineered processes. This phase would have been more aptly defined as the reengineering phase or the action phase.

Purchasing

The objective of this section of the project was to reengineer the procedures in the sections shaded in fig 4.7. The workshop was to bring together information from the current state analysis, the materials management strategy, and knowledge of the business experts. This combined information would be developed to create reengineered business processes.

fig 4.7 Areas to be Reengineered

In relation to Purchasing: Requisition, Approval and Order placement the findings of the current state analysis stated that the processes were cumbersome, manually intensive, fraught with error potential, expensive to operate, seriously lacking in solid usable information, loosely controlled, supported by ineffective tools and operated by very enthusiastic, creative and service focused purchasing resources.
These findings acted as the drivers in the undertaking to reengineer and document the Purchasing (Requisition, Approval and Order placement) procedures. The amount of reengineering was limited until such time as a decision was made to implement an ERP system.

The As-Is final report also incorporated recommendations for improvement. The As-Is Recommendations for Purchasing (Requisition, Approval and Order placement) were used as guidelines in the reengineering workshops.

In summary, in the workshop the As-Is Findings were used as the drivers, the As-Is Recommendations were used as a guide, the As-Is maps were used as a starting point, and the Vision and Goals from the MM strategy were used as a high level goal.

The senior supplies officer in KGH and the senior supplies officer in CUH attended the workshop. Also in attendance was a supplies officer from CUH who works exclusively in purchasing. The workshop facilitator (the project manager) had 4 large flip charts arranged around a projector. The projector showed the As-Is maps. The 4 large flip charts were used to record issues, gaps, streamline, roles and responsibilities respectively. The workshop attendees examined the requisitioning, approval and purchase order placement ‘As-Is’ map. They picked out areas that could be streamlined, gaps that were apparent and issues that could be identified, as well as noting relevant definitions of roles and responsibilities. These observations were noted on the respective flip chart.

Following the workshop a rough draft of a ‘to-be’ process was drawn up from the observations made at the workshop. This draft was produced on MS Visio. A copy of this draft along with minutes from the workshop listing all the issues, gaps, streamlining, and roles and responsibilities were sent to the attendees for comment. The attendees were given three weeks to review and discuss with their colleagues, both those that attended the workshop and those that did not, and to revert with any changes. The final draft with all comments and changes were then sent out to the attendees.
The result was a streamlined, standard, workable, agreed process. This process is documented graphically on MS Visio and an equivalent textual standard operating procedure was designed to complement the flowchart as outlined in the definition phase of the project.

Inventory Management

The objective of this section of the project was to reengineer the procedures in fig 4.8. As with the purchasing workshop, the inventory management workshop was to bring together information from the current state analysis, the materials management strategy, and knowledge of the business experts. This combined information would be developed to create reengineered business processes.

![Material Management Diagram](image)

Fig 4.8 Procedures to be reengineered

The first workshop looked specifically at receiving goods from suppliers, storage of goods received, and issuing of goods from the stores to end users. Three supplies officers attended the workshop from KGH and three from CUH. The contracts manager also attended the workshop. The six supplies officers from the two hospitals were personnel who worked directly on the processes on the ground. It was thought at the purchasing workshop that the attendees were management and were more idealistic than the ‘do -ers’. Those do-ers that did attend were sometimes slow to give a realistic view and express their expectations for fear of appearing negative or uncooperative in front of their manager. The manager wanted to be there to ensure all issues were covered. Once the situation was explained the nominations for the
inventory workshop represented those actually involved with the process on a day-to-day basis.

The workshop was run in the same manner as the purchasing workshop. The projector showed the as-is maps, four flip charts were arranged around it. The four large flip charts were used to record issues, gaps, streamline, roles and responsibilities respectively. The workshop attendees examined the receiving, storing and issuing ‘As-Is’ maps. Areas that could be streamlined, gaps and issues were identified, as well as noting relevant roles and responsibilities.

The workshop consisted of a series of relevant, useful and knowledgeable debates. This reflected the appropriate mix of attendees. A lot of questions, opinions, issues and confusions were addressed in a short period of time during the workshop. Therefore, it was decided to create a rough draft ‘to-be’ procedure initially. This draft was produced on MS Visio. A copy of this draft along with minutes from the workshop listing all the Issues, Gaps, Streamlining, and Roles and Responsibilities were sent to the attendees for comment. It was then the responsibility of each attendee to verify, change, and to reintroduce any issues not addressed or not fully reflected. The result was a streamlined, standard, workable, agreed process. This process is documented graphically on MS Visio and an equivalent textual Standard Operating Procedure was designed to complement the flowchart as outlined in the Definition Phase of the project. As with the purchasing area the reengineered maps are more streamlined, easier to interpret, and standard than the original maps. They are further valuable in that they are supplemented with documented standard operating procedures.

A second workshop was held to discuss the creation of an Inventory Management Policy Document. It was decided that this document should include discussion and policy on the nature of the business, structures, stock/inventory control, stock taking, key performance indicators (KPIs), Vendor management, and Service level agreements (SLA). The workshop resulted in a comprehensive 9-page policy document outlining the inventory management policy.
Accounts/Payments

The objective of this section of the project was to reengineer the procedures in the Process Accounts Payable and the Disburse Supplier Payments boxes in fig 4.9. As with the purchasing workshop and the inventory management workshop, the Accounts/Payments workshop was to bring together information from the current state analysis, the materials management strategy, and knowledge of the business experts. This combined information would be developed to create reengineered business processes.

Again the workshop was run in the same manner as the previous workshops. The projector showed the as-is maps, four flip charts were arranged around it. The 4 large flip charts were used to record Issues, Gaps, Streamline, Roles and Responsibilities respectively. The workshop attendees examined the ‘As-Is’ maps. Areas that could be streamlined, gaps and issues were identified, as well as noting relevant roles and responsibilities.

The workshop was well attended. There were two participants that work directly with the processes from each of CUH, KGH, BGH, and Denny Street.

As with the other workshops, a rough draft of a ‘to-be’ process was subsequently drawn up from the observations made at the workshop. This draft was produced on MS Visio. A copy of this draft along with minutes from the workshop listing all the
Issues, Gaps, Streamlining, and Roles and Responsibilities were sent to the attendees for comment. The attendees were given time to review and discuss with their colleagues, both those that attended the workshop and those that did not, and to revert with any changes. The final draft with all comments and changes were then sent out to the attendees.

The result was a streamlined, standard, workable, agreed process. This process is documented graphically on MS Visio and an equivalent textual Standard Operating Procedure was designed to complement the flowchart as outlined in the Definition Phase of the project.

Contracting

The objective of this section of the project was to reengineer the procedures in the in fig 4.10. As with the previous workshops, the contracts workshop was to bring together information from the current state analysis, the materials management strategy, and knowledge of the business experts. This combined information would be developed to create reengineered business processes.

![MATERIALS MANAGEMENT Diagram](image)

*Fig 4.10 Procedures to be Reengineered*

Again, the workshop was run in the same manner as the previous workshops. The projector showed the as-is maps, four flip charts were arranges around it. The four
large flip charts were used to record issues, gaps, streamline, roles and responsibilities respectively. The workshop attendees examined the ‘As-Is’ maps. Areas that could be streamlined, gaps and issues were identified, as well as noting relevant roles and responsibilities.

This workshop was probably the shortest, easiest to run, and had least debate. This is due to the fact that contracts department is a centralised function with an already clear as-is picture.

As with the other workshops, the result was a streamlined, standard, workable, agreed process. This process is documented graphically on MS Visio and an equivalent textual Standard Operating Procedure was designed to complement the flowchart as outlined in the Definition Phase of the project.
4.6.4 Integration and Sign off Phase

The integration and sign off phase of the project was planned for January 2004. The objective of this phase was for the owner of each SOP to introduce and explain the SOP to the whole group. The group could then critically evaluate the SOP and ultimately examine the integration between the SOPs. This is where the group had to discuss the concept of an integrated supply chain rather than their own individual silos in isolation.

This was achieved through an integration workshop. Everyone involved in the workshops to date were invited to this workshop. The Regional Materials Manager opened the workshop with an address. He acknowledged the hard work and dedication of all involved and the commitment to radical and sustained improvement.

This followed with the owner of each SOP giving a presentation to the group on the SOP dedicated to their area. A questions and answers session followed which concentrated on identifying any issues that may have been lost between one SOP and another. It was acknowledged that each Business Process input had a relevant output from a previous SOP or from a legitimate trigger, and each Business Process output terminated the process or was a relevant input trigger for a subsequent Business Process.

Following the workshop, all Business processes and Standard Operating Procedures were printed and signed off by the owner and the Regional Materials Manager.

This concluded the scope of the project. The process of implementing and using the SOPs was to follow.
4.7 Conclusion

This chapter describes in detail the project used as the case study in this research. Firstly a profile of the organisation being studied is provided, discussing initially the structure and background of the health boards since they were established under the Health Act of 1970. The discussion then develops into a description of the structure of the Health Service since the announcement of the new Health Service Executive in 2003. The individual Health Boards were abolished on the 1 Jan 2005 and were replaced by a consolidated national structure, the Health Service Executive (HSE).

This chapter then proceeds to outline the structure and the role of the Materials Management Function within the SHB.

Finally, the project undertaken in the SHB that forms the basis of the case studied is outlined. This chapter comprehensively outlines the two interdependent projects, namely the current state analysis project and the business process-reengineering project, which make up the case study. The origins, drivers, objectives, and scope of the projects are listed. This is followed up by a detailed description of the workings of the project team including a detailed report of the workshops that were run, the mapping that was used, and the results of the workshop.

Chapter 5 sets out the findings of the research. This will be achieved through analysis of the project as outlined in this chapter and supplemented with opinions from interviews carried out with staff involved in the project and those not involved in the project but involved in the processes.
5 Analysis of the Results

5.1 Introduction

This chapter sets out the analysis of the research. This is achieved through analysis of the project as outlined in chapter 4 and supplemented with opinions from interviews carried out with staff involved in the project and those not involved in the project but involved in the processes.

The results of the project could be analysed in one of three ways:

- Each current state analysis map could be described and then compared with the corresponding reengineered map.
- One significant current state analysis map could be described and then compared with its corresponding reengineered map. An explanation for why it is the most significant would be given; and a in-depth description of why and how this map is representative of what happened in the other maps.
- Thirdly, one group of maps could be described and compared with their corresponding reengineered maps. As with the previous option an explanation for why it is the most significant would be given; and a in-depth description of why and how these group of maps is representative of what happened in the other maps.

While the first option would be the most comprehensive analysis, it would be repetitive and the volume of written analysis would distract from the value of the results. Conversely, the second option would allow a very detailed discussion and analysis of that map but one map from one section of the supply chain would not be comprehensive enough to demonstrate the extent of the change in the whole supply chain. Option three is the most practical to utilise. It would eliminate the repetitive nature of narrating all maps and would still be large enough to be representative of the project. For the purposes of this research study, this option will be presented.

This chapter will analyse the three Purchasing Process maps developed by the current state analysis and the three corresponding maps developed by the business process reengineering initiative. This is a narrative of six maps in total from the purchasing
process. These maps include requisition, approval, local contracts, and order placement. This narrative will be followed by an analysis of the changes made by the reengineering initiative. This analysis will then be more briefly compared to the changes made in the other areas of the supply chain, such as inventory control, payments, and contracts. Comparisons will be drawn on the type of changes that happened in the purchases processes to those that occurred in the other processes; and will demonstrate how the changes in the purchasing maps is representative of the changes that occurred throughout the supply chain.

The purchasing (requisition, approval, and order placement) processes were chosen as the processes to be used in this research because they had the largest potential for change and reengineering. Of all the areas within the supply chain the current state maps of the purchasing processes were most complicated visually and had most exceptions to the rule. Other areas such as contracts, where a small group of employees within one physical location have complete control of their process, did not have the same level of significant changes as those found in the purchasing processes. The same applies to inventory control and payments to a lesser but still noteworthy degree.

It was also going to be the most difficult to implement a change within the purchasing processes. This is because of the large number of people involved in the processes that are not under the control of the purchasing department. All requisitioners are outside the purchasing department and come from a wide variety of departments from wards in big hospitals, to small health centres, to administrative departments. Therefore any change that was to be implemented had to be firstly representative of this diverse group, secondly communicated correctly to this varied group, and thirdly accepted and utilised by this group. Also downstream in the purchasing processes there is a stronger integration between different departments than in the other processes. Purchasing processes integrate with payment, inventory control, and contracts processes.
5.2 Purchasing (Requisition, Approval & Order placement) Processes

The Purchasing Processes include requisition, approval, local contracts, and order placement. This is represented in three Purchasing Process maps developed by the current state analysis and the three corresponding maps developed by the business process reengineering initiative.

As described in detail in chapter 4, a consultancy firm came on site to undertake a current state analysis with Materials Management. Their findings in relation to Purchasing (Requisition, Approval and Order placement) described the processes as cumbersome, manually intensive, and fraught with error potential, expensive to operate, seriously lacking in solid usable information, loosely controlled, supported by ineffective tools and, operated by very enthusiastic, creative and service focused purchasing resources.

These findings act as drivers for the reengineering and documenting of the Purchasing (Requisition, Approval and Order placement) procedures.

The current state analysis final report also incorporated recommendations for improvement. The recommendations for Purchasing (Requisition, Approval and Order placement) are:

- Document and implement operating procedures for all processes to achieve consistency of execution and control
- Define critical points of measurement and control and implement solid simple controls to measure process performance
- Document a strategic operations plan linked to tactical plans for all sites with clearly defined deliverables and performance expectations with agreed ownership for the delivery of outcomes
- Reengineer the core processes to simplify the execution of necessary activities, eliminating all cost adding activities.
- Review the existing SHB purchasing policy and ensure that is widely communicated to all key personnel
- Standardise where practical all methods of requisitioning and Purchase order placement
• Redefine the accountabilities of the Purchasing, Contracting and Stores functions to achieve clarity of roles and ensure focus is placed on ownership of results and not just the execution of tasks

• Define and document an effective operations review and control process for the function in all locations with agreed Key Performance Indicators (KPI’s)

• Define the functions Goals and time phased objectives providing clarity of ownership and accountability for performance delivery.

• Accelerate the rationalization of the Product catalogue and implement controls to inhibit its expansion.

• The reduction of the Supply base is currently in process and we would advocate an acceleration of this rationalization with the development and implementation of an SHB Approved Vendor List (AVL) with critical control processes to inhibit its growth.

• Define and implement a comprehensive Supply base management process with accountability for Supplier evaluation, and structured and time phased performance reviews.

• Immediately eliminate / prohibit the use of miscellaneous codes for the purchase of products.

In the reengineering workshop the current state analysis findings were used as the drivers, the current state analysis recommendations used as a guide, the current state analysis maps were used as a starting point and the Vision and Goals from the Material Management strategy as the high level goal.

The result of the reengineering and documenting exercise is a Standard Operating Procedure (SOP) document. This exercise satisfied a number of the As-Is recommendations.
5.2.1 The Requisition and Requisition Approval Process

Figure 5.1 represents the map that was designed in the current state analysis project to portray the as-is, current state, of the requisition to placing of the purchase order in the SHB area. Figure 5.2 represents the corresponding reengineered process that resulted from the business process-reengineering project.

The requisitions can be broken into three streams, requisitions for stock items, requisitions for non-stock items, and stock reorder list.

Stock items refer to items that would normally have an unallocated quantity held in stores for use by any requisitioner. Examples of these items would be bandages, linen, towels, soaps, stationary, consumables etc. These items would be owned by central stores and subject to inventory management by central stores. They would be allocated to the requisitioner as requested.

Non-stock items refer to items where a reserve is not normally held by central store. This would refer to high cost, low volume stock, or customised stock. Examples of which are customised wheelchairs.

Each ward or department in a hospital normally uses stock reorder list. A stock reorder list is a pre-printed list of stock items that a ward in a hospital would normally order on a daily, weekly or monthly basis from the stores. The list would contain list of food items, bandages, linen etc. The ward sister would put quantity of what was needed next to each item for delivery the following day. For example the ward sister may order milk on a daily basis, incontinence products on a weekly basis, bandages on a monthly basis. The frequency and volume would depend on availability of storage space in the ward.

Figures 5.1 and 5.2 follow the flow of the requisitions for stock, non-stock, and stock reorder list for the pre reengineered and the reengineered processes respectively, from when they are requested to placing the purchase order.
Fig 5.1 Process map (SHB Requisition to Purchase). This represents the first documentation of the process involved in requisition and requisition approval prior to the reengineering process.
Fig 1: Requisitioning and Requisition Approval

1. Trigger

Type of Requisition
- Preprinted Requisition
- Verbal Requests: Emergency only
- Standard Requisition
- Letter of Need
- Stock Reorder List

Method of Communication
- Fax
- Post
- Email

Fig 2

2. Action Phase

Determine Order type i.e.
- Stock, Non-Stock
- On Contract
- liaise with Central Contracts
- Stock Items

Enter details on requisition log
- Supervisor Review Check-list

Mark as rejected on requisition log

Request Accepted

Send with review
check list back to requisitioner

No

Negotiate for interim Supply

Contract price Agreed

Attempt to get at same contract price from supplier

Highlight to Contract Department

Yes

Send requisition to stores

On Contract

Fig 3

Fig 3

Yes

Contract Valid

Discretionary Spend

Local Contract

Yes

Inventory Mgt Process

3. Output Phase

Fig 5.2 Reengineered Requisitioning and Requisition Approval Process Map. This represents the Requisition and Requisition approval process after the reengineering processes was completed. This was the process agreed by the materials management function to represent the standard process to be used by all departments when purchasing products or services.
5.2.2 Evaluation of the Process - Changes from the Current State to the Reengineered map

There is a visible difference in the presentation of the process in each map. The reengineered map is easier to read, visually uncluttered, and appears more orderly. This streamlined look is not just visual, it is not merely a tidying up of the map; there are a number of significant practical changes between the current state map and the reengineered map. The most significant changes on the ground, which are evident on the maps, are described below.

There are two types of requisition: requisition for supplies to issue stock to end users, and stock reorder list which come from stores to Purchasing department to replenish stock items. In the first map there are 14 boxes representing the possible sources of a requisition, one of which is named 'General'. During the reengineering brainstorming workshops, it was decided that there was no advantage in listing all possible sources when there was a catch all box for general. It was agreed, that all possible sources could be represented by one box termed 'Requisitioner'. The Requisitioner is described as any department, branch, hospital, care centre etc that is internal to the health service.

The requisitioner sends the requisition to the Materials Management Department in the form of a Standard requisition (this is a hand printed document from a requisition book), pre-printed Requisition (this is a pre-printed form), a verbal request (this is only in emergency and must be followed by a written request), Letter of Need (this is a request for non stock items), Stock reorder list, or New Item Request (a pre-printed form referred to as FORM 10)

The method of communication of these requisitions has been rationalised in the reengineered process. Requisitions must be sent by fax, post or e-mail to the inventory control or purchasing sections as appropriate. Requisitions are no longer accepted by telephone or verbal request, as was the case in the current state map, except in emergency situation. Because of the nature of the industry, it is impossible to eliminate the possibility of emergency requests. This option is to be treated with care so as to avoid slipping into the old way of doing things where verbal requests
were becoming the norm. It was acknowledged that the change towards not accepting verbal requests would represent a significant change for the requisitioner. The requisitioner in some areas was using verbal requests as their primary method of communication and would see it as an extra administrative, and in some cases unnecessary, duty to change. It was also acknowledged that it would initially cause some backlogs until the requisitioner got accustomed to the process. The purchasing departments accepted the problems that may arise initially with the view to the advantages of a more streamlined, documented process developing with time.

Despite this apparent disadvantage to the requisitioner, the new communication policy also provides an advantage to the requisitioner. As is evident in the reengineered map there is the introduction of a requisition log. This is something that was initiated in one area and was adopted as standard in the reengineered process. All requisitions would now be logged. Once the decision was made to accept the requisition and convert it to a purchase order, or alternatively the requisition was rejected, it would be noted on the log and the requisitioner would be informed of the decision. This is something that was not done in the current state process. There are two advantages to this change. Firstly the advantage to the requisitioner, in the old system once a requisitioner sent a request for an item s/he only became aware that the requisition was rejected when his product did not arrive, or when s/he contacted the purchasing department to check when his product would be delivered. This created more work for the purchasing departments in fielding calls from requisitioners. The new approach took a more proactive approach to communication. Secondly, there was an advantage to the purchasing department, they could check the requisition log for the status of the requisition and they would be able to see if the requisitioner continually requested a product or products that were previously rejected and check the reason for its rejection. In the old system, a requisition could be rejected for example due to its unnecessary need, or lack of value for money. The requisitioner could simply re submit the request after a period of time in the hope that a different purchaser would not recognise the original reason for rejection and convert the requisition to a purchase order. The requisition log will now eliminate this inconsistency.
Another significant standardisation achieved in the reengineered map is evident in the treatment of the process when a computerised system is in use and when there is no system in use. The Aran system is a purchase order system only available in the larger hospitals, ie CUH and KGH. In the initial documentation of the process fig 5.1 the map highlights the process for when a system is in use and a different process for when there is no system in use. The reengineered map, fig 5.2 does not differentiate. The process is the same whether a system is in use or not in use; this highlights the importance of getting the process correct and eliminates any changes that may occur due to the tools used. The system is regarded simply as a tool and not the driver in the process. The advantage of this is that the materials management function would have a standard streamlined process that would not have to change even with the introduction of a new system. The intricacies of the system could be shown in a more detailed work instruction document. This should also serve as an advantage when implementing a new ERP system. The process would be the driver, rather than the software driving the shape of the process.

Standardisation is also evident in the elimination of identifying specific locations in the reengineered map. The initial map in fig 5.1 mentions areas such as CUH, Denny street etc. The streamlined map in fig 5.2 identifies that the process should not and would not be location dependant.

There is also a noteworthy change in the treatment of invalid contracts for non-stock item. If the product is on contract, the contract is checked for validity. If valid, the procurer places the order. But if it is on contract and the contract is not valid, the procurer highlights it to the contracts department. Then if the contract department are agreeable, the procurer attempts to get the contract price from the supplier. If they agree the same contract price the procurer places the order. If they do not agree the same contract price the procurer negotiates for an interim supply. In the original map if the contract is invalid the purchasing department dealt with the supplier immediately and informed the contracts dept retrospectively. The significance of this is that the contract may have been made invalid for a specific reason by the contracts department that the purchasing department may not have been aware of; or the supplier may try to get more favourable terms from the purchasing department for themselves. The communication with the contracts department at the earlier stage...
avoids any inconsistent dealings with suppliers and in some cases lessens the load for the purchasing department as the contracts department may already be in negotiations with the supplier.

The changes in the requisitioning and requisition approval process are the most significant of all processes and possibly the most difficult to implement. This is due to the fact that the requisitioner is not within the materials management function. There are a large number of people involved in the processes that are not under the control of the purchasing department. All requisitioners are outside the purchasing department and come from a wide variety of departments from wards in big hospitals, to small health centres, to administrative departments. Therefore, any change that was to be implemented, had to be firstly appropriate for everyone in this diverse group, secondly communicated correctly to this varied group, and thirdly accepted and utilised by this group. All other processes; ie purchase order placement, inventory control, payments, and contracts, have their trigger for the process originating within the materials management function and therefore the change can be implemented internally.

5.2.3 The Local Contract Process

A central contract would cover an item or group of items that would be purchased from a specified supplier, at an agreed price, for an agreed period of time, for all areas in the Southern Health Board. In some cases this would not lead to the most beneficial terms and conditions, for example a meat supplier may have very favourable terms for the large hospitals but may have a huge delivery cost associated with delivering meat to Dingle Community Hospital because of its geographic location. Likewise, a community hospital in a small rural area may get the best value for money and the best quality from a local supplier, while also contributing to the local economy. When there is no central contract for the items being purchased because of these issues, or because the volume of demand for the item is not large enough throughout the health board region to warrant the negotiation of a central contract, a local contract is created. An individual area, for their individual need, will negotiate a local contract.
Figure 5.3 represents the map that was designed in the current state analysis project to portray the as-is, current state, of the local contract process in the SHB area. Figure 5.4 represents the corresponding reengineered process that resulted from the business process-reengineering project.
Fig 5.3 Local Contract Process map. This represents the first documentation of the process involved in Local contracts prior to the reengineering process.
Fig 5.4 Reengineered Local Contract Process Map. This represents the local contract process after the reengineering processes was completed. This was the process agreed by the materials management function to represent the standard process to be used by all departments when purchasing products or services.
5.2.4 Evaluation of the Local Contract Process - Changes from the Current State to the Reengineered map

Unlike the requisitioning maps, most of the changes in the local contract process maps figures 5.3 and 5.4 are a visual decluttering of the maps, allowing for a clearer view of the process.

Figure 5.3 shows the local contract process to the left of the map and flows into the placing and sending of a purchase order to the supplier. Figure 5.4, the reengineered process, concentrates solely on the local contract process and emphasises that the placing and sending of a purchase order is a separate sub process that is standard regardless of whether the purchase order originates from a contract item, a local contract item, or a once off purchase. Fig 5.3 specifically uses a purchase order placement process for local contract purchasing only. Fig 5.4 the reengineered process directs the user to the same process (referred to as 'Place a PO as per fig 3') as the output in Fig 5.2 -Reengineered requisition and requisition approval process. In that process it is referred to as fig 3.

While the reengineering in these two figures is not huge, and the implementation of any change minimal, it does serve to clarify the process and to reiterate the importance of standardising the process and eliminating exceptions to the standard.
5.2.5 Obsolete Processes

Fig 5.5 The Denny St Purchasing Process represents the first documentation of the process involved in the Denny St Purchasing process prior to the reengineering process. Denny Street is the administrative centre for Kerry Community Care and handles all purchases for Kerry Community Care. Denny Street does not have access to the computerised Aran Purchasing system and therefore, like all other areas outside the big hospitals, all purchase orders are manual. Because of this and because Denny Street was represented in the current state analysis project, a separate independent map was drawn up for their purchase order placement process.

In the reengineering project it was recognised that the manual placing of a purchase order was no different in process to the placing of a computerised order, and the order placement in Denny Street should be no different to any other location. Therefore fig 5.5 the Denny St Purchasing process became obsolete. Following the reengineering, fig 5.5 was superseded by the new standard requisitioning, requisition approval process (fig 5.2) and the new Purchase Order Placement process (fig 5.6).
Fig 5.5 Denny St Purchasing Process. This represents the first documentation of the process involved in the Denny St Purchasing process prior to the reengineering process.
5.2.6 Purchase Order Placement Process

Figure 5.6 Purchase Order Placement Process represents the PO placement process after the reengineering initiative was completed. This is the process agreed by the materials management function to represent the standard process to be used by all departments when purchasing products or services. This process amalgamates and replaces parts of the current state local contract purchasing process (fig 5.3) and the Denny Street Purchasing process (fig 5.5).

The trigger for this process is the output of the reengineered Requisition, Requisition approval process (fig 5.2) or the output from the reengineered local contract process (fig 5.4). There is also a third trigger here, this is where a department or location has been allocated a purchase order book so they may place a purchase order directly with a supplier rather than going through the Materials Management Function. A number of locations have been allocated these books to enable fast purchase of small items.

One of the most notable changes in this process is the standardisation of the process regardless of the trigger. No matter what the trigger or the nature of the purchase orders all placement of purchase orders must now comply with this process.

The less obvious but equally important changes occur in how the purchase order is communicated to the supplier and the storage of copies of the purchase order. In the current state maps, purchase orders were communicated in some cases to the supplier by phone. It was recognised in the reengineering that this led to misunderstandings on the phone, and with no paper backup, the supplier’s version of the interpretation had to be accepted. For example, the quantity or the unit of measure may have been misheard. This would lead to, for example, 12 cases of an item arriving and being invoiced for, instead of 12 items. It was however acknowledged that in some cases it was more convenient and timely to ring in the order; however in the reengineered process, a telephone order has to be followed up by fax confirmation. The purchase order, along with the fax confirmation would then be filed for reference.
Fig 5.6 Reengineered Placing a Purchase Order Process Map. This represents the PO placement process after the reengineering processes was completed. This was the process agreed by the materials management function to represent the standard process to be used by all departments when purchasing products or services.
5.3 The Remaining Elements of the Supply Chain

The previous section of this chapter describes the three Purchasing Process maps developed by the current state analysis and the three corresponding maps developed by the business process reengineering initiative. This is a narrative of six maps in total from the purchasing process. These maps include requisition, approval, local contracts, and order placement. This narrative includes an analysis of the changes made by the reengineering initiative.

In this section this analysis will be more briefly compared to the changes made in the other areas of the supply chain, such as inventory control, payments, and contracts. Comparisons will be drawn on the type of changes that happened in the purchases processes to those that occurred in the other processes. This will serve to demonstrate how the changes in the purchasing maps are representative of the changes that occurred throughout the supply chain.

5.3.1 Inventory Management

The Inventory management section of the supply chain within the materials management function is responsible for inventory management, receiving goods, storing, and requisition fulfilment. The current state analysis project highlighted the work done on an operational level, and highlighted the lack of strategic direction. Because of this, not only has the reengineering process resulted in standardised, streamlined processes, but has also been responsible for the initiation of an inventory management policy document. This document sets out policy on the nature of the business, structures, stock/ inventory control, stock taking, key performance indicators (KPIs), vendor management, and service level agreements (SLA).

5.3.2 Payments

The payments departments within the materials management function are responsible for receiving invoices, matching to the goods receipt notes, preparing them and approving them for final payment by the finance department.
The payment processes, like the purchasing processes, benefit from the reengineering exercise by achieving more streamlined standardised processes. One of the main changes made was the removal of the responsibility of the payments department to create purchase orders for goods receipt notes or invoices that were received by the department with no corresponding purchase order (ie creating retrospective purchase orders to match invoices). This was a combined change with the inventory management department. The warehouse is no longer willing to accept goods into stores without a relevant purchase order in place. Therefore, the payments department no longer had to do a three-way check between PO, Goods Receipt Note (GRN) and the invoice. The stores had checked the PO against the GRN. The GRN was then filed with the payments department. The payments department now only check the GRN against the incoming invoice, effectively doing a two-way match. This reduced duplication of work, and gave the inventory management department more responsibility and autonomy over their own area.

5.3.3 Contracts

The central contracts department is outlined in chapter 4. The contracts department headed up by the Contracts Manager is located in the grounds of St Finbarr’s Hospital, Cork. The contracts department prepares, advertises and analyse tenders and awards contracts. They are responsible for all negotiations with suppliers of contracted items. An estimated 70% of the SHB budget is pay, it is the role of the Materials Management function to manage the 30% non-pay element. Of the 30% non-pay spend it is estimated that only 30% of purchases are from contracts and 70% is off contract buying. The Equipping department controlled by the Equipping Manager is responsible for the sourcing of, and tendering for, all equipment for capital projects. This subsection of the contracts department is situated on the grounds of Cork University Hospital.

In line with the analysis on the purchasing processes the central contracts processes achieved new streamlined, and visually uncluttered, process maps. Unlike the purchasing processes the changes in the contracts processes appear to have little by way of reengineering, and have achieved more cosmetic changes. For example the processes for products and the processes for equipping now have two separate process
maps instead of both appearing on the same map. The processes, however appear to be relatively unchanged. This is due mainly to the high level of legislative obligations on the department. The department has the best practice, most efficient process, legally imposed on them, leaving very little to change. The only apparent implementation of change that was needed was in relation to changes in the other elements of the supply chain that impacted them.

5.4 The Interviews in Relation to the Project

The following sections gives a commentary and analysis of the interviews carried out. The interviewees and the interview questions are outlined in chapter 3.

5.4.1 Current State Analysis

All three interviewees were asked initially to discuss the current state analysis project. This was the project that charted the processes as they were at that time and proceeded to document those processes. Two consultants from a management consultancy group facilitated the workshops to gather the information. The workshops used brown paper mapping to capture the information. The consultants then wrote a report that charted the processes, highlighted the issues, and gave recommendations.

Participation in the Current State Analysis Project

Mr A described himself as a member of the core project team for the Current State Analysis. He contributed extensively in the workshops relating to the processes he is currently involved in, and gave limited input in all the other workshops.

I attended all the workshops, for all the processes. In relation to my own processes, I tried not to take over the whole workshop and was happy to get such valuable input from my people...... I found the workshops not directly relating to my area extremely interesting because of course they impact my processes to a large degree... I was able to contribute in a limited capacity in these workshops as I have worked in each area of the supply chain at some stage in the past.
Mr B had an organising role in the project and contributed in the workshops. His contribution however was more limited than the others interviewed, as he tends to prefer smaller discussion groups or interviews.

I had the challenging role of getting the right people, at the right workshops, at the right time. Not as easy as it sounds because of the pressures on our departments time. It was a struggle at times explaining that spending time coming to the workshops now would ultimately lead to efficiencies and time saving in the future. So even though I contributed in the workshops my forte was in the organisation of the groups and one on one clarifications after the workshops.

Mr C participated in all the workshops in relation to the processes he manages directly.

I would have loved to go to all the workshops but I couldn’t afford the time. I did however attend all the workshops in relation to the processes my guys directly work on.

Opinions of the brown paper mapping process

None of those interviewed had been involved in brown paper mapping in the past, but all have either seen it or used it since. All those interviewed said they would recommend brown paper mapping as a method of capturing information. Mr A referred to it as definitely useful, and very clear. Mr B claimed it was very clear, very useful, made the whole process simpler to follow. Mr C had been involved in many varying methods of running workshops and was impressed with the simplicity of the process and the effectiveness with which the information was presented.

It was very impressive. I was struck by how simple the process was. Nobody felt they were involved in something over their heads. Simple but effective.

Participants response to the workshops – the Information given at the workshops versus what really happens on the ground

Mr C was confident that all the participants from his area were open and honest in their participation and the process impressed them.

All the guys spoke up and made the most of the workshops. This was helped by the fact that they found the brown paper mapping simple and addictive. Once we got into it there was no stopping us.
Mr C felt that the information given at the workshops was an accurate representation of what happened on the ground and translated into an accurate *warts and all* documented process.

Mr B said that the participants in the workshops were *at ease with the process*. He said that the information given at the workshop reflected what happened on the ground 100% because it was those doing the job that attended. He felt all were willing to speak up.

*Everyone spoke their mind ... or course the workshop reflected what happens on the ground because they are the people that make it happen every day.*

Mr A, however, thought that the senior participants responded very well to the workshops but lower level staff appeared to be more critical and apprehensive of the process. He claimed that 80% of what was presented was what actually happened on the ground. When asked about the other 20% he said that lower level staff did not admit to some elements of the processes that they knew were happening as they suspected that it would not go down well with their superiors.

**Reaction to the final report by the facilitators**

When asked about the final report presented by the facilitators, Mr A said he *'wasn't mad about it'*. He felt the final report reflected badly on the department and this was not justified. He felt that the consultant painted them in a poorer light than was the reality, and that they assumed deficiencies that didn’t exist. He felt this was intentional as it would be expect that the health service would then be looking for consultants to ‘fix’ the problems, so the more problems they reported on the more potential future work existed for them.

Mr B was very short in his reply and referred to the report as being *frank where it needed to be and complementary where it should have been*. He concluded that it was fair and realistic.

Mr C expressed some concern about the final report by the facilitators. While the maps and processes were accurate, some of the detail in the narrative caused him some concern. He felt the criticism, while warranted in some respects, did not take
into account the uniqueness of the organisation. Some of the recommendations were very practical and valid for private industry but did not take into account the specialised nature of a public sector organisation in a demand led environment. However, he also acknowledged that the report was not received well in general in the department and he disagreed with what he considered to be the general agreement that the report was overly critical and negative. He claimed that there were major concerns within the department that management had to acknowledge and accept before correcting.

Colleagues not involved in the project's reaction to the flowcharts

Mr A claimed that due to the small size of his area and everyone's willingness to contribute that everyone was involved and committed to the exercise.

Again Mr B was short and to the point and replied *good*. When encouraged to expand he simply replied *they accepted it as a useful exercise*.

Mr C claimed that the flowcharts were received with apathy.

5.4.2 Business Process Reengineering Project

The second part of the interview concentrated on the Business Process Reengineering project. The Business Process Reengineering project concentrated on adopting the recommendations of the current state analysis report. The workshops looked at the current state and brainstormed ideas on how to streamline and standardise the processes in the current state. The final deliverable of the project was the production of new streamlined business processes and new standard operating procedures for the processes concerned.

Participation in the process-reengineering project

All three interviewees were involved directly with the project. Mr A and Mr B attended all workshops and not just those pertaining directly to their current role.

Mr A said:

*I took a very active role in this project. I was impressed by the current state analysis project and wanted to be in on this business process reengineering at a very*
committed level. I essentially shared in the project management of this project.

Mr B as with the previous project had mainly an administrative, organising role in this project.

Mr C attended only the workshops pertaining directly to the processes he is currently managing.

as with the current state analysis project I would have loved to attend all workshops but time would not allow. I ensured I was at or represented at all our own workshops.

Resulting processes as a realistic achievable or unachievable goal

When asked if the new reengineered processes reflected a realistic achievable goal for the materials management function, Mr A responded immediately of course, after a brief pause he added ‘in theory’. He qualified this by explaining that he felt the goals were very achievable but would take commitment and enthusiasm to implement.

Mr B said in issues relating to his area we only went as far as we know would work. Mr B said it was the best fit for the time. He followed up by saying that the processes have progressed and improved further since – so in his opinion it wasn’t visionary enough.

Mr C explained that the BPR project set out realistic goals not over reaching but also not under reaching. It was as brave as was possible with the knowledge available at the time. Now in hindsight and with more knowledge of the business Mr C feels that it was not far reaching enough. Mr C was less than 18 months in the organisation at the time of the initial project.

If I was in the job longer and had more knowledge of the organisation as a whole, I think I would have pushed harder for a more dramatic change

Colleagues not involved in the project’s reaction to the new streamlined processes

All three said that their colleagues not involved directly in the project accepted the new processes willingly. Mr A said that he expected no resistance because his area of contracting is largely legislatively bound and therefore the core processes didn’t change dramatically.

the contracting process is legislatively bound and we were very much following the process set out for us legally, therefore we felt that our processes didn’t and
wouldn’t change dramatically... any changes we did make were accepted willingly by my people as they added to the efficiency of our operation.

Mr B said all were Fine with it. When pushed further he said that his colleagues were complementary of the new documents and many commented that these new documents gave focus.

Mr C claimed that they were accepted, no problem.

New processes making a material change

When the interviewees were asked if the project went far enough to make a material difference and if it represented ‘true’ Business Process Reengineering, all three interviewees replied positively. I then read Hammer and Champy’s definition of Business Process Reengineering to each of the interviewees.

‘Business Process Reengineering’ in general has been defined by Hammer and Champy (1993) as,

> The fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed.

Mr A hesitated before replying that yes on paper in was ‘true’ Business Process Reengineering but it was not implemented to the degree discussed and committed to on paper.

> In that room during the workshops yes it was true Business Process Reengineering, but when we left the room and returned to the reality of an extremely busy over stretched department, it was harder to make the dramatic changes discussed.

Mr B defended the project by saying it was best fit at the time but then qualified reluctantly that it was not a fundamental or dramatic change.

> We did our best – we made some good changes...... fundamental or dramatic? No

Mr C’s reply was simply and strongly ‘No’. He did however acknowledge that it was a very useful exercise. He stated that is led to financial benefits that he had not anticipated. He assumed there would be little financial benefit due to the inability to
make cuts in the payroll bill because of the contractual protection of employees in the public sector. He was however, happy with the other financial benefits achieved. These benefits included a reduction in the overtime bill, and a reduction in the payment of interest under the prompt payment legislation. (This is the legislation that enforces financial penalties on public service organisations that are late in paying their creditors.)

Implementation of the processes

The interviewees were then asked if the processes were implemented in their area. Mr A smiled and remained silent, when pushed further he said he felt it was an a la carte implementation throughout the department. He repeated his earlier comments within the room at those workshops it just seemed easier than the actual reality of implementing change

Mr B replied 'yes' but was not surprised when Mr A’s response was relayed to him. I can see where some may not see it as a successful or full implementation but I feel we did our best and remain committed to the implementation. Change doesn’t happen overnight

Mr C explained that the resulting documents are treated as living documents by his colleagues and are used mostly for training. The documents are not regarded as the bible.

Some final comments on the future

Mr A finished the interview by adding that not only was this initiative an advantageous prerequisite to an ERP implementation, it was essential. He was happy that it was a good focus for going forward. He specifically highlighted the financial savings achieved through the reduction in the process of maverick buying, and the strong focus on the amalgamation of purchasing. This allows the health service to maximise the discounts available for bulk buying. Mr B’s comments echoed this view.

Mr C’s interview finished with a discussion on the efficiencies that he felt the BPR initiative brought to his area. He reiterated that because of the nature of employment
contracts in the public sector; the wage bill was not affected. There was, and will be in the future, a reduction in the overtime bill due to improved efficiencies.

5.4.3 Analysis of the Interviews

The interviewees concurred that the current state analysis project was a success within the organisation. It was a new venture for all concerned and was a large learning experience for those involved. The resulting report was met with some hostility but was accepted as an excellent starting point for the Business Process Reengineering project. All interviewees were confident that the Business Process Reengineering project was just that until they were given a definition of BPR. They were then less confident. Mr A changed his mind as to whether it was 'true' BPR. Mr B said it was the best that could be done at the time. Mr C was adamant that he was now sure that it was not 'true' BPR. It was in essence a streamlining of the processes in a very useful exercise as a prerequisite to the implementation of an ERP system. Since this project the project to implement an ERP system nationally was initiated. Mr A was involved in this project. The new processes were not used as the blueprint for the implementation as was the intention for the implementation of an ERP system in the southern area, because it was now a national implementation and the processes designed in the south could not be translated into the national model due to procedural differences nationally. Mr A however said that the processes designed in the south gave an excellent starting point for the project. More importantly Mr A said that the big advantage of the projects that were undertaken allowed the employees from the south the experience and confidence of having gone through a similar exercise locally. They were more confident than those in the other areas as to their needs and expectations when designing the processes nationally.

5.5 Conclusion

Chapter 5 sets out the method by which the findings of the research will be presented. It was decided to present and analyse the information in relation to the purchasing processes as representative of the whole supply chain. The purchasing processes include the requisition and requisition approval process, the local contract process,
and the purchase order placement process. This subsection was chosen because of the significance of the process both within and outside the supply chain.

The chapter proceeds with a narrative of the results of the current state analysis project, followed by the results of the business reengineering initiative. It then proceeds to displaying the initial Procurement processes within the SHB in figs 5.1, 5.3, 5.5. Then the reengineered map displaying the streamlined, standardised processes are displayed in figs 5.2, 5.4, 5.6.

Some of the most significant improvements identified are in the presentation of the maps, method of communication within the processes, the introduction of a requisition log, the elimination of differences in processes using computerised systems and those not, and the elimination of differences in processes due to location.

There is a visible difference in the presentation of the process in each map. The reengineered map is easier to read, visually uncluttered, and appears more orderly. The method of communication of requisitions has been changed to reduce, if not eliminate completely, all verbal communication of requisition and tighten up on the paper trail.

The less obvious but equally important changes occur in how the purchase order is communicated to the supplier and the storage of copies of the purchase order. In the current state maps, purchase orders were communicated in some cases to the supplier by phone which led to costly misinterpretations with no paper trail to fall back on.

The streamlining of the process was also achieved through the introduction of a requisition log. This introduced a consistency of requisition acceptance not previously available. It also improved the communication between the requisitioner and the purchaser.

Another significant achievement is evident in the elimination of obsolete processes due to the standardisation of processes regardless of location and regardless of where
a computerised system is in use or not. This allows for the user to concentrate on the streamlined, standardised process rather than the tools used to achieve it.

One of the most notable changes in the process is the standardisation of the process regardless of the trigger. No matter what the trigger or the nature of the purchase orders all placement of purchase orders must now comply with this process.

This chapter outlines in summary how the results of the Purchasing processes presented are reflected and duplicated in the other processes. These changes range from significant and difficult to implement, to cosmetic. All changes serve to streamline the processes, create standardisation, eliminate duplication, eliminate inconsistencies in locations, and improve communication as in the purchasing processes.

The new streamlined, rationalised, standardised processes allow a consistency of operation within the service that was not previously achieved. The changes and savings are most evident in the efficiency of the service, for example communication improvement and cost savings due to efficient purchasing and the amalgamation of purchase orders to gain discounts. Further savings and rationalisation would have been achieved through rationalisation of staff, but this could not be tackled due to restrictions imposed by a highly unionised workforce and the protection of roles and responsibilities of staff in the public service.

This chapter proceeds to concentrate on the interviews of three key personnel involved in the case study. In the interview with Mr A, his earliest answers were positive and reflected loyalty to the organisation and the project. As the interview went on and he became more open, his answers were more critical and arguably honest. Mr B was not comfortable with the interview process but anxious to help. He kept his answers short and was not drawn into expanding. He maintained a very positive view of the projects and of the organisation. Mr C's interview was the only one where the list of questions was only used as a guide to start the conversation. Mr C had very strong ideas and was happy to share them. He believed the projects were very positive exercises for the employees and the processes. He believed it to be a very necessary and productive process. He did not however hide his disappointment at
how much more that could have been achieved. He was surprised that his colleagues thought that the consultants report was a negative point and instead of working towards corrective action dismissed some of it as over critical and inaccurate. He believed he had higher expectations because of his experience in the private sector.

In the next chapter, the results of the study will be summarised and will conclude to answer the research question as to how useful business process reengineering can be in the Irish public health procurement process.
6 Conclusion

6.1 Introduction

This study sets out to identify how useful Business Process Reengineering can be in a public sector environment. The author concentrates on reengineering within the procurement process of the Irish public health system. Specifically, this research examines the case of a BPR project undertaken in the procurement function of the HSE – Southern area. The literature on BPR, in conjunction with the material from the BPR project, and interviews from relevant project team members, is examined.

There are a number of conclusions revealed from this study. These conclusions are identified under the following headings:

- Improvements achieved through the BPR process
- The achievement of ‘true’ BPR
- Process Driven rather than IT driven business
- New Position of Power with the Internal Environment
- New Position of Power with the External Environment

6.1.1 Improvements achieved through the BPR process

The first conclusion derived from this study is that significant improvements in the operations of the organisation can be, and were, achieved through the BPR process. It is evident from the evaluation of the results of the project in chapter 5, that the BPR project that took place on the procurement processes, in the health service, in the southern region, produced successful outcomes. Evidence was presented of newly created streamlined, rationalised, standardised processes. These processes were not only visually improved but also led to a consistency of operations not previously experienced in the area. The method of placing contracting, requisitions, purchasing, inventory management, and making payments, has been rationalised. The communication between the requisitioner and the purchaser, has become more consistent. This was achieved as outlined in chapter 5 through the use of a requisition log, and though the reduction, and elimination in some cases, of verbal requests. This
consistency in operations was extended to the relationship between the purchaser and the supplier, again by the use of written requests and written confirmations of order; and more obviously in the use of the contracts department for direct dealings with the supplier, and thus the more consistent approach the department has to the supplier. Evidence of these improvements is supported by commentary from those interviewed.

Because of the contractual rights of the employees in the public sector, the improvements achieved did not include direct savings in the payroll bill. It is not possible to create redundancies because of the level of protection afforded to the employee. The new efficiencies did however allow for a reduction in the overtime bill.

There are further financial savings evident directly relating to the improvements in the contracts and purchasing processes. These improvements have led to the reduction in the practice of maverick buying which is normally more expensive than buying off a pre negotiated contract. The purchaser no longer deals with the supplier when there is an invalid or out of date contract. This issue is referred back to contracts where it is dealt with in a timely fashion to discourage buying outside contracts. In addition the controls over purchasing have led to an increased level of amalgamated buying which enables the procurer to avail of bulk discounts in both the product and the delivery of that product.

The efficiency throughout the procurement processes has aided the HSE in paying their creditors on time. This has improved relations with the creditors, and has reduced the payments of interest under the prompt payment legislation.

6.1.2 The Achievement of 'True' BPR

The second conclusion of this study is, while improvements were achieved, some may argue, these improvements did not constitute 'true' BPR. In the literature review it was established that BPR represents fundamental, radical, and dramatic improvements to an organisations business processes. The literature reviewed in chapter 2 was sceptical about the possibility of this radical change being possible in a public sector
environment, because far-reaching and extensive change goes against the culture of the public sector. (Hutton 1996; Cats-Baril & Thompson 1995; and Indihar Stemberger & Jaklic 2007).

The case study in this research shows that the project team believed that they were involved in a BPR project and believed it to be ultimately successful. On closer questioning of the interviewees, and investigation of the resulting documentation, it is evident that the changes which occurred, which include streamlining, standardisation, and added controls, amounted to incremental changes rather than dramatic or radical ones. Those interviewed shared the view that the changes that were introduced were then implemented to varying degrees across the different areas of the supply chain management function researched. The barriers to the introduction and full implementation of true radical change were ones associated with the culture of the public sector environment. These barriers include inability to reduce work force and the likelihood of industrial relations problems where dramatic change is introduced. This is in line with the opinion in the literature review that referred to the inertia associated with the public service.

Therefore, even though improvement and efficiencies were made, those positive changes were not dramatic and radical enough to constitute 'true' BPR.

6.1.3 Process Driven Rather than IT Driven Business

The standardisation of processes that was achieved in the procurement sector was independent of IT systems. Some areas examined have systems that are used in the procurement process, while other areas are totally manual. The processes were designed to regulate and standardise the process regardless of the level of technology, if any, that exists in each area.

Designing the processes to be system independent has a two-fold advantage. Firstly, it allows for fewer processes. Each process will have one standard clear flow, rather than one flow for areas with IT, and one for areas without technology. Secondly, because the system that is in place is nearing its end of life, any processes designed
that specifically include these systems would have a short useful life. Designing the processes independent of the system allows for a clear vision of the flow that will sustain a change or upgrade in IT. Any initiative undertaken to implement new systems in this area will have the advantage of having clean, clear, standardised processes to base the system on. The procurement function has essentially avoided putting themselves in a position where the system dictates the processes. The processes were designed and committed to first, and independent of any system or vendor. This concurs with the literature examined in chapter 2 which advised against forcing the organisation into processes to align themselves with popular software packages (Grover et al 1995; Hammer 1999).

6.1.4 Improved Communication

There is strong evidence in this research of improved communication due to the BPR initiative undertaken. There is an elimination of verbal requests as a primary method of communication to trigger the procurement process. It is acknowledged that due to the nature of the business, in emergencies, verbal requests can be accommodated once they are supported by documentation retrospectively. This not only shows a commitment to improving communication, but an ability to remain flexible within the standardised processes.

Another example of improved communication is apparent with the introduction of a requisition log. This log aids in the management of the status of the requisition and allows for prompt and accurate communication from the procurer to the requisitioner.

6.1.5 New Position of Power with the Internal Environment

The improved communication highlighted above puts the procurement function in a stronger position of power with the rest of the health service internally.

This is evident with the introduction of the requisition log. Requisitioners who routinely resubmit requisitions that were previously rejected, in the hope of getting a
different procurer to pass the requisition for purchase, can now be easily identified due to the new improved communication via the requisition log.

The procurement function now armed with standard processes and controls, can deal more consistently and confidently with the requisitioners who lie outside the control of the function. The procurement personnel in the past were more reactive with personnel outside their own function. There wasn’t a standard approach to dealing with the requisitioner. This allowed the requisitioner the flexibility to force the procurement personnel into agreement on whatever they needed by citing undocumented precedence. For example, the requisitioner may insist that their requisition be converted to a purchase order based on the fact that a similar request was granted in the past. Now the procurer can shift the onus back on to the requisitioner to follow the process correctly and enforce the procurement roles to the full, in the knowledge that all procurement personnel will react in the same way.

6.1.6 New Position of Power with the External Environment

A number of changes made in the contracts processes outlined in chapter 5, allow the procurement function to be in a stronger position with its suppliers. The new processes lend themselves towards use of contracts and away from maverick buying. This has resulted in the power being taken from the individual procurers to renegotiate out-of-date contracts, and this control is given back to the contracts department. This guards against the supplier having the influence to change prices and terms with individual procurers, and gives that power back to the contracts department. The result of this is to avoid inconsistencies of pricing and delivery terms in particular.

As outlined in 6.1.3, the procurement business in this research is now process driven. This allows the procurement function power when dealing with vendors of IT systems in the future. The procurement function is in the best possible position to dictate what system they need and how it should be configured, and not be advised into buying a vendors system that does not fit well with the processes.
6.2 Conclusion

The case study demonstrates that 'true' BPR was not possible in the procurement elements of the Irish public health system. However it also demonstrates that the BPR process was an important and powerful exercise to change incrementally, and improve, the processes of the organisation. Improvements in communication achieved through BPR brought about confidence in the procurement process. This confidence was evident in the internal procurement function and in their transactions with the wider community of customers and suppliers.

In conclusion, while evidence is not shown of radical and dramatic redesign, the BPR process was the tool that created a standardised, focused, powerful and efficient procurement process in this case. It highlights that a BPR initiative can be chiefly advantageous in a public sector environment.
7 Bibliography


www2.chass.ncsu.edu/garson/pa765/cases.html


Cooper, D; Schindler, P; (2001) Business Research Methods (7th edn), New York, McGraw Hill


Cresto, G; Mabe, J; O'Malley, B (1995) Meeting the challenges of BPR, Bobbin
Feb 1995 v36 n6 p72-77

Davenport, T (1993), Process Innovation: Reengineering work through information
technology, Harvard Business School Press, Boston

Davenport, T; Short, J (1990) The New Industrial Engineering: information
technology and business process redesign, Sloan Management Review, Summer, Vol
31 Issue 4, p11-27

Davenport, T; Stoddard, D (1994) Reengineering: business change of mythic
proportions, MIS Quarterly June 1994 v18 n2 p121-128

n518 p90-91

when wrong with the business-process reengineering fad. And will it come back?
Computerworld June 23, 2003 - book excerpt

Davidson, W. H. (1993) Beyond re-engineering: the three phases of Business
transformation, IBM Systems Journal March 1993 v32 n1 p65-80

Daymon, Christine; Holloway, Immy; (2002) Qualitative Research Methods in Public
Relations and Marketing Communications, Routledge, London & New York

Philadelphia


Fitzgerald, B; Murphy, C, (1996) Business Process Reengineering: putting theory into
practice, INFOR vol 34, no1 Feb 1996 p3-14

Flyvbjerg, B (2004) Five misunderstandings about case-study research – Chpt 27
Qualitative Research Practice Edited by Seale, Clive; Gobo, Giampietro; Gubrium,
Jaber F; Silverman, David – Sage

New’ Public Administration review 34 p106-115

F.E. Peacock Publishers

Process Reengineering, Journal of Management information systems/ summer 1995,
vol12 No1 p109-144
Gummesson, E (2000): *Qualitative Methods in Management Research 2nd Ed*


Health Act 1970, Irish Statute Book

Health Strategy “Quality and Fairness” (2001), Department of Health and Children, Dublin


Sattin, G (2006); *Process problems? Transforming the process through reengineering or simplification offers opportunities to any business*; CA Magazine April 2006 v 139 i3 p45


Value For Money Audit (2001), Department of Health and Children, Dublin

Vollmer, M; Phillips, T; (2000) Process mapping Key starter in Knowledge Management; Offshore April 2000

Weeks, D F (2005) Enterprise-wide performance and business process management: learn what the florida department of revenue, a large organisation in the fourth most populous state, has been doing to generate business results that exceed private-sector performance expectations, The Public Manager Winter 2005 v 34 i4 p3
