

**A study of migrating customers to self-  
help options in the utility industry**

**Dorinda Blades  
204523466**

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096210

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## CONTENTS

### EXECUTIVE SUMMARY

ix

### CHAPTER 1 : PROBLEM STATEMENT

<b>1.1</b>	<b>Introduction</b>	1
<b>1.2</b>	<b>Eskom's profile</b>	2
<b>1.3</b>	<b>Definition of the problem</b>	2
	1.3.1 Eskom's web services	3
	1.3.2 Eskom's mobile services	5
	1.3.3 Eskom's contact centre	5
<b>1.4</b>	<b>Aim of the research</b>	6
<b>1.5</b>	<b>Objective of the research</b>	6
<b>1.6</b>	<b>Research question</b>	6
<b>1.7</b>	<b>Previous research</b>	7
<b>1.8</b>	<b>Research methodology</b>	8
<b>1.9</b>	<b>Data collection methods</b>	9
<b>1.10</b>	<b>Data collection plan</b>	9
<b>1.11</b>	<b>Benefits from the research</b>	10
<b>1.12</b>	<b>Research structure</b>	10

### CHAPTER 2 : LITERATURE REVIEW

<b>1.2</b>	<b>Introduction</b>	11
<b>2.2</b>	<b>Technology</b>	11
	2.2.1 21 <sup>st</sup> Century technology innovation	14
	2.2.2 Voice technology	14
	2.2.2.1 Automated call centre	15
	2.2.2.2 Telematics	15
	2.2.2.3 Voice portals	15
	2.2.2.4 Speech technology	15
	2.2.3 Internet technology	16
	2.2.3.1 E-mail	17
	2.2.3.2 Electronic bill presentation and payment	18
	2.2.3.3 Update customer detail	19
	2.2.3.4 Meter readings	20
	2.2.3.5 Internet chat	20
<b>2.3</b>	<b>Self-services</b>	21
	2.3.1 E-services	21
	2.3.2 Web services	23
	2.3.3 Myths about self-service	24
	2.3.3.1 Myth 1: Self-service is foolproof	24
	2.3.3.2 Myth 2: Self-service means eliminating customer interactions	25
	2.3.3.3 Myth 3: Self-service is a quick fix	25
	2.3.3.4 Myth 4: One self-service fits all	25
	2.3.3.5 Myth 5: Call centre volumes go down and programme has succeeded	26
<b>2.4</b>	<b>Customer service expectations</b>	26
	2.4.1 The theory	27
	2.4.2 The practice	28
<b>2.5</b>	<b>Electronic writing principles</b>	29
	2.5.1 Quality	20
	2.5.2 Accuracy	30
	2.5.3 Timeousness	30

2.5.4 Usability	30
2.5.5 Terminology	30
<b>2.6 The Internet</b>	31
2.6.1 The psychology of the Internet	31
2.6.2 The African Internet	31
2.6.3 Assessing the value of the Internet	32
<b>2.7 Organisations as systems</b>	32
2.7.1 Organisational culture	34
2.7.2 Organisational decision-making	35
2.7.3 Self-service as an organisational brand	35
2.7.4 Organisational customer segmentation	36
2.7.5 Organisational role: from webmaster to web manager	37
2.7.6 Customer service process requirements	39
2.7.7 Organisational readiness for OD	39
2.7.7.1 Seven-S framework model	40
2.7.7.2 Action research and OD	42
2.7.8 Organisational development and change	43
2.7.9 OD approach to migrate customers to self-service	44
<b>2.8 Conclusion</b>	45
<b>CHAPTER 3 : RESEARCH DESIGN</b>	
<b>3.1. Introduction</b>	46
<b>3.2 Research methodology</b>	47
<b>3.3 Principles of the research design</b>	48
<b>3.4 Research question</b>	48
<b>3.5 The nature of systems thinking</b>	49
3.5.1 The usefulness of Systems Thinking	49
<b>3.6 The five systemic metaphors</b>	51
3.6.1 Machine metaphor	52
3.6.2 Organic metaphor	52
3.6.3 Neurocybernetic metaphor	53
3.6.4 Culture metaphor	53
3.6.5 Political metaphor	53
3.6.6 Morgan's images of an organisation	53
3.6.6.1 Machines	53
3.6.6.2 Organisms	53
3.6.6.3 Brains	53
3.6.6.4 Cultures	53
3.6.6.5 Political systems	53
3.6.6.6 Psychic prisons	54
3.6.6.7 Flux and transformation	54
3.6.6.8 Instrument of domination	54
<b>3.7 System methodologies</b>	54
<b>3.8 Qualitative research and evaluation methods</b>	56
<b>3.9 Definitions of qualitative research</b>	58
3.9.1 Dr Virginia Cano	58
3.9.2 Mason	58
3.9.3 Hammersley	58
3.9.4 Hammersley and Atkinson	58
<b>3.10 Qualitative theories applicable to this study</b>	59
3.10.1 Grounded theory	59
3.10.2 Personal construct theory	60
3.10.3 Narrative Enquiry	60
<b>3.11 Qualitative research on the Internet</b>	61
<b>3.12 Diagram types used in system studies</b>	62

<b>3.13 Motivation to do qualitative research</b>	64
<b>3.14 Qualitative philosophical assumptions</b>	65
3.14.1 Positivist research	65
3.14.2 Interpretive research	65
3.14.3 Critical research	66
3.14.4 Action research	66
<b>3.15 Case study research</b>	67
<b>3.16 Approaches in qualitative methods</b>	68
3.16.1 Positivism	68
3.16.2 Post-positivism	69
3.16.3 Constructivism	69
3.16.5 Critical theory	69
3.17 Customer segmentation	69
<b>3.18 Conclusion</b>	74
<b>CHAPTER 4 : DATA COLLECTION METHODS</b>	
<b>4.1 Introduction</b>	75
<b>4.2 Qualitative Data</b>	75
4.2.1 In-depth interviews	75
4.2.2 Direct observation	75
4.2.3 Written documents	75
<b>4.3 Data collection methods</b>	75
<b>4.4 Qualitative techniques for data collection</b>	77
<b>4.5 Modes of analysis</b>	77
4.5.1 Hermeneutic interpretation	77
4.5.2 Narrative and metaphor	78
<b>4.6 DATA COLLECTION PLAN</b>	78
4.6.1 Subsidiary research questions to further assist data analysis	79
<b>4.7 Qualitative data</b>	79
<b>4.8 Data summary</b>	80
<b>4.9 Case studies</b>	80
4.9.1 Idaho Power – voice technology	80
4.9.2 Portland General Electric – web and IVR	82
4.9.3 Omaha Public Power District – speech recognition	83
<b>4.10 Chartwell case study graphs</b>	84
<b>4.11 Website design</b>	86
<b>4.12 PA benchmarking surveys</b>	86
<b>4.13 Data quality</b>	89
4.13.1 Making the business case	89
4.13.2 Analysis of costs	90
<b>4.14 Researcher’s journal</b>	91
<b>4.15 Conclusion</b>	91
<b>CHAPTER 5 : RESEARCH FINDINGS</b>	
<b>5.1 Introduction</b>	92
<b>5.2 Research findings</b>	92
5.2.1 Self-service web page	92
5.2.2 Structure of a self-service website	93
5.2.3 Medium of self-service	95
5.2.4 Content of a self-service website	96
<b>5.3 Process versus function</b>	96
<b>5.4 Lessons to be learnt</b>	98
5.4.1 Make sure customers want to do the work	98
5.4.2 Web design	98

5.4.3 Watch web jargon	99
5.4.4 Give it time	99
5.4.5 Don't replace : augment	99
5.5 The usefulness of organisation theory	99
5.6 Useful concepts to remember from this research	99
5.6.1 Creative tension	99
5.6.2 Single-loop versus double-loop learning	99
5.6.3 A mindshift	100
5.6.4 Triple-loop learning	100
5.6.5 Team learning	100
<b>5.7 Conclusion</b>	<b>100</b>
<b>CHAPTER 6 : RECOMMENDATIONS AND CONCLUSIONS</b>	
<b>6.1 Introduction</b>	<b>101</b>
<b>6.2 Recommendations</b>	<b>102</b>
<b>6.3 Conclusion</b>	<b>105</b>
<b>REFERENCE LIST</b>	<b>106</b>
<b>ANNEXURE - ONLINE SURVEY QUESTIONNAIRE</b>	<b>115</b>

## LIST OF FIGURES AND TABLES

### 1. FIGURES

Figure 1.1 Eskom's customer service expense	3
<hr/>	
Figure 2.1 System's map of self-service technology	12
Figure 2.2 Matching customer expectations with internal performance	27
Figure 2.3 Factors that impact on customer perceptions of value	29
Figure 2.4 A system interdependency	33
Figure 2.5 Rational decision-making	45
Figure 2.6 The learning cycle	40
Figure 2.7 The seven s-diagram	41
Figure 2.8 Action learning	44
<hr/>	
Figure 3.1 The research process	46
Figure 3.2 Four dimensions of design decisions	48
Figure 3.3 A general conception of a "system"	58
Figure 3.4 The research wheel	51
Figure 3.5 The five systemic perspectives	52
Figure 3.6 Soft systems methodology map	55
Figure 3.7 Diagram types used in system studies	63
Figure 3.8 Underlying philosophical assumptions	65
Figure 3.9 Action research spiral	67
Figure 3.10 Three dimensional segmentation	71
Figure 3.11 TXU energy web page	74
<hr/>	
Figure 4.1 Range of data collection	78
Figure 4.2 Growth in self-service applications	84
Figure 4.3 Online customer service capabilities	85
Figure 4.4 Incentive offered to customers	87
Figure 4.5 Years since internet billing was implemented	88
Figure 4.6 Data quality improvement cycle	89
Figure 4.7 Analysis of costs associated with data quality	90
Figure 4.8 Ishikawa diagram – impact of poor quality	91

### 2. TABLES

Table 1.1 Eskom web user statistics August 2005	3
Table 1.2 Results from the EBSCO database search	7
Table 1.3 Results from the NEXUS database search	7
Table 1.4 Subsidiary research questions and associated instruments	9
Table 1.5 Research structure	10
<hr/>	
Table 2.1 Possible technological innovation in the 21 <sup>st</sup> century	14
Table 2.2 Eskom's customer expectation	26
Table 2.3 Assessing the value of the Internet	32
Table 2.4 Qualitative theories	43

Table 3.1 Eskom's customer base	70
Table 3.2 Service channels	72
<hr/>	
Table 4.1 Subsidiary research questions	79
Table 4.2 Case study of a database	89
<hr/>	
Table 6.1 A framework of self-service utility options	102

## ACRONYMS

www	World wide web
SMS	Short messaging service
IVR	Interactive voice response
e-mail	Electronic mail
DCS	Divisional customer service
CS	Customer service
CSOnline	Customer service online website
GT-X	Graham Technologies
CRM	Customer relationship management
IT	Information technology
BPR	Business process re-engineering
IDC	Independent Development Corporation
Net	Internet
Etc	Etcetera
kWh	Kilowatt-hour
e-service	Electronic service



## **DEDICATION**

This dissertation is dedicated to my husband, Francis, Martin, Sholto Blades, without whose support, motivation and good homecooking, it would have been difficult to complete a Master's Degree and a dissertation.

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## **EXECUTIVE SUMMARY**

Cost per customer has become a key business driver in Eskom. Traditional methods of customer interaction requires local offices at great expense. If a customer cannot self-service an inquiry, higher-cost methods will add to the cost per customer.

More than 3,000,000 customer interactions are handled per annum via the contact centre. Eskom spend's approximately R800m per annum on retail, including customer service. Cost of service channels approximate figures are:

• Visit the customer	---	R300
• Customer visits walk-in centre	---	R30
• Telephonic contact	---	R12
• SMS contact	---	R0.5
• Internet	---	R0.05
• GPRS	---	R0.017

Comparisons with USA and European utilities, highlight the fact that Eskom is years behind international utilities in the shift to remote business. Eskom still spends R280m on local offices versus R80m on contact centre and web self-services. The USA spends 5.4% on local offices versus 22% on contact centre and web self-service options.

This author's research approach is not unique, but draws on the experience and evidence from case studies and benchmarking exercises done amongst various utilities by recognized benchmarking companies.

Putting support information online will reduce phone calls to the contact centre, reduce the volume of e-mails answered manually, handle routine questions, help customers find information and answers to questions quickly and easily and provide a 24/7 service.

The aim of this research is to reduce cost per customer by implementing self-service, however, the ease for a customer to do business with a utility is just as important.

# CHAPTER 1

## PROBLEM STATEMENT

*“Information Technology and business are becoming inextricably interwoven.  
No one can talk meaningfully about one without talking about the other.”*

*(Bill Gates, 2005, p.1)*

### 1.1 INTRODUCTION

Technology has revolutionised customer self-service and has changed the way in which utilities and companies are able to interact with their customers. A White Paper on “Optimising Customer Service” (2003) agrees that customer service agents can resolve most customer issues, but at a high cost for routine-type interactions.

Technology such as the Web and e-services can help integrate numerous applications to give business managers control of customer-facing information (Trefler : 2005). Raymond (2001) points out that, through the Web and e-services, people are discovering new ways to share knowledge. Today customers and employees are communicating with each other in a language that is natural, open, and direct. Companies that are not engaging in these services are missing an opportunity.

Until recently, the most notable aspect of the energy industry was its lack of notability. It was an environment in which change took place gradually (Beckford : 2000). Modern managers attach huge value as to how they can reduce cost per customer without compromising business efficiency and customer service. The Internet represents cheap natural resources (data), cheap transport (the pipe itself) and most important, cheap and efficient access to information (Raymond : 2001).

## 1.2 ESKOM'S PROFILE

Eskom is a vertically integrated operation that generates, transmits and distributes electricity. Eskom generates approximately 95% of the electricity used in South Africa. Electricity is distributed to industrial, mining, commercial, agricultural, re-distributors and residential customers locally and to international customers in Southern Africa. (Eskom Holdings Annual Report 2005 : 5).

## 1.3 DEFINITION OF THE PROBLEM

Eskom spend's about R800m per annum on retail, including customer service.

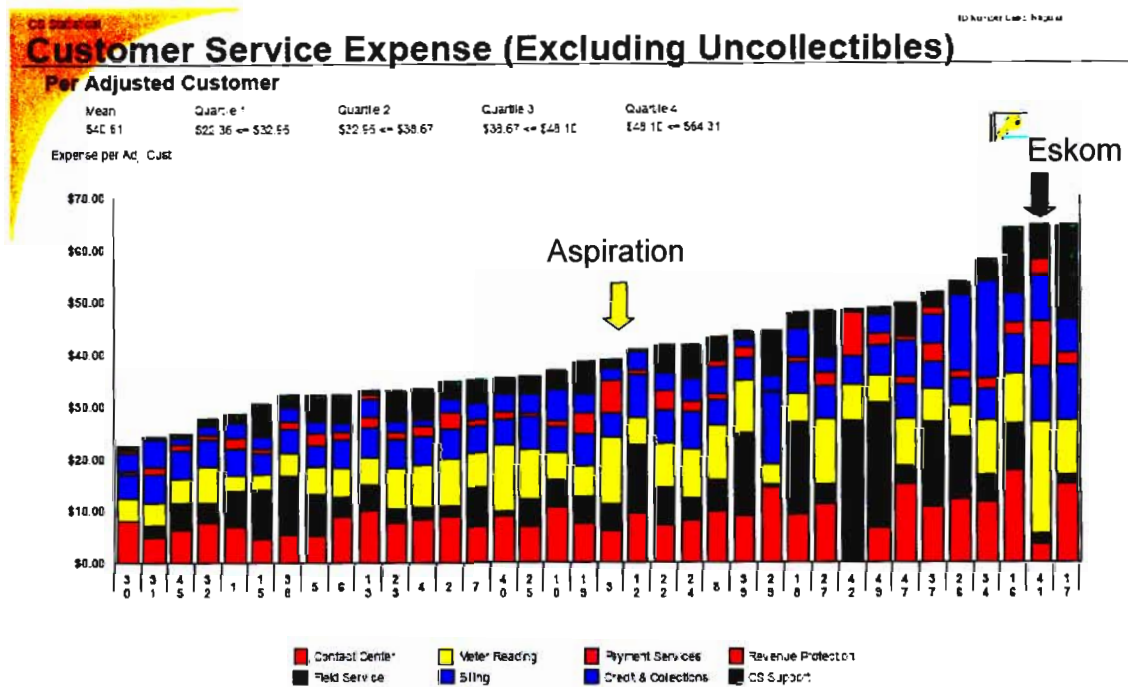
Cost of service channels approximate figures are:

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Comparisons with USA and European utilities highlight the fact that Eskom is years behind international utilities in the shift to remote business. Eskom still spends R280m on local offices versus R80m on contact centre and web self-services. The USA spends 5.4% on local offices versus 22% on contact centre and web self-service options.

*E-mail from customer confirming the "lack of remote" statement : (exact quote)*

"Does Eskom plan to give a method of paying for pre-paid electricity by using the Internet where a customer can log a request for R100 of electricity, give their 12-digit Eskom meter number and automatically debit their bank account to Eskom's bank account and the customer then gets the 20 digit number to punch into their meter at home? If this is not a current facility, then when do Eskom expect, if at all, to offer this service? It would be far more practical as people would be able to top their meter if it is getting dangerously low, especially say, late at night. I look forward to your reply, as in this day and age it must surely be an option!!. Eskom must also move with the times!!." (McKenzie : 2005).



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Figure 1.1 2005 Eskom customer service expense

Figure 1.1 shows Eskom’s 2005 cost per customer and the aspiration base where retail would like to be.

### 1.3.1 Eskom’s web-services

*Problem:* Customer enquiries still get routed to the contact centre back-office for a service agent to complete. Secondly, the number of registered users are small compared to Eskom’s potential customer base of 700,000 billed customers.

Number of visitors	Internet
Today (10 August 2005)	191
This Month (August 2005)	191
This Year (2005)	6,177
Inception to Date (2001 – 2006)	35,506

<b>Type of registered customers</b>	
Private households, ex-territorial organisations, representatives of foreign governments and other activities not adequately defined	5,206
Agricultural	1,726
Mining and quarrying	54
Manufacturing	153
Electricity, gas and water supply	216
Construction	17
Wholesale and retail trade, repair of motor vehicles, motor cycles and personal and household goods, hotels and restaurants	179
Transport, storage and communication	791
Financial intermediation, insurance, real estate and business services	185
Community, social and personal services	290
<i>Not defined</i>	1
<i>Not defined</i>	82
Inception to Date	8,900

<b>Registered customers per contact centre</b>	
Central	3,481
Eastern	930
Northern	1,767
North Western	909
Southern	338
Western	1,469
<i>Not defined</i>	6
Inception to Date	8,900

<b>E-mails per contact centre</b>	
Central	5,162
Eastern	1,410
North Eastern	1,421
North Western	1,092
Northern	1,690
Southern	406
Western	970
<i>Not defined</i>	9
Inception to Date	12,160

Table 1.1 CSONline statistics, August 2005

A survey during August 2005 shows that there are 9003 registered customers. Throughout the lifetime of the application, 6277 of the 9003 registered users used the site at least once (i.e. 69.72%). Since 1 March 2005, a total of only 1952 unique users visited CSONline (i.e. the last six months). In other words, only 21.68%, or one-fifth, of the registered users used the site in the last six months. The numbers show a steady decline. Since May 2005, only 1574 (or 17.48%) users have been using the site. Since July, only 1109 (or 12.31%). In August 2005 so far, only 589 unique users (or 6.54%) used the site (Liebenberg : 2005).

### 1.3.2 Eskom's mobile services

*Problem:* Underutilised. Eskom uses SMS text messaging for outage management. Many other opportunities such as tariff increases, safety campaigns, monthly meter readings, payment alerts and a welcome message to new customers, could be implemented.

### 1.3.3 Eskom's contact centre

*Problem:* Interactive Voice Response (IVR) underutilised. It can be designed to, for instance during large storms, detect a customer's telephone number when they call the contact center and automatically log a fault for the customer. Web self-service options and IVR self-service options should be similar to decrease routine type interactions attended to by a service agent at R12 an interaction, versus 5c for an internet enquiry.

Customer service, as we know it, is disappearing. As retail focuses on advertising and promoting customer service, they are completely overlooking what service has become: *a technology* (McKenna : 2002).

The Internet has brought self-services to the forefront of business strategy by creating anytime, anywhere business networks. Organisations that do not have the resources, or the direction, to launch initiatives such as self-service sites, will find that they will fail to create a brand presence (www.Manyworlds.com : 2005).

#### **1.4 AIM OF THE RESEARCH**

The aim of the research is to develop and implement customer self-service options in order to reduce cost per customer and balance customer expectations with cost. Superior customer service is seen as “Eskom is easy to do business with” at a realistic cost to Eskom which reflects the value of the customer segment. “Easy to do business with” for the customer means being accessible, responsive, reliable and ensuring that Distribution provides excellent service in communication, accessibility, reliability and availability of supply - all of which can be achieved with self-service technology (von Berg : 2003).

#### **1.5 OBJECTIVE OF THE RESEARCH**

The objective of the research is to analyse, design, develop and direct routine type interactions to web self-service options. According to Ike Mitchell (2002), customers will pick whichever service options work best, i.e. IVR or the web. The key is to understand the needs.

#### **1.6 RESEARCH QUESTION**

*Can self-service options improve the quality of customer service and make it more cost-efficient to both Eskom and the customer?*



## 1.7 PREVIOUS RESEARCH

A literature search by Megawatt Park Library during February 2005 on the EBSCO database provided many articles and books written on the Internet and web self-service. The numbers are listed in the table below.

EBSCO database search results:

<b>Topic</b>	<b>Available material</b>
<b>Internet versus face-to-face customer interactions</b>	
Where to with web-based self-service	20
Speech recognition as a customer self-service	35
Cost-efficiency of using web self-services	18
Optimising customer service	35
Migrating customers to self-help options in a utility industry	1
Self-service web applications	40
Online versus paper	12
<b>Total</b>	<b>161</b>

Table 1.2 Results from the EBSCO database search

A further specific search was done on the NEXUS database on the dissertation topic to establish whether any thesis or dissertation has been attempted on this subject.

NEXUS database search results:

<b>Topic</b>	<b>Available material</b>
<b>Migrating customers to self-service in a utility industry</b>	
Keywords: internet; customer; self-service options; utility industry 2002, 2003, 2004, 2005 The search did not find a thesis, doctorate or masters degree done on this topic.	0

Table 1.3 Results of the Nexus database search

## 1.8 RESEARCH METHODOLOGY

The study views the Internet as an information system. The research is not the author's original research, but evidence collected from case studies, benchmarking reports and customer feedback.

Benchmarking research has been chosen as an alternative to the traditional research approaches. It is a systematic comparison of organisational processes and performance to create new standards or to improve processes. A benchmark is a point of reference for a measurement.

Distribution Retail has been a participating member in the annual PA Consulting Benchmarking studies since 2002. PA is an American company with its Head Office in Los Angeles. Fifty-six utilities from the USA and Europe participate in the exercise, which covers all aspects of customer service, including customer self-service capabilities. Although Eskom is the only African member at this point, the researcher considers being benchmarked against American and European utilities significant, as customer self-service is a global issue and South Africa is part of the global village. In order to compare 'like with like' Eskom do need to benchmark themselves against Mexico, Brazil and South East Asia, as we are not the United States of America or the European Union. It is the intention to expand the Eskom benchmarking to countries such as Brazil and Mexico. An article by Ignacio Orejel from Mexico (2000) on transforming the E-Government of the future, North America Day, listed Mexico's web portal for citizens as electronic records management, citizen customer account (invoices and payments in one place), overlapping citizen services, social services and taxes. The website of the Philippines Cagayan Electric Power and Light Company advertises that CEPALCO, after four decades of performance, is facing the advent of a new century – an era that demands new ideals, bolder steps and fresh solutions. CEPALCO's facilities are complemented with quality customer service, which the company provides round-the-clock to ensure that complaints are addressed within the day they are received (<http://www.cepalco.com>; 15 November 2005).

Benchmarking is also a form of action learning which Revans (2005) defines as "a process in which a group of people come together fairly regularly to help each other to learn from their experience." The group of people can represent any category of business.

Benchmarking and Case Studies are part of qualitative perspectives. The dissertation will discuss three qualitative theories, namely Grounded Theory, Personal Construct Theory and Narrative Inquiry. Qualitative researchers attempt to make sense from observed phenomena. Qualitative questions seek answers to the how people are affected by technology innovations around them, how opinions and attitudes are formed and why people behave the way they do.

Levin and Lytinen (1985) recommends that information systems researchers move closer to the qualitative research methodology.

### 1.9 DATA COLLECTION METHODS

Data will be collected from Case Studies, Benchmarking results and customer surveys.

### 1.10 DATA COLLECTION PLAN

The following methods will be used to gather data in order to answer the subsidiary research questions:

Subsidiary research questions	Data collection methods						
	Interviews	Focus group	Email	Questionnaires	Case studies	Benchmark results	Researcher's journal
Do customers want self-service options?	CSC	DCS	CSC DCS	CSC	R	R	R
What are the requirements for a successful self-service website?	CSC	DCS	CSC	CSC	R	R	R
What medium is preferred?	CSC	NCSC	NCSC	NCSC	R	R	R
What are customers' perception about the usability and reliability of the customer self-service options?	CSC NCSC	DCS	CSC NCSC	CSC NCSC	R	R	R

CSC = CSONline customers; R = Researcher; IT = Information Technology; DCS = Distribution Customer Service; NCSC = New CSONline Customers

Table 1.4 Subsidiary research questions and associated data-gathering instruments

## 1.11 BENEFITS FROM THE RESEARCH

The expected benefits from the research are reduce cost per customer by implementing self-services and the ease for a customer to do business with a utility – hence improved customer service.

## 1.12 RESEARCH STRUCTURE

<b>Chapter 1</b>	<b>Problem statement</b> <ul style="list-style-type: none"> <li>• introduction</li> <li>• motivation for the study</li> <li>• definition of the problem and research question</li> <li>• rationale why this question is important</li> <li>• structure of the research project</li> </ul>
<b>Chapter 2</b>	<b>Literature review</b> <ul style="list-style-type: none"> <li>• critical reading and reflection of work that has been done by others in the same field.</li> <li>• clarification of terminology</li> <li>• presentation of applicable theoretical frameworks</li> </ul>
<b>Chapter 3</b>	<b>Research model</b> <ul style="list-style-type: none"> <li>• research model design</li> <li>• research paradigms</li> <li>• research methods and tools</li> <li>• research data validity</li> <li>• interpretation of data</li> </ul>
<b>Chapter 4</b>	<b>Data collection</b> <ul style="list-style-type: none"> <li>• process of obtaining your data</li> <li>• summary of the data</li> <li>• interpretation of the data</li> </ul>
<b>Chapter 5</b>	<b>Research findings</b> <ul style="list-style-type: none"> <li>• results of the research study</li> <li>• how the data adds new knowledge to the theoretical research</li> <li>• how this knowledge might be useful to others</li> <li>• the researcher's learning experience in doing the research</li> <li>• recommendations regarding this program and further research</li> </ul>
<b>Reference</b>	<b>Literature list</b>
<b>Appendix</b>	<b>Survey questionnaire</b>

Table 1.5 Research structure

## CHAPTER 2 LITERATURE REVIEW

*“Information, too, is energy. A particular kind of energy that releases and controls power. The close relationship between energy and information came to light when it was understood that energy had to be spent in order to acquire information and information has to be used in order to collect energy and put it to use. Every bit of information has to be paid for in energy, and every instance in energy must be paid for in information.”*

*(de Rosnay, 2002:1)*

### 2.1 INTRODUCTION

The purpose of this chapter is to scan the literature environment to determine the aspects necessary for efficient customer self-service in a utility industry on an information system such as the Internet. Both technology and quality customer service influence retail performance and will be taken into account. The Internet free encyclopedia, The Wikipedia (2005) defines the term ‘literature review’ as “the collection of information about a particular subject.”

### 2.2 TECHNOLOGY

“Changes in information technology in an organisation influence individual communication in an organisation and, almost paradoxically, the individuals in an organisation influence information technology” (Willams, E., 2005).

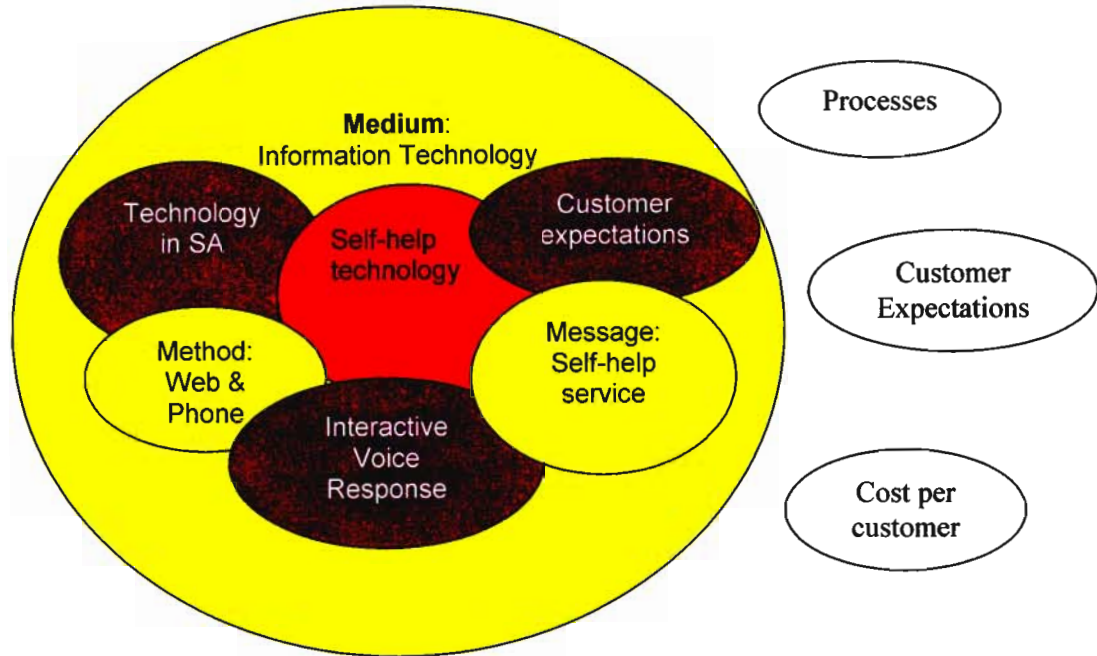


Figure 2.1 Systems map of self-service technology

Figure 2.1 shows the interdependency of the medium, the method and the message as the main influencing factors. Incorporated in the self-service technology are organisational processes, customer expectations and cost per customer which influences the development of a self-service programme. In the past, managers would typically take one part and focus on this. They then move all their attention to another part. The problem with this approach is that organisations can have wonderful departments that operate well by themselves, but which do not integrate well together. Consequently, the organisation suffers as a whole (McNamara, C., 2005).

Systems maps are good tools to explain concepts to an audience. It produces the bigger picture which would not be that obvious from a Powerpoint text presentation. One can easily distinguish the internal environment from the external environment by ways of boundary lines. Circles and arrows show the elements on a feedback loop. All stakeholders see the same picture, which leads to a common understanding (T205; 2004).

Internet and e-mail access have become important tools of business in an evolving post-industrial society where information has become power. Those with access to these technologies have opportunities to compete in a dynamic marketplace. Information technology has provided the opportunity for self-service (McKinney, 1996). Web service technology include customer self-services practices and knowledge management and organisational learning processes.

The introduction of new technologies, coupled with an increasing demand for faster and better forms of interaction, are altering communication activities and influencing organisational communications (Culn & Markus, 1987; Yates & Orlokowski, 1992). Changes in organisational communication in turn influence organisational structures and processes (Weick, 1979; Giddens, 1984). The events that lead to the selection and implementation of a planned culture change and a re-engineering programme such as Business Process Re-engineering (BPR), can be made sense of through the strategic, retrospective use of Weick's (1995) sensemaking approach to organisational analysis (Mills, J.H., 2003).

Leaders need to continually assess the technological environment by identifying important technological trends, analysing potential change in current and future technology, analysing the competitive impact of important technology, analysing technological strengths and weaknesses and listing priorities for technology strategy.

Change in the environment is generally a manifestation of technological innovation, or the process through which human capabilities are enlarged. A further characteristic of technological innovation that impacts on management is the fact that inventions and innovations are unlimited. Table 2.2 shows some possible innovations for the 21<sup>st</sup> century with consequent opportunities and threats to business (Cronje, et.al; 2004). These influences require that management be increasingly on the alert for technological change (Cronje, et. al., 2004).

### 2.2.1 Possible technological innovation in the 21<sup>st</sup> century

2005	Video postcards and postcard-sized screens display ten seconds of holiday sights and sounds.	2022	Foetuses conceived in extra-uterine incubators are born without ever having been inside a human womb.
2006	The active contact lens, linked to the Internet, allows the wearer to read e-mail without even opening his or her eyes.	2025	Computers connected directly to the brain are able to recognise and respond to thoughts, obviating the need for manual data input.
2007	New cars are equipped with anti-collision radar and satellite positioning systems.	2030	Following the development of artificial lungs, kidneys and livers, doctors now create artificial legs and fully-functional artificial eyes.
2010	Robotic pets are programmed to recognise their owner's voice.	2040	Cryogenics (human hibernation) is used for long-distance space travel.
2015	The genetic origins of all diseases are identified.	2050	Microscopic robots are capable of reproducing themselves.
2016	Human beings land on Mars; a permanent colony is established on the planet around 2044.	2500	From an average 78 years (in the developed world), the human lifespan is extended to 140 years.
2020	Flying wing aircraft are able to carry 1000 passengers up to 9000 km at average speed of 900 km/h.		

Table 2.1 21<sup>st</sup> Century Technological Innovation (Cronje, *et.al.*, 2004)

From the above it can be seen that innovations affect other environment variables such as economic growth and social change (the occurrence of spills). Technological breakthroughs result in new products, but also make products obsolete, just as CDs wiped out the market for cassette tapes – an unpredictable consequence (Cronje, *et.al.*, 2004).

### 2.2.2 Voice technology

In the early days of contact centres, self-service solutions were developed based on Interactive Voice Response (IVR) technology. These first-generation IVR solutions gained a poor reputation for delivering customer service. Callers were often frustrated by poorly-designed touch-tone systems that simply did not deliver on perceived benefits such as speed of access, speed of transaction or 24/7 availability (Voice technology – the way forward for cost-effective customer servicing; 2005).

Speech recognition has long been lauded as the key to self-service, but it never really got off the ground. Using speech application specifications (a royalty-free specification recently submitted to the World Wide Web Consortium), web developers can add an easy and intuitive



dialog interface to any web application or web self-service (Voice technology – the way forward for cost-effective customer servicing; 2005).

The speech market has evolved into four distinct areas:

**2.2.2.1 Automated contact centres:** IVR technology in contact centres allows customers to gain access to account information without being subjected to long hold times, or having to respond to rigidly structured menus.

**2.2.2.2 Telematics:** Using speech technologies in cars and home appliances can significantly enhance user-friendliness. For example, the 2003 Honda Accord in the US offers drivers a voice-activated mapping system that provides driving directions to and from any specified address or location in the country.

**2.2.2.3 Voice portals:** Using a speech interface to access enterprise data, customer and mobile workers can access information and transactions without being tethered to their desks. By voice-enabling items such as movie listings and local events, through web and voice portals, wireless customers have an opportunity to access enterprise-level information while on the move.

**2.2.2.4 Speech technology for wireless applications:** Another key area of voice and speech development is the deployment of speech technology for mobile and wireless applications. Wireless connectivity is giving companies even more options for serving up the data that drives business, getting that information out into the field, and optimising productivity of mobile work forces by using speech to simplify everyday “in the field” activities.

The ‘fourth wave’ is of a very different order. Fulbright (1964) said during a speech he made in the USA Senate that “we must dare to think ‘unthinkable’ thoughts. We must learn to explore all the options and possibilities that confront us in a complex and rapidly changing world.” The pressure to handle more customer queries ever more quickly leads to contact centre agent burnout, which results in high recruitment and training costs.

According to Meltzer (2004), 60%-70% of contact centre queries are billing-related (SARPA, July 2005, Revenue Strategies for Local Government). Many inquiries that reach the more

costly channel are generic questions that can be resolved with the Internet, such as view bill and bill balance, bill trends, bill payment and meter readings.

### 2.2.3 Internet technology

“The Internet will help achieve "friction free capitalism" by putting organisation and customer in direct contact and providing more information to both about each other” (Gates, B., 2005).

Long-standing problems in the contact centre continues to cause major management headaches. The source of these headaches – increasing call volumes, high expectations, high pressure and tight budgets – is not likely to diminish. Instead, relief must come from a new direction, the Web (Conneighton, C., 2001).

The Internet was developed in the late 60s and used by the United States Department of Defence for communication. Soon thereafter, the Internet became global with universities connecting to one another for research and communication purposes. Standards were set and more and more institutions connected to the Internet, enabling them to communicate with each other (Cougher, 1995). The Internet has made it possible for business and individuals to share information and communication instantaneously from just about anywhere in the world. This network of interconnected computers, known as the Internet, can be defined as a public, co-operative, self-sustaining system accessible throughout the world (de Beer, C., 2000).

The US Government and Federal Reserve Chairman, Alan Greenspan, was asked how much of the Internet phenomenon was based on sound fundamentals versus how much of it was based on hype. Greenspan replied: “You would not get hype working if there was not something fundamentally, potentially sound under it.” As Greenspan predicted, many firms will move to the Internet as a way of distributing services. Some of these firms will win, and some will lose, but the ones that win may win big, as the market potential is huge (Colley, et. al; 2001).

The publication “The Wireless Internet opportunity for Developing Countries” (Kotecha, 2005) examines the potential of proven and inexpensive technologies to bridge the connectivity gap, which is one of the key factors of the digital divide in Southern Africa. Key issues that need the attention of governments, international development agencies and the

NGOs are clarified. Also covered are the opinions of leaders from the fields of social and economic development, information and communication technology, government and international regulatory standards.

Guptill (2003) lists the following set of technologies and applications as most often used by business:

- Contact centre automation
- Sales-force automation
- Customer self-service via the Internet
- Integration of all customer-interfacing systems
- Personalisation
- Wireless communication with customers
- E-mail
- 24/7/365 access to service, support
- Integration of all customer-information databases
- Campaign management
- Data mining
- Improved decision-making with standard data systems and real-time analytical tools

### ***2.2.3.1 E-mail***

It is hard not to offer an e-mail customer service option if there is a website. It is like a brick-and-mortar business not providing a phone number for customer service. If the website features an e-mail address, customers will find and use it. The business needs to be set up to handle e-mail inquiries promptly and effectively (eGain, 2002).

E-mail is a social medium as well as a technical tool. It has become a pervasive communication medium. One that compliments the telephone, fax and face-to-face exchange. Agents are constantly responding to the same set of e-mail inquiries. The 80/20 rule is quite evident in customer e-mail handling – 80% of the queries will be about 20% of the issues. (eGain, 2001). The e-mail issue for the future is not technology specific, it is about how to integrate all organisational communication channels to best effect (William, E., 2005).

Most organisations today understand the economic benefits of using e-mail to communicate with their customers. Successful use of e-mail can reduce costs significantly, such as sending

monthly electricity bills by e-mail. Some companies have seen over 50 percent reduction in costs, saving millions in direct mail costs, while increasing the number and quality of data (Firstlogic.com, 2002).

Eskom uses Microsoft's Groupwise e-mail response management system. It is compatible with other e-mail systems such as Outlook. Groupwise is designed for individual use. It has no understanding of service levels. It has become the most prevalent communication channel, both between business and customers within businesses, more so than phone, fax, or in-person interactions. It's popularity as a channel for business interactions continues to grow, even though e-mail trails are now becoming a significant source of liability in corporations, and despite the challenges posed by disturbing practices such as spamming, phishing and spoofing (viruses).

In the business world, just as phone management evolved, e-mail management should also evolve driven by the need for greater flexibility, reliability, collaboration, accountability and universal access. E-mail communication can offer all these benefits when combined with workflow, reporting, tracking and role-based access control. (eGain, 2005).

A recent benchmark portal study shows that 26% of retailers fail to reply to customer e-mail inquiries. Although more than a quarter, or 26%, of retailers failed to respond to e-mail inquiries, the retail outperformed the cross-industry response rate of 41%.

The study provided further results. Although nearly 47% of retailers failed to respond to customer e-mails within 24 hours, they again outperformed the cross-industry rate at 61%. 9% of retailers responded within 25 to 36 hours, compared to the cross-industry rate of 8%. 12% responded after 48 hours.

40% of online-only businesses also failed to reply to customer e-mail inquiries. This was surprising, because one would think that e-businesses would have a high-quality e-mail customer service (Internet retailer; 2004).

### **2.2.3.2 Electronic bill presentation and payment (EBPP)**

The days of the paper-based billing processes are numbered. Billers who switch to EBPP can make significant cost-savings over the long-winded, manually-intensive and antiquated alternative. Customers can pay bills from their office desktop, home PC, digital TV or mobile

phone. Instead of breaking the customer relationship, electronic billing provides an opportunity to build it.

Articles, publications and advertorials invite customers to join the millions of people who make their lives easier every month by receiving and paying their bills online. When paying bills via paper checkbook and traditional mail there is no guarantee. No way to prove that the check was mailed on time. No easy way to confirm that the payment was made. Paying bills online saves time, money and stamps, plus a saving on late fee payment. It also minimises interest charges. Online is therefore better for the people who have the technology and ability to use it.

### **2.2.3.3 Update customer detail**

In every successful industry and business around the globe it is recognised that quality data is a strategic commodity and is essential for the success and survival of the business. “For Eskom Distribution, together with new systems and value chains, data forms the 'cornerstone' to the success of Distribution Business Operations as a whole” (Jacob Maroga: Managing Director Distribution, April 2002).

In “Barriers to Information Quality Diffusion”, Frank Davis (2005), VP of Information Quality Research and Practices, claims that in this era of rapidly emerging technologies, there are the innovators, early adopters, early majority, late majority and laggards. They are the five population segments in what is known as the technology diffusion curve. The diffusion curve depicts the order in which certain segments of the population adopt new technology. Customer empowerment is about empowering customers to take control and accountability for their own data (Bentley, 1994).

#### *Importance of data quality*

- **Fraud:** The U.S. Attorney General’s office states that “approximately \$23 billion, or 14 percent of the health care dollar, is wasted in fraud or inaccurate billing.”
- **Database marketing:** “Almost 50% of CRM projects fail, or have failed, due to problems managing data quality or reconciling customer records.” (Wayne Eckerson, The Data Warehouse Institute).
- **Mergers and acquisitions:** An acquiring company learned post deal that their new purchase had 50% fewer customers than they had thought.

- E-Business: A large online toy retailer recently went out of business because of poor customer fulfillment. Shipments were delayed as well as lost, because address information submitted by users was not validated.
- Citizen data: After an audit, it was estimated that 15-20% of voters on voter registration lists have either moved, or are deceased, when compared to data gathered from post office relocation data.

The United States Postal Service processes 43 million change of address requests each year. Does this get updated in billing systems?. Maybe eventually.

#### **2.2.3.4 Meter readings**

The Internet allows customers to submit their own meter readings online. By capturing their readings, customers will be able to give accurate and up-to-date readings that will be used for monthly billing. There are system checks in place to prevent this facility from being misused.

One of the most difficult challenges for those leading data quality programs is engaging “the business.” Why should “the business” be bothered with esoteric quality problems? A common perspective is that data is tucked away safely in corporate databases - the province of IT. (Redman, T.C., 2005).

When companies empower customers to transact how they want, when they want, experience shows that the vast majority of customers will choose the lowest cost option. What will make customers applaud in today’s high-tech world? Getting an answer to their issue as quickly and as painlessly as possible.

#### **2.2.3.5 Internet chat**

O’Neill, P., (2004) claims that Internet chat has to be the most under-recognised and under-utilised communication method available to people. The option is significantly more effective than phone or e-mail.

- Chat allows customers to continue working on the Internet without cutting the connection to make a phone call.
- While using chat, customers can multitask. This increases their satisfaction.
- Whereas phone agents live in a world of “let me tell you”, chat agents live in a world of “let me show you” or “let me do it for you”. Phone and e-mail cannot compare.

- First time resolution rate are significantly higher than email.
- Chat agents can handle two or three customers simultaneously, without the customer being aware of this. Companies can use domestic and/or offshore agents wherever Internet is available.

Distribution's customer website has some of the above capabilities and others need to be developed, such as personalisation with the CRM application. The principle is that all customer interactions should be channeled through the CRM application to allow for reference numbers, follow-up management and progress tracking.

## **2.3 SELF-SERVICES**

“It is the customer who determines what a business is.” In the very sense of Drucker's (1954) analysis, the single customer has come more deeply into the business focus than ever.

### **2.3.1 E-services**

The design of an e-service determines the key features of a service, the ease of maintaining and improving e-service, and the qualities of service experiences delivered through this channel. Yet, in practice, many e-services have been designed according to common sense or common practice (Conallen 2000), with little thought given to quality as defined by the customer. Practitioner methodologies for web application design and service design are available (Conallen, 2000; Dube, et al., 1999), yet informal and sometimes even contradictory suggestions remain the common means of describing appropriate electronic service design (Greenspun, 1999; Hanson, 1999; Nielsen, 2000; Siegel, 1996). The academic literature also has approached the electronic service design problem, but typically with an eye toward being more descriptive than prescriptive. Prior research has focused on building conceptual frameworks (Hoffman, et al., 1995; Hanson, 1999; Kaplan and Sawhney, 1999; Heim and Sinha, 2001; Boyer, et al., 2002) or on empirical taxonomy of e-service designs (Spiller and Lohse 1998; Heim and Sinha, 2002). Many open service strategy and design issues exist that require further research to identify best practices for e-services (Boyer, et al., 2002). Many open service strategy and design issues exist that require further research to identify best practices for e-services (Boyer, et al., 2002).

Studies have only recently considered the performance implications of such models of e-service. Business performance metrics of interest are summarized in Steyaert (2002). Researchers have empirically examined drivers of e-service performance such as website design and interface characteristics (Te'eni and Feldman, 2001; Hong, et al., 2002; Palmer 2002; Shim, et al., 2002), website usability (Agarwal and Venkatesh, 2002; Palmer, 2002), and website architectural qualities (Kim, et al., 2002).

With the transition from person-to-person service delivery to computer-based e-service delivery, ample data has become available for analysing the effectiveness of e-service designs. While it was close to impossible to monitor and record data on the second-by-second actions and interactions of customers within traditional physical service environments, e-services now enjoy the luxury of being able to collect data about customer activities 24 hours a day, from the second customers enter an e-service website to the point when they exit the service. Supplemental ratings of e-services are also being made available through several online customer rating companies. Field, et al. (2002) provides a comprehensive review of the breadth of these ratings available to e-services. However, the literature has only begun to consider the issues related to how e-services should make use of such data related to their operations.

Furthermore, to the best of the researcher's knowledge, little has been done to examine the co-production aspects of e-service, even though there is a sizable body of related literature for traditional services. In Chase (1987), customer roles in service delivery processes were explored and their influence on service quality were discussed. Lovelock and Young (1979) pointed out that customers could be potential sources for productivity improvement, as their labour can replace employee labour. Mills and Morris (1986) proposed the "partial" employee view for customers' roles and explored the potential managerial tools for managing customers as "partial employees." Heskett, et al. (1997) noted that, by encouraging customers to share responsibility, the firms could not only reduce their costs, but also improve service quality.

Prior work has also focused on the relationships between self-service technology and customer satisfaction. Dabholkar (1996) examined the factors that influence customers' evaluations of self-service technology service quality through an attribute model and an overall effect model. Moon and Frei (2000) pointed out that self-service may become a burden to the customer without an appropriate service design. Meuter, et al. (2000) used the



“Critical Incident Study” method to investigate the sources of satisfaction and dissatisfaction with self-service technology. Finally, Xue and Harker (2002a) presented the concept of customer efficiency and a related service management strategic framework, called Customer Efficiency Management (CEM), in response to customers’ increasing participation in the service co-production process, which has been enhanced by the development of information technology such as the Internet. Customer efficiency characterises the customer’s role as a co-producer by measuring productivity. Customer efficiency management is a strategy that focuses on actively involving customers in the co-production process and developing an efficient customer base through the integration of service delivery process management, customer relationship management, and information system management, in order to achieve high productivity, profitability and customer equity.

Another stream in the literature that the study is built on is Data Envelopment Analysis (DEA) (Charnes, et al., 1994, Xue and Harker, 2002b), which has increasingly been employed to analyse the performance and the quality of service operations. The managerial goals of a DEA analysis include identification and classification, performance evaluation and resource allocation (Metters, et al., 1999). Thanassoulis, et al., (1995) included service quality as an output in their DEA model used in a health care setting. Soteriou and Zenios (1999). developed and analysed a conceptual model of service quality efficiency in banking services based on the Heskett, et al. (1997) service profit chain. DEA studies of service quality have employed both single-stage and two-stage empirical methods. The single-stage methodology allows researchers and managers to identify which services are efficient in their transformation of inputs into service outputs, such as service quality. Athanassopoulos (1997) used a latent variable regression approach to analyse the relationship between the perceived quality of service processes and DEA efficiency scores for bank branches.

### **2.3.2 Web services**

Web services must be integrated with supporting services such as the contact centre and CRM application in order to achieve the blended service and support that allows customer issues to be resolved through the least costly channel, while seamlessly moving customers from channel to channel as needed. Web self-service is not intended to replace the contact centre. What self-service will do is to drive down the overall cost of supporting customers, reduce the workload at the contact centre and enhance customer experience. This is how many managers spell relief (Conneighton, 2002).

Web service can handle complex tasks such as personalisation and real-time data. On CSOnline, a new customer can access the electronic application form, read up on household or commercial tariffs, read outage management procedures, get regional contact centre telephone numbers and payment details.

Web services require real-time and relevant information to operate successfully. Information provided is the vehicle for using the Web to transfer and create knowledge. In practice, well-managed multi-tier customer service systems should operate like a funnel (Optimising Customer Service, 2005). In the 20<sup>th</sup> century economy, technology, data, information, knowledge, interaction, trust and customer relationship are the keys to success. Flexibility is defined by three terms: more options, freedom of choice and change mechanism. (Dwivedi & Kirankumar, 2003).

Dimension Data research (2004) shows that growing customer dissatisfaction with service levels is boosting the use of self-service channels. A new report published by International Development Corporation reveals that America's information technology spending will increase to \$417 billion in 2005 and reach \$497 billion by 2008. According to this study, government, manufacturing and banking will continue to drive IT spending in process management and content management (e.Newsletter, 2004). The report further claims that the trend toward self-service is also being driven by cost-reduction targets which are included in almost 60% of all business strategies.

The Internet has brought an alternative to the traditional retailer-customer interaction. With the Internet, customers are now able to describe exactly what they want, and retailers are able to deliver the desired service without compromise or delay. The role of the customer in this system has shifted from passive recipient to active designer with feedback loops between the organisation and the customer. As the Internet influences the many aspects of everyday lives, self-service has also been enhanced and changed by the Internet.

### **2.3.3 Myths about self-services**

#### **2.3.3.1 Myth 1: Self-service is a foolproof way to reduce costs**

The most common reason to implement customer self-service is cost reduction. A lesson learnt from the ATM banking technology, which resulted in customer anonymity, was not that

self-service was bad for business, nor that cost reduction was an inappropriate objective, but that self-service must be set in the context of maintaining the value of interactions with customers.

*Best practice:*

Self-service must be offered as one of the options in the spectrum of service offerings.

### **2.3.3.2 Myth 2: Self-service means eliminating customer interactions**

Organisations see web self-service as an extension of telephone self-service. This is a huge mistake, as web self-service presents a completely new set of opportunities and challenges. The web-and-a-computer is an infinitely richer interaction medium than the telephone-and-a-touchtone-keypad.

*Best practice:*

Customers use self-service if they can get accurate answers in a manner that is convenient to them and if they can get help when stuck. Self-service is a collaborative process of increasing efficiency, both for the customer and the organisation. Customers need “training wheels” or an adult ready to help.

### **2.3.3.3 Myth 3: Self-service is a quick fix**

Many organisations view self-service as a quick “band-aid” to solve customer interaction volume pressure. Adding ad hoc self-service capability to an organisation that does not have self-service-centric processes can be worse than no self-service at all.

*Best practice:*

Self-service must be implemented as an “outside-in” strategy across the business; it cannot succeed in a silo within the enterprise. When viewed in this “outside-in” manner, processes become customer-oriented.

### **2.3.3.4 Myth 4: One self-service method fits all customers**

Self-service is self-service is self-service. This is like buying socks “one size fits all”.

*Best practice:*

Customers want different access methods to self-service, depending on their skill level and where they are in the customer life-cycle.

**Myth 5: Deploy self-service, contact centre volumes go down and the programme has succeeded**

*Best Practice:*

- Customer service interactions with the organisation, whether through self-service or through assisted service, are the single most important vehicle for building customer relationships and gathering feedback on service.
- Self-service is also a good opportunity to sell, not just solve problems.

With more customer interactions moving to the Web, technologies are available that allow the Web to be used for real-time service and support. This technology set includes chat, co-browsing, online meetings and remote diagnostics and repair (eGain Communications; 2005).

## 2.4 CUSTOMER SERVICE EXPECTATIONS

This list defining customer expectations was drawn from work done in the late 1990s as part of the Customer Relations Programme (CRP) and incorporated in Eskom's Customer Service Charter. Their validity has since been confirmed through best practices and benchmarking in various projects. The table below lists Eskom's customers' expectations (DCS Strategy, 2004).

Service accessible to all customers.	Individual and collective needs dealt with promptly, appropriately and efficiently in a courteous manner.
Reliability in product and related network service delivery.	Informed of outages and prompt restoration.
Effective business communication.	Error-free bills and accurate measurement of consumption.
Customers personal details and their property treated with respect.	Value for money.
Involvement in issues affecting users.	Trust relationship.

Table 2.2 Eskom's customers' expectations (DCS Strategy, 2004).

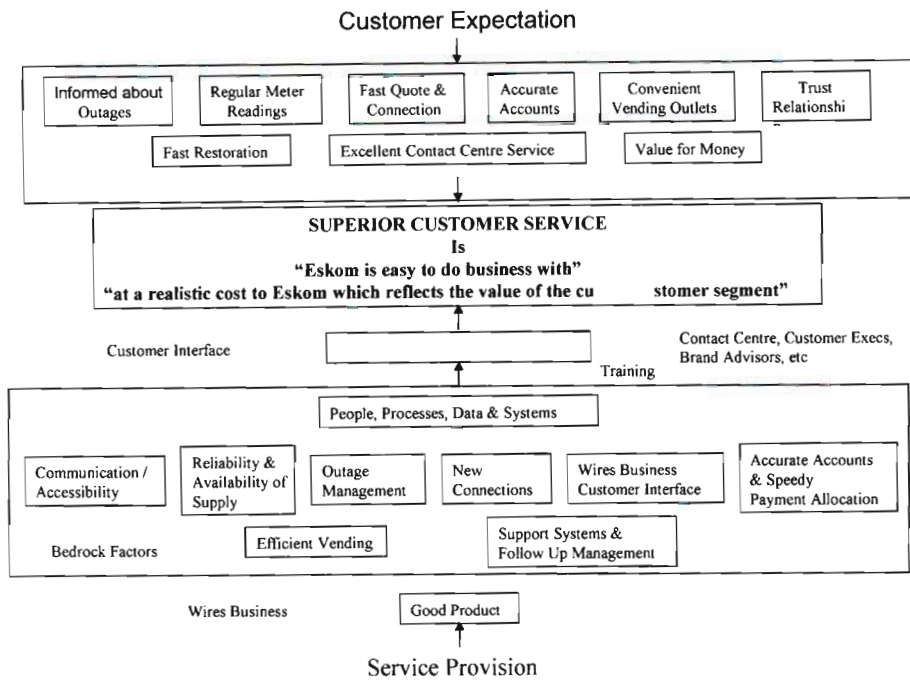


Figure 2.2 Matching Customer Expectations with Internal Performance

The challenge is to orientate electronic business contacts to the needs of the customers. A customer does not pick up bank statements at a specific office anymore, but rather at an ATM printer for bank statements, or via the Internet (Senger, Gronover and Riempp, 2002, p.1). Web-based customer servicing is less about growing revenues and market share, rather its attractions are:

**2.4.1 The theory**

Reducing customer servicing costs by using more cost-effective channels. It is claimed to be \$10-\$110 more expensive to handle a customer enquiry by phone than via the Web.

In published remarks, The Yankee Group, a Boston-based research firm, notes that organisations can save \$20-\$25 per call by using web self-service. (Conneighton, C).

Faster and more effective customer service means increased customer satisfaction, which means lower customer turnover.

Global 24X7X365 support at a fraction of the cost of face-to-face and local support.

Closer customer relationships, giving customers control.

Freeing staff resources to work on more complex customer inquiries and more valuable strategic initiatives.

#### **2.4.2 The practice**

Customer expectations are rising faster than companies' ability to meet them, leading to disappointed customers.

Companies are typically behind on the skills, technology and processes to manage the Internet channel in an efficient and integrated way.

Companies are avoiding e-service, because they fear it will overload their call centre, swamping already stretched customer service staff.

Automation may work 90% of the time, but the 10% where it does not work can create frustrated and angered customers who spread the bad word. Tom Rearick (2005) says that "the most expensive form of service is self-service that does not work – this simply trains the customer to pick up the phone."

Can customer loyalty based on human interaction coexist with the growing trend of self-service technologies that remove humans from the mix?

Research shows that self-service and customer loyalty can exist side by side and actually improve each other's effectiveness. Automating processes certainly removes human interaction. Removing bottlenecks in processes gives companies more time to interact with customers during other inflection points. According to eCRM (2002), companies are too focused on interactions at the beginning (and end) of the customer experience. Now that computers and self-service kiosks are automating these processes (and removing human interaction), companies must find other moments that are ripe for interaction. They need to identify these other inflection points and use them to build customer loyalty.

The biggest longer-term challenges are not technological, but centered around bringing people and processes up to speed (re-engineering). It must be done, because customer service is ultimately about customers' trust in the organisation – about the brand – and this is increasingly vital for business survival and success (eCRM, 2002). Analyst Bytes and Statistics (2004) argues that organisations do not have to invest in costly focus groups to find

out what their customers think of their products and services. Customers routinely share their complaints (and their praise) with online chat and e-mail enquiries from the self-service website.

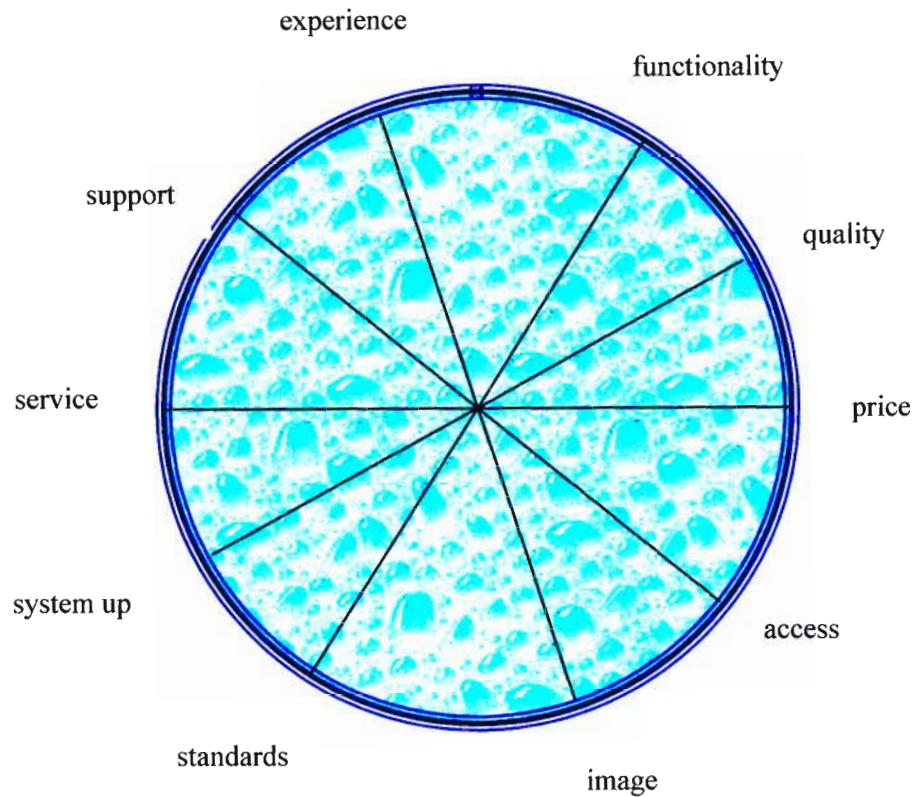


Figure 2.3 Factors that impact on customer perceptions of “value”

## 2.5 ELECTRONIC WRITING PRINCIPLES

The following good practice web principles were identified by the University of the Free State in their Web Communication Policy (Fisher A, 2004):

### 2.5.1 Quality

Good writing – clear, concise, to the point, complete and accurate, grammatically and stylistically correct.

### **2.5.2 Accuracy**

The site is an important reference resource for customers. Care should be taken to ascertain the accuracy of all content.

### **2.5.3 Timeousness**

Information published on the website must never grow outdated and must be updated without delay to enhance the value and usefulness of the website for users.

### **2.5.4 Usability**

A fundamental publishing and organising principle in website publishing is meeting users' needs. Information should be relevant and user friendly. A handy guideline is to think "outside-in" - to put oneself in the customer's shoes and provide the information that the customer wants.

### **2.5.5 Terminology**

Always use plain language and avoid abbreviations and acronyms with which international readers may not be familiar. Cilliers (1997) provides the following explanations for a better understanding of Internet terminology:

*Cyberspace* – William Gibson, its creator, defined it as a consensual hallucination of visually-realised data achieved through plugging into a global computer network (Gibson, 1984).

*Electronic mail or e-mail* – This is a fast, easy and inexpensive way to communicate with customers around the world.

*Internet* – The Internet is a computer network that connects millions of computers globally to provide worldwide communications to a variety of customers (Microsoft Frontpage 1997).

*World Wide Web (WWW)* – The WWW is an Internet service providing an easy to use point-and-click graphical interface. The WWW is interactive, because it combines graphics, text, sound and animation (Microsoft Frontpage 1997).



## 2.6 THE INTERNET

### 2.6.1 The psychology of the Internet

Patricia Wallis (1999) explored the psychological aspects of cyberspace. She sees it as a virtual world in which people from around the globe are acting and interacting in many ways. Drawing on research in the social sciences, communications, business and other fields, Dr Wallace examines how the online environment can influence the way users behave and claims that business has a rare window of opportunity to influence the course of its development as a business technology that can support many kinds of business activity.

### 2.6.2 The African Internet

The African Internet Status Report (2005) shows that the use of the Internet has grown relatively rapidly in most urban areas in Africa - in much the same pattern as the adoption of the mobile phone which followed shortly after. As an indication, five years ago, only a handful of countries had local Internet access, now it is available in every capital city. Although these are encouraging trends, the differences between the development levels of Africa and the rest of the world are much wider. In this area they are using more traditional measures of development. Of the approximately 816 million people in Africa in 2001, it was estimated that 1 in 4 had a radio, 1 in 13 had a TV, 1 in 35 had a mobile phone, 1 in 40 a fixed line, 1 in 130 a PC, 1 in 160 used the Internet and 1 in 400 had pay-TV.

In Africa, each computer with an Internet or e-mail connection usually supports a range of three to five users. This puts current estimates of the total number of African Internet users at around 5-8 million, with about 1.5-2.5 million outside of North and South Africa. This is about 1 user for every 250-400 people, compared to a world average of about one user for every 15 people, and a North American and European average of about one in every 2 people. The UNDP World Development Report (2002) figures for other developing regions in 2000 were: 1 in 30 for Latin America and the Caribbean, 1 in 250 for South Asia, 1 in 43 for East Asia, 1 in 166 for the Arab States.

The researcher's perspective is that since the 1994 democracy in South Africa, the Internet access rate is now much closer to the world average due to transformation in the office environment, economic growth in the previously disadvantaged communities and easy access to Internet cafes and mobile phones.

### 2.6.3 Assessing the value of the Internet

Value	Dimension		
	Time	Distance	Complexity
Knowledge			
Creativity			
Relations			

Table 2.3 TDC Matrix (Tiggelaar); (12manage.com; 2005)

The Time Distance Complexity Matrix (TDC Matrix) of Ben Tiggelaar (2005) in table 2.3 above is a framework that can help to assess the value of Information Technology in general, and the value of the Internet in particular.

The TDC matrix is a tool that can assist with establishing the value of controlling time, distance and complexity on information creativity and to analyse activities through which firms can create value and competitive advantage. The TDC matrix can be used throughout the entire strategy process of vision, mission, strategic analysis, strategic decision-making and strategy implementation to assess the value of the Internet.

## 2.7 ORGANISATIONS AS SYSTEMS

Management studies have started to view organisations from a new perspective: *a systems perspective* (McNamara, 2005). With changes facing organisations and how they operate, managers have come to accept this new way of looking at operational issues. This interpretation has therefore brought about a paradigm shift in the way management views organisations. The day-to-day function of every business involves people: employees, stockholders, customers, managers, executives and frontline staff. The dynamics that exist among these people impact the effectiveness of the organisation and, therefore, the bottom line (www.OD Interventions, 2000).

One of the methods in understanding the application of systems theory is systems analysis. One of the tools of systems analysis is systems thinking. Systems thinking is a way of helping

managers to view the world, including organisations, from a broad perspective that includes structures, systems, patterns and events, rather than just the events themselves. This broad view helps with identifying the real cause of operational issues and how to work to address them.

As personal relationships, technologies, jobs, organisations and communities continue to grow increasingly complex and interdependent, the occurrence of integration will increase. At the same time the chances of any integration issue remaining local will diminish. Almost any design change reverberates through a web of interconnections, producing a wave of counter-reactions that are widely-distributed in both space and time. Only by increasing appreciation for the growing use of information technology can we function as responsible web-mates (Richmond, B., 1995).

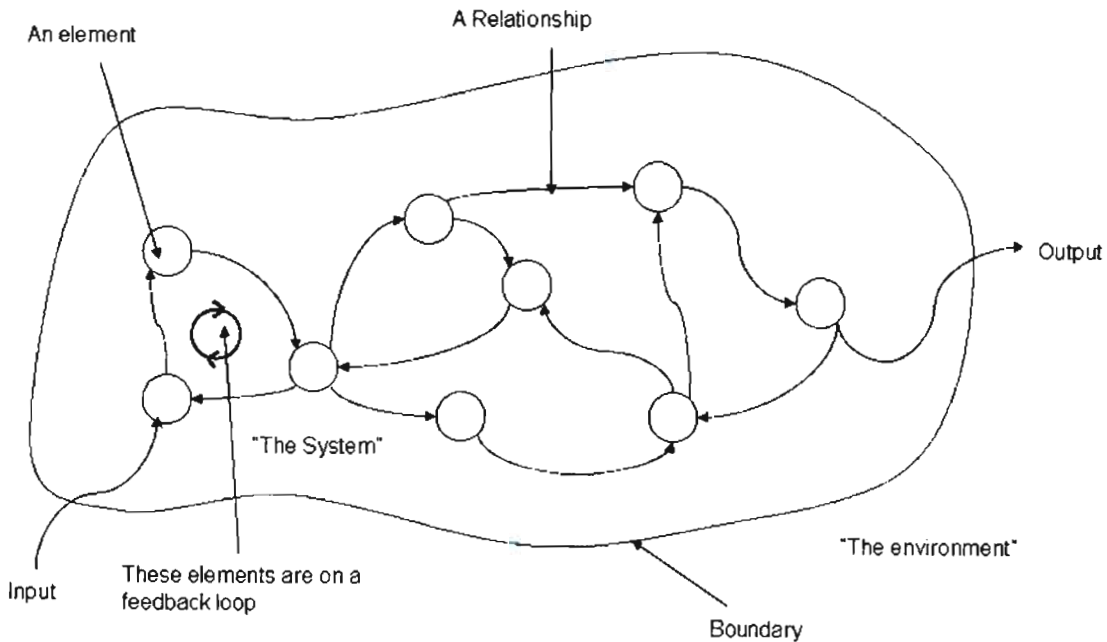


Figure 2.4 A system interdependency (Burns, S; 2005).

The concepts and interdependency of a system are shown in Figure 2.4. Systems mapping is one of the basic concepts and strategies of systems thinking. It shows the internal elements which interact to create the system, as well as the external elements which influence the system. (TMA01, 2004, p.1).

Technological progress affects the business as a whole (Mouton, et al., 2004). The progress is dependent on three criteria, namely computer and communication technology supporting self-service; integration with other business systems and the paradigm shift necessary to accommodate one of the most important objectives of every retail business – satisfying customers. "An empowered organisation is one in which individuals have the knowledge, skill, desire, and opportunity to personally succeed in a way that leads to collective organisational success" (Covey, S.R., 2005).

The management of organisational change has become a normal part of a manager's role. Change is regarded as the norm and periods of stability are taken as the exception for many organisations operating in the current era. One of the taken-for-granted assumptions about managing change is that managers have a competent understanding of what organisations are and how they function. Millett (2005) claims that most managers do not have the sort of understanding required to manage change. While they feel comfortable under conditions of stability, they have not been exposed to a wider range of concepts and models about organisations that provide a more useful framework for dealing with the contemporary challenges they face in terms of change.

### **2.7.1 Organisational culture**

Culture is, by definition, shared. Handy (2001) distinguishes between role cultures, power cultures, task-centred cultures and person-centered cultures and suggests that these are often associated with different organisational structures. Role cultures are often found in bureaucracies and a respect for the system. Power cultures are found in organisations dominated by individuals or groups. Task-centered cultures are found in small organizations and person-centered cultures in social groups or barristers' chambers. The organisation becomes the means by which people meet these objectives.

## 2.7.2 Organisational decision-making

### Rational decision making

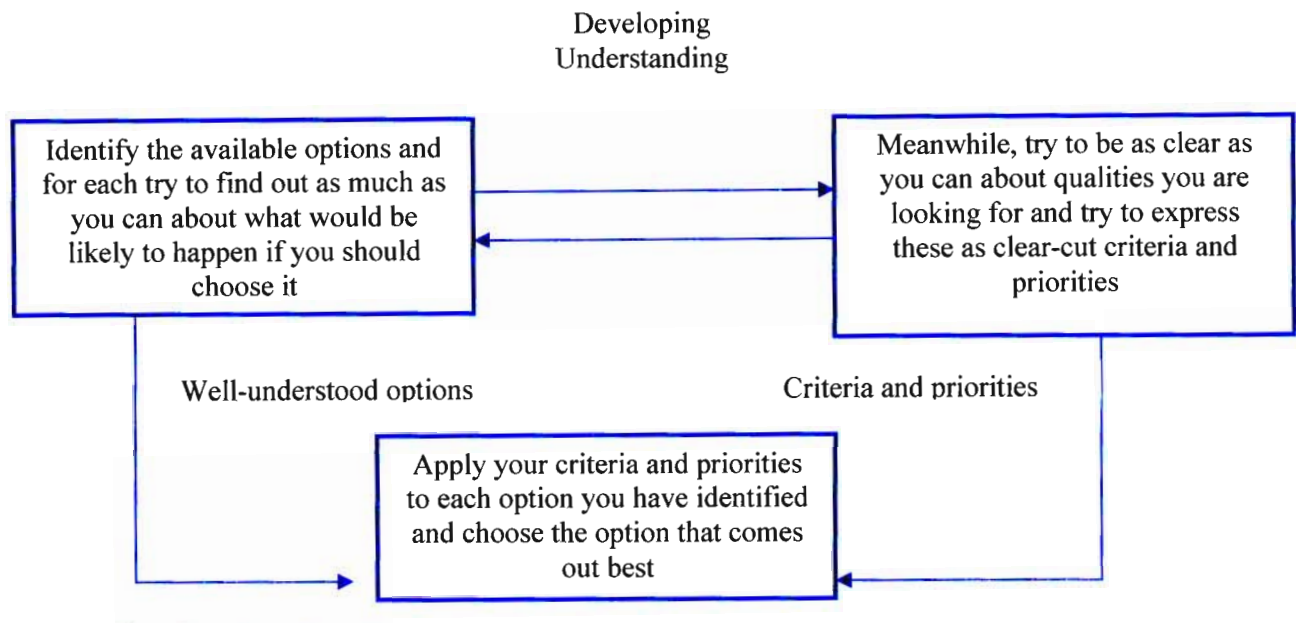


Figure 2.5 Rational decision making; Farmer & Martin (2002)

Rational decision-making takes the view that people are free to choose what they do and that they will normally exercise this choice in a sensible way, looking for the best means to achieve their goals by applying criteria and priorities to each option identified.

### 2.7.3 Self-service as an organisation “brand”

Bill Clinton (2005) once said that “a brand for a company is like a reputation for a person. You earn reputation by trying to do hard things well.” According to Rita Clifton from a leading specialist brand consultancy firm, a brand is “a mixture of tangible and intangible attributes, symbolised in a trademark, which, if properly managed, creates influence and generates value.” Other common descriptions of a brand include a ‘relationship’, a ‘reputation’, a ‘set of expectations’ and a ‘promise’ - an organisation’s promise to consistently produce quality service.

The challenge for management is to choose or create a market position where the company's distinctive competence and resources could produce a competitive advantage (Collis, D., 1997). Change is the one constant in the business environment and how to manage this

change is a big challenge. The operative words today are speed and connectivity. Through the Internet people are discovering new ways to share knowledge with blinding speed.

#### **2.7.4 Organisational customer segmentation**

Customer segmentation is the subdivision of a market into discrete customer groups that share similar characteristics. Common utility segmentation is residential, commercial, industrial and agriculture. Prepaid customers are an additional segment for Eskom. This segment is hardly a segment in overseas utilities.

Segmentation is a powerful means to identify unmet customer needs. Organisations that identify underserved segments can achieve a leadership position by being the first to serve them. Understanding the specific needs of each segment enable organisations to develop tailored product offerings or marketing programme for groups of customers with similar purchase criteria. Customer segmentation is most effective when an organisation tailors offerings to segments that are the most profitable and targets them where the company has a distinct competitive advantage, such as Eskom's prepaid customers. Customer segmentation can be used as the principal basis for allocating resources to customer service and delivery programme. Customer segmentation requires managers to:

- Divide the market into meaningful and measurable segments according to customers' needs, their past behaviours or their demographic profiles;
- Determine the profit potential of each segment by analysing the revenue and cost impacts of serving each segment;
- Target segments according to their profit potential and to the company's ability to serve them in a proprietary way;
- invest resources to tailor product, service, marketing and distribution programme to match the needs of each target segment.
- Measure performance of each segment and adjust the segmentation approach over time as market conditions change.

Organisations can use customer segmentation to:

- Prioritise new product development efforts;
- Develop customised marketing programme;
- Choose specific product features;
- Establish appropriate service options and service channels;

- Design an optimal distribution strategy;
- Determine appropriate product pricing.

### **2.7.5 Organisational web services' role: From webmaster to web manager**

This section highlights the roles and responsibilities of the webmasters and how these roles have changed since the WWW began, created by the demand for greater business and marketing tools in the form of websites, Intranets and Extranets to support customer self-service.

#### *The manager*

Management decides what should be done and how it should be done, as well as when it should be done, and ascertains whether it has been done. This is generally known as the management activities. In short: planning, organising, leading and controlling (De J Cronje, 1991).

In an organisation, planning is the activity that determines the missions and goals, and the ways in which these goals and objectives are to be obtained. Once the goals and objectives have been identified, resources have to be allocated, procedure set and roles defined that will enable the organisation to achieve its objectives.

Leading involves ensuring staff are motivated and influenced. Management must open the channels and initiate communication between management and staff and among staff. Good and effective communication has a positive effect on the climate prevailing within the organisation.

Controlling could be defined as constantly confirming whether the organisation is on course towards achieving its goals and objectives (Cronje, 1991).

By concentrating on the management activities, the web manager is involved in the planning, organisation, leading and controlling of the web environment, performing management functions such as decision-making, motivation, co-ordination, budgeting, etc. As in any field, the web manager should have a working knowledge and experience of a WWW environment, including layout design, content, navigation, etc. To understand the complex challenges and opportunities, management need to understand this new perspective that is being driven by

substantive changes in the world and embrace the proverb “Where there is chaos, there is opportunity” (Beckford, N.B., 2005).

Web applications that automatically support customers in some activities are especially attractive to companies in the mass market. These applications can help save costs in the service area and can be termed self-service assistants.

“Utility to cut costs by \$1M using the Web” - A Water firm aims for quarterly savings of \$1 per customer (New Media Computing, 28 Sept 1999). Sutton and East Surrey Water (SESW) claims it will slash its billing costs by \$1million annually by introducing an Internet-based payment scheme. A Mori poll estimated that 50% of its customers have access to the Internet. Assuming that eventually all of its 260,000 customers will use the service, the company estimates it will save \$1 in postage and stationery costs for each customer each quarter. In South Africa the South African Post Office (SAPO) rebates about R11 per item for non-human intervention, excepting that the postal code and the suburb is correct for postal delivery, having used their software as a validation method (Wessels, J., 2005).

In an article “The Currency of the 21<sup>st</sup> Century” (Yudkowsky, C., 2002), the author writes that governments, financial institutions and others have spent a great deal of time and money thinking about the way business is transacted. Alternatives to conventional currency include cheques, credit cards, debit cards, electronic fund transfers and even a cheque by fax. Still, a more holistic challenge is how to leverage the efficiency of the Internet and other digital connectivity to further enhance the transaction process.

In “Looking into Intranets and the Internet Advice for Managers”, Anita Rosen (1997) investigates how and where to implement Internet technologies in the organisation and the benefits and practicality of creating a website for the organisation. She also believes that the Internet provides organisations with a paradigm shift. When employees have access to information at their desks, wherever their desks may be, less time is spent finding and re-creating information and more time is spent intelligently processing and using information.

To remain competitive, companies need to disseminate information faster and more easily to customers. Organisations that are attempting to maintain quality services on smaller budgets need more mechanisms to support clients. With e-mail, information can be sent in its original spreadsheet form, making it easy to read and print, and saving the customer the time of



retyping the information. Popular information can reside on this site. Customers can independently access the site, increasing productivity and providing better support to customers.

Besides the inherent benefits of using Internet technology, companies are finding that Internet technology is low-cost and provides excellent functionality.

### **2.7.6 Organisational customer service structure and process requirement**

Internet support centres are easier to staff than traditional phone support centres. Internet people do not expect instantaneous responses. Generally it is understood that questions will receive a response within 24 to 48 hours. This will help a manager sidestep the traditional constraints of nine-to-five phone staffing. People that could not be considered in the past due to their verbal limitations can now be used in Internet response centres. There are deaf people with audio readers, or people who have difficulty in understanding accents who might be excellent candidates for an e-mail response centre.

### **2.7.7 Organisation readiness for OD**

A formula, attributed to David Gleicher (1995), can be used to decide if an organisation is ready for change:

$$\text{Dissatisfaction} \times \text{Vision} \times \text{First Steps} > \text{Resistance to Change}$$

Three components must be present to overcome the resistance to change in an organisation: dissatisfaction with the present situation, a vision of what is possible in the future, and achievable first steps towards reaching this vision. If any of the three is zero or near zero, the product will also be zero or near zero and the resistance to change will dominate.

David Kolb of Case Western Reserve University in Cleveland Ohio quotes, "Life is a series of experiences which make us what we are. The learning cycle is that we reflect upon the experiences that we have just had. Thirdly we draw out some concepts and some principles from this reflection. Finally, we test out the new concepts in new situations so that they become part of the ongoing experience, on which we shall continue to reflect, and so on in a never-ending circle or even spiral." (Wille, et al., 1991.)

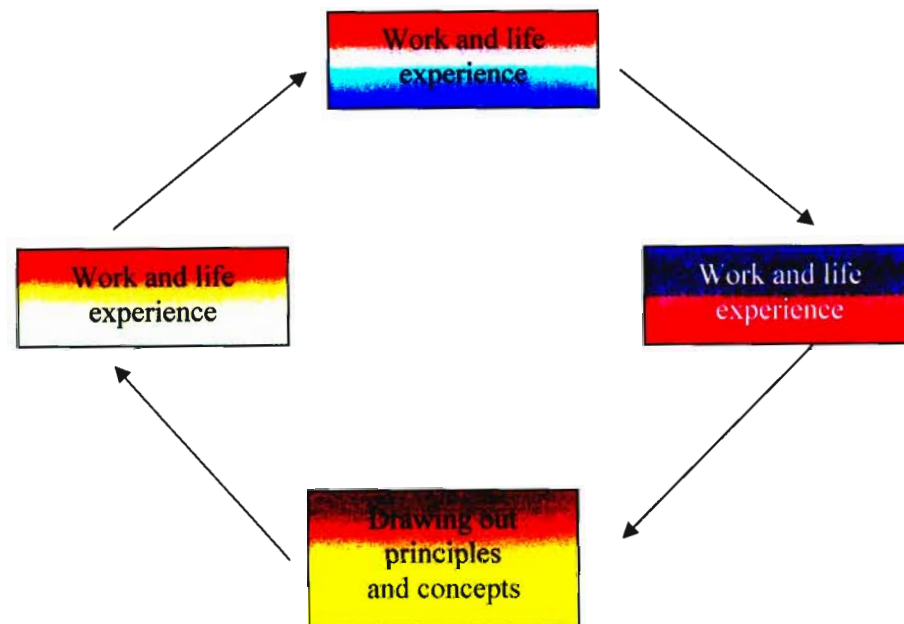


Figure 2.6 The learning cycle (Kolb, 1991)

Both Kolb and Revans agree that “Change is Learning”. They further quoted “When you learn, you change. When you change, you learn.” (Wille, Edgar, et al. 1991).

Once people have accepted that the world will never be the same again, new opportunities may present themselves. In order for an organisation to remain competitive in today’s global market, it has to recognise change as an ongoing occurrence and tackle it with fresh enthusiasm every time.

#### 2.7.7.1 Seven-S framework OD model

In line with the approach of the theories discussed earlier, the researcher has chosen the Seven-S model to deploy Internet self-service OD intervention, as it caters for the interconnectedness written about by the BPR experts, Hammer and Champy. The model was developed by Tom Peters and Robert Waterman. The framework represents a holistic view of business, and remains a useful tool to apply in managing and setting direction for any business.

The framework is based on the theory that an organisation is not just “structure”, but is comprised of seven elements distinguished by the “hard” Ss and “soft” Ss. The hard elements, structure, strategy and systems, are practical and easily identifiable and can be found in

strategy statements, plans, charts and the like. The four soft Ss, skills, staff, style and shared values, are somewhat less easily discerned and less tangible. Continuously evolving and changing, the soft S's are determined by the people at work in the organisation and hence, are difficult to anticipate or to influence. Although subterranean in nature, they can and do have a great impact on the hard Ss, structures, strategies and systems, of the organisation.

The Seven-S diagram depicts how each of the elements influences, and is influenced by all of the other elements.

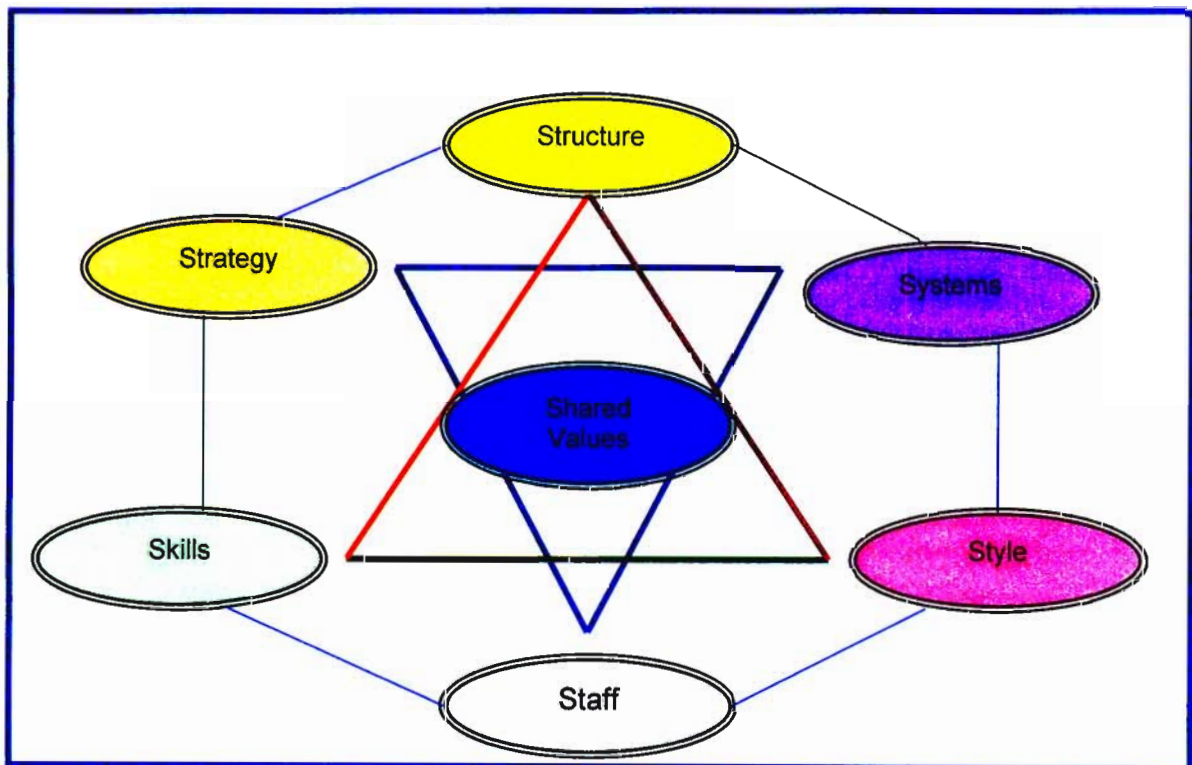


Figure 2.7 The Seven-S diagram (copyright 2005 Manyworlds, Inc)

### The Hard Ss

*Strategy* – action leading to fulfillment of the goals of the organisation. Strategy includes analysis of the organisation's resources, its customers, environment, competition, strengths and weaknesses.

*Structure* – Salient features of the organisation chart (centralised, decentralised, matrix) or a description of the separate entities of the organisation and their relationships to one another.

*System* – the processes, procedures and routines inside the organisation.

### **The Soft Ss**

*Style* – the culture and behaviours of the organisation and it's top management.

*Staff* – Attributes of staff, including their numbers, education and specialities.

*Skills* – Characteristic capabilities of the organisation, including the capabilities of its staff.

*Shared Values* – (also called “super-ordinate goals”). They are the central guiding concepts and beliefs of the organisation and all its members, dictating the orientation of the organisation towards all its objectives.

#### **2.7.7.2 Action research and OD**

Hillison (2005) wrote about the “why?” purpose of historical research as follows:

- To create awareness of what has happened in the past so as to learn from past experiences, both successes and failures.
- To learn how things were done in the past so as to not reinvent the wheel.
- To assist in prediction.
- To test hypotheses concerning relationships and trends.
- To help understand present policies and procedures; to gain perspective.

Benbasat and Smud (1999) claims that the information systems research community has responded to the call for more of an emphasis on conducting qualitative research. Lee (2001) suggests that information systems research is more than just the study of technology of behaviour. Information researchers must deal with the phenomena that emerge when the technology and the behaviour interact. There is a growing community of information systems researchers who are conducting investigations from a qualitative perspective (Hunter, M.G., 2005).

Theory	Approach	Technique
Grounded theory	Discovery of theory; data analysis.	Categories emerge from data property: attribute of a category.
Personal construct theory	Personalised system for interpreting past experiences.	Elicited using elements, constructs, elicitation, laddering.
Narrative inquiry	Recounting of personal experiences.	Contextually rich (experienced first-hand) Temporally bounded (beginning, sequence of events, ending) Long interview technique (grand tour questions, planned prompts, floating prompts).

Table 2.4 Qualitative theories (Hunter, G., 2005)

In “The Truth about Web Self-Service” (eGain Communications; 2005; p. 2-11), the article says that self-service is “in” among businesses. In the quest for efficiency in customer care, customer service organisations are implementing aggressive self-service processes using the web-, Internet- and phone technologies.

A White Paper highlights five myths frequently encountered in the context of self-service strategies and implementations. Based on hundreds of enterprise implementations, each myth was analysed and a proven industry best practice offered to counter the myth.

### 2.7.8 Organisational development and change

Action research is a process which serves as a model for most OD interventions. French and Bell (1995) describes action research as a “process of systematically collecting research data about an ongoing system relative to some objective, goal, or need of that system; feeding data back into the system; taking actions by altering selected variables within the system based both on the data and on hypothesis; and evaluating the results of actions by collecting more data.” (Rouda, R, 2005). This is manifested in the ongoing feedback loop from customer interactions such as e-mails and questionnaires.

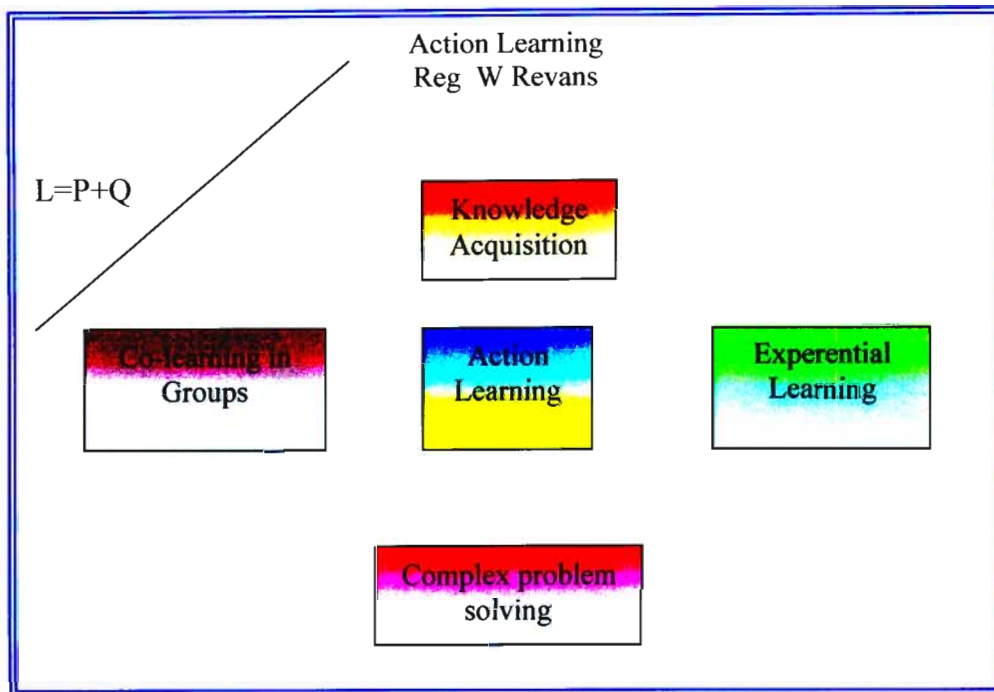


Figure 2.8 Action learning (12manage.com, 2005)

Each of these activities can be regarded as a necessary component, but insufficient by itself to be considered action learning. Reg Revans (2005) describes action learning with the formula  $L=P+Q$ , where Learning (L) occurs through programmed knowledge, and insightful questioning (Q).

### 2.7.9 Organisational approach to migrate customers to self-service

OD interventions can assist customers to adopt to the accelerating rate of change brought about by market forces, embrace the demands of new technologies and processes, make long-range comprehensive transformations versus quick fixes, initiate and manage change, particularly complex change, foster employee alignment and commitment to new ways of working, expand everyone's ideas, beliefs and behaviours to solve problems and develop the organisation's fitness for continuous innovation and renewal (Sterling Insights: OD, 2004)

An internal OD intervention for successful self-service would be the principle of "applying criteria to goals". Here leadership establishes objective criteria for the outputs of the organisation's goal-setting processes. People are held accountable for producing the desired results. (Jones J.E., 2005).

## 2.8 CONCLUSION

This chapter dealt with topics related to the medium, method, message, organisational development and change aspects related to customer expectations, which can be supported by the Internet and voice technology, provided the organisational environment and the systems integration required in the self-service technology in the workplace is in place.

The 7<sup>th</sup> Merchants Global Call Centre Benchmarking Report states that the trend towards self-service is set to continue as speech recognition technology is predicted to grow by almost 180%, with 6% currently using the technology and a further 17% planning to install it over the next 12 months. The growth of self-service channels can be explained by the report's conclusion that customers' calls are more likely to be resolved through self-service channels (76% resolution) than through assisted service that requires an agent to initially handle the call (50%).

The theoretical framework has gathered information from the case studies, customer perception surveys, benchmarking results, articles and books to continue with the research design and methodology in Chapter 3.

## CHAPTER 3

# RESEARCH DESIGN AND METHODOLOGY

*Cohen and Manion wrote in 1980 that “Man has long been concerned to come to grips with his environment and to understand the nature of the phenomena it presents to his senses. The means by which he sets out to achieve these ends may be classified into three broad categories: experience, reasoning and research”.*

*(Cilliers, W. J, 1990)*

### 3.1 INTRODUCTION

The purpose of this chapter is to review and discuss the study’s research design and methodology approach, which covers systems thinking and qualitative research guidelines used in the system of interest - the study of customer self-services.

A research design is a strategic framework for action that serves as a bridge between research questions and the implementation of the research (Mouton & Marais; 1990).

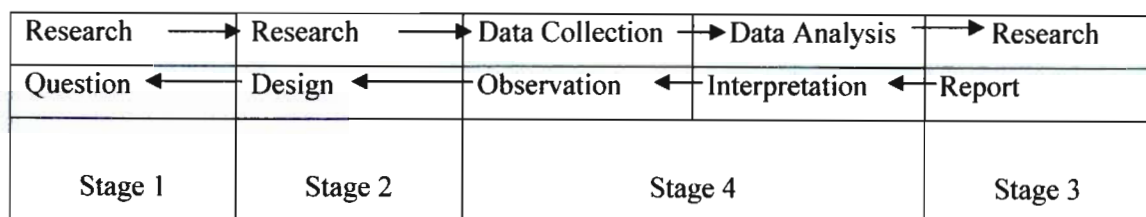


Figure 3.1 The research process (Terre Blanche & Durrheim; 1999)

Terre Blanche & Durrheim (1999) describes research as a process consisting of four stages:

Stage 1: Defining the research question

Stage 2: Designing the research



Stage 3: Executing the research (data collection and analysis)

Stage 4: Writing up the research report (findings)

In Figure 3.1 the bi-directional arrows link the five research activities that make up the research process. The arrow on top indicates that the research process is made up of a sequence of activities, beginning with the research question and ending with the report. By emphasising a model of research as a progressive sequence of events, Bickman, Rog & Hendrik (1998) and Mouton & Marais (1990) labelled research design as “architectural blueprints.”

### 3.2 RESEARCH METHODOLOGY

The research methodology does not only focus on approaches directly related to the web self-service. The author explores the nature of systems thinking and how the use of metaphors can be applied to the understanding of systems and how users interpret the use of systems.

A wider holistic approach allows for reasoning in a consistent manner. In the absence of such an approach, a customer or client can be left wondering what the basis actually is for conclusions that will have a significant impact on the design.

Secondly, the “systems approach”, used well, is a method for designing decisions.

### 3.3 PRINCIPLES OF RESEARCH DESIGN

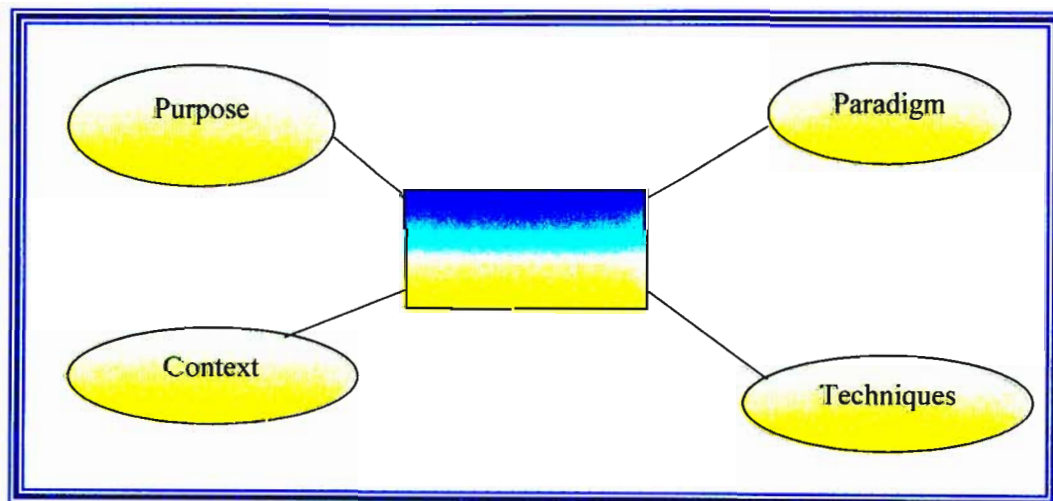


Figure 3.2 Four dimensions of design decisions (Terre Blanche & Durrheim, 1999)

In developing a research design, a series of decisions have to be made along the four dimensions as shown in Figure 3.2. Multiple considerations deriving from these four dimensions must be woven together in a coherent research design in a way that will maximise the validity of the research findings (Terre Blanche & Durrheim; 1999).

### 3.4 RESEARCH QUESTION

In order to achieve the aim, the following research question is relevant:

Can self-service options sustain the quality of service and make it cost-efficient for both the customer and a utility?

There are sets of activities that have to feel, to the customer, as though they're being delivered locally, but can in fact be delivered remotely, provided the person performing the activity has the necessary information (virtual organisation).

*Certain customer service activities can be performed anywhere,  
e.g. the creation of bills from a centralised system*

*Certain activities need to be localised in order to be truly responsive,  
e.g. system maintenance*

*Finally, there is a set of activities that had to feel to the customer as though they are being delivered locally, but can in fact be delivered remotely, provided the person performing the activity has the necessary information: (Virtual Internet Site) : e.g. power outages*

### 3.5 THE NATURE OF SYSTEMS THINKING

*Thinking strategically is thinking systemically is thinking logically.* "This new paradigm requires thinking in terms of whole systems in order to see a business as part of a wider economic ecosystem and environment." (Moore, J., 1997). The concept "system" is used, not to refer to things in the world, but to a particular way of arranging thoughts about the world around our mental models.

Mechanistic thinking adheres to analysis and reductionism, claiming that objects, events, and their properties can be understood in terms of ultimate elements. Example - organisations that fail to perform well as a whole when the parts are all independently optimised. Systems thinking highlights the interdependence of the parts and recognise the interactions between all the elements, making up a complex situation.

#### 3.5.1 The usefulness of systems thinking

Researchers are often asked whether systems thinking has been useful in their studies. Below are five different opinions from Open University students who have used this approach with great success.

*Frances Chapman (T205, 2002)* writes that systems thinking helps extend the natural way of thinking. It is a tool for handling complexity understanding around interactions. It helps to retain an open mind and work towards a more balanced viewpoint."

*John Robles (T205, 2002)*

"Systems thinking allows researchers to tackle problems not only in a scientific way, but in a holistic way which demonstrates a caring approach to all persons at all levels connected with the problem or system(s) involved."

*Paul Warren (T205, 2002)*

"Systems thinking provides a formal recognised framework to explain organisational events, and other happenings, which hitherto had to be explained by vague notions of 'common sense.'"

*Sarah Smith (T205, 2002)*

“Systems thinking gives a new and better way to view complex situations, both in organisations and personally.”

*Bob Saunders (T205, 2002)*

“It allows researchers to take a holistic view of situations in the research study and subsequent project management implementation. Many projects fail because consideration of the human element is omitted, or badly covered by the project manager. ‘Systems’ helps to grapple with complexities.”

Systems thinking acknowledges that researchers do not all share the same view of situations or issues. A researcher’s perspective (their view, what they notice or don’t notice about a situation, or the aspects they tend to focus on) is coloured by their specific interest in the situation and by their previous experience and knowledge (narrative inquiry approach).

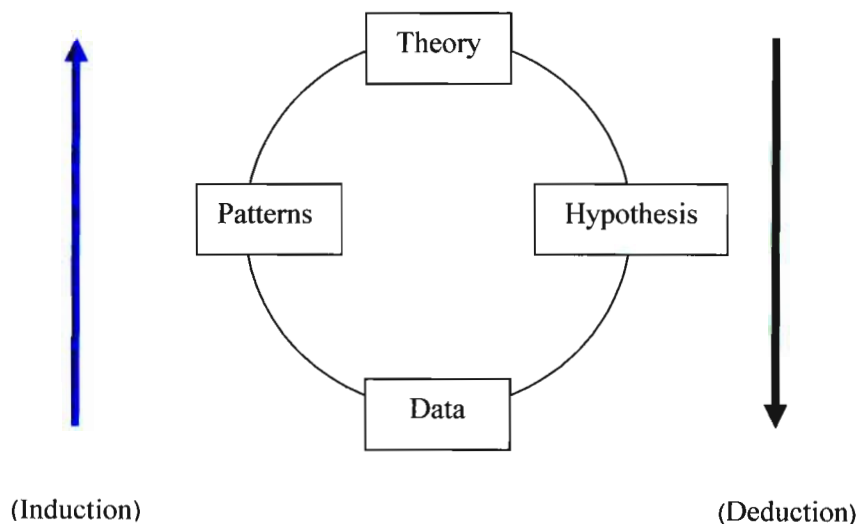


Figure 3.4 The research wheel (A system of sytem’s methodology); (Flood&Jackson, 1991)

Figure 3.4 shows that theories are based on assumptions, which rely on relevant data to support trends and patterns in research findings.

### 3.6 THE FIVE SYSTEMIC METAPHORS

Flood and Jackson (1991) describes the five metaphors that people frequently apply to their understanding of systems as the machine metaphor or closed system view, the organic metaphor or open system view, the neurocybernetic metaphor or viable system view, the cultural metaphor and the political metaphor.

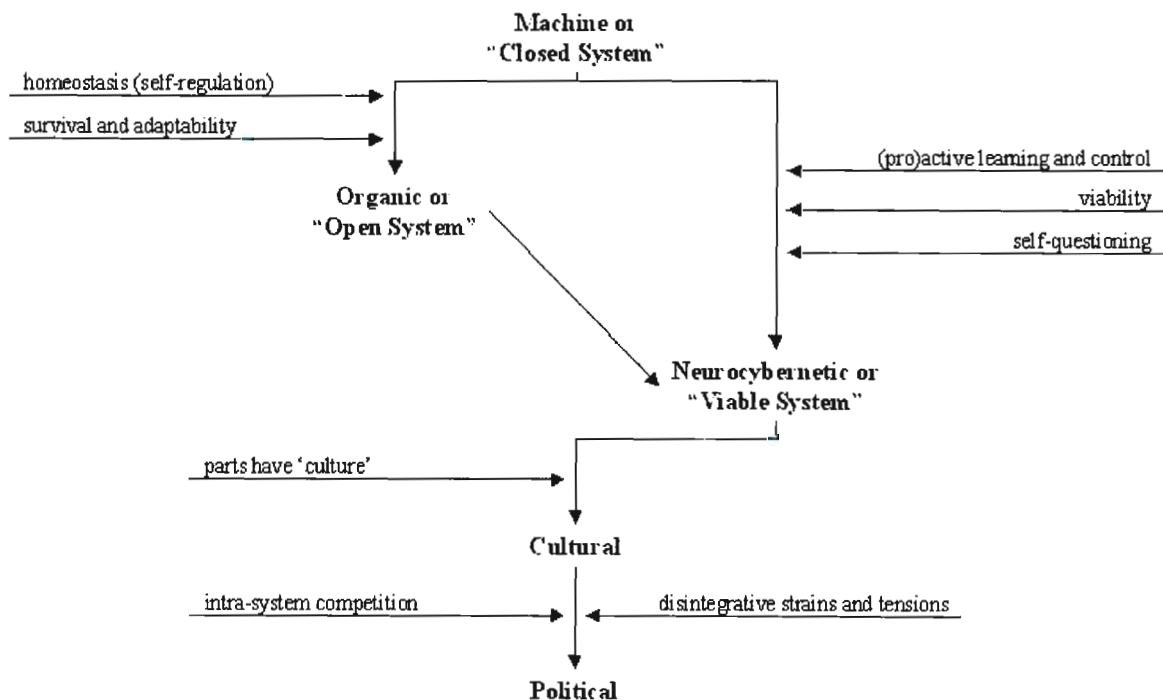


Figure 3.5 The five systemic perspectives (www.ChrisFoxInc.com; 2005)

The relationships between these metaphors are indicated in the figure above. Ackoff and Gharajedaghi (1984) similarly describes a mechanistic model, organismic model and social model.

#### 3.6.1 Machine metaphor or closed system view

In management and organisation theory, the machine view is typified by theories of bureaucracy (Weber, 1995) and scientific management (Taylor, 1985). Much emphasis is placed on the efficiency of the parts.

### **3.6.2 Organic metaphor or open system view**

The organic metaphor incorporates ideas drawn from studying phenomena from several levels. The organic view is useful in practice when there is an open relationship with a changing environment and when the environment itself is complex, containing a variety of competitors.

### **3.6.3 Neurocybernetic metaphor or viable system view**

In management and organisation theory, attention is focused on information processing and viability.

### **3.6.4 Culture metaphor**

In organisation and management theory, corporate culture has been recognised as a useful way of promoting collaborative and community-like spirit.

### **3.6.5 Political metaphor**

The political metaphor focuses on issues of interest, conflict and power.

### **3.6.6 Morgan's images of an organisation**

Morgan selects the following 8 metaphors or views of organisations (Fox, A., 2005).

#### **3.6.6.1 Machines**

Efficiency, waste, maintenance, order, clockwork, cogs in a wheel, programmes, inputs and outputs, standardisation, production, measurement and control, design.

#### **3.6.6.2 Organisms**

Living systems, environmental conditions, adaptation, life cycles, recycling, needs, homeostasis, evolution, survival of the fittest, health, illness.

#### **3.6.6.3 Brains**

Learning, parallel information processing, distributed control, mindsets, intelligence, feedback, requisite variety, knowledge, networks.

#### **3.6.6.4 Cultures**

Society, values, beliefs, laws, ideology, rituals, diversity, traditions, history, service, shared vision and mission, understanding, qualities, families.

### 3.6.6.5 Political systems

Interests and rights, power, hidden agendas and back room deals, authority, alliances, party-line, censorship, gatekeepers, leaders, conflict management.

### 3.6.6.6 Psychic prisons

Conscious and unconscious processes, repression and regression, ego, denial, projection, coping and defence mechanisms, pain and pleasure principle, dysfunction, workaholism.

### 3.6.6.7 Flux and transformation

Constant change, dynamic equilibrium, flow, self-organisation, systemic wisdom, attractors, chaos, complexity, butterfly effect, emergent properties, dialectics, paradox.

### 3.6.6.8 Instruments of domination

Alienation, repression, imposing values, compliance, charisma, maintenance of power, force, exploitation, divide and rule, discrimination, corporate interest.

## 3.7 SYSTEM METHODOLOGIES

Courprie, et al., (2002) gives a good explanation of hard and soft problems in their article "Soft Systems Methodology."

Hard problems are problems characterised by the fact that they can be well-defined. One assumes that there is a definite solution and one can define a number of specific goals that must be accomplished. In essence, with a hard problem one can define what success will look like prior to embarking on implementing the solution. The "WHAT" and the "HOW" of a hard problem can be determined early on in the methodology.

Soft problems, on the other hand, are difficult to define. They will have a large social and political component. When we think of soft problems, we don't think of problems, but of problem situations. We know that things are not working the way we want them to and we want to find out why and see if there is anything we can do about it. It is the classic situation of it not being a "problem" but an "opportunity."

Soft systems methodology is divided into seven distinct stages. These are;

1. Finding out about the problem situation. This is basic research into the problem area.

Who are the key players? How does the process work now?, etc.

2. Expressing the problem situation through rich pictures. As with any type of diagram, more knowledge can be communicated visually. A picture is worth a thousand words.
3. Selecting how to view the situation and producing root definitions. From what different perspectives can we look at this problem situation.
4. Building conceptual models of what the system must do for each root definition. One has basic "whats" from the root definitions. Now begin to define "hows."
5. Comparison of the conceptual models with the real world. Compare the results from steps 4 and 2 and see where they differ and are similar.
6. Identify feasible and desirable changes. Are there ways of improving the situation?.
7. Recommendations for taking action to improve the problem situation. How would one implement the changes from step 6?.

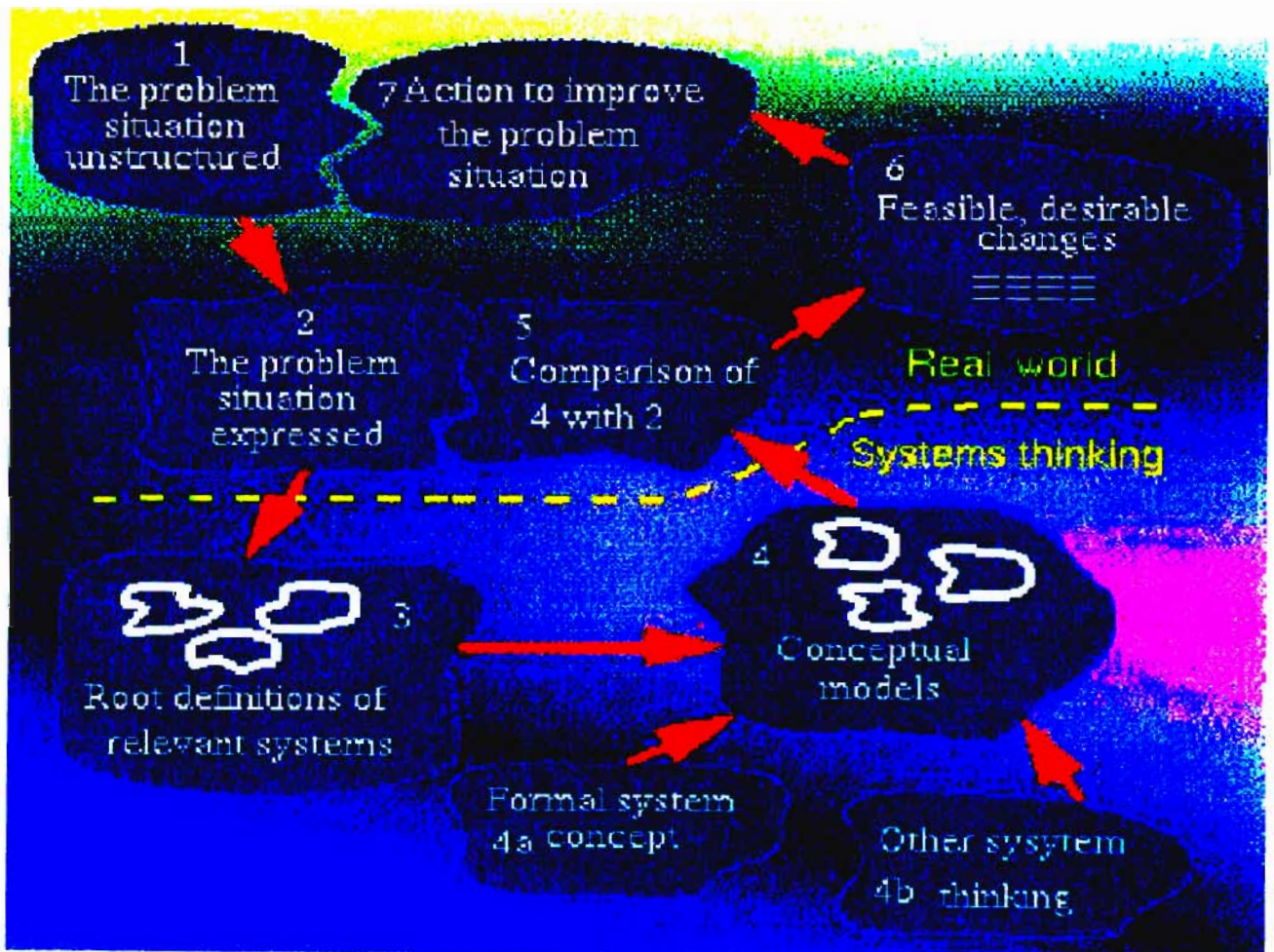


Figure 3.6. Soft Systems Methodology map (Couprie, et al., 2005)



Figure 3.6. shows that soft systems methodology is an iterative approach. Sometimes several iterations of these seven steps are required to produce good results.

#### *Assumptions of SSM*

- Assumes that most management and organisational problems cannot be seen as pure systems problems, as the system is far too complex to analyse.
- Nevertheless applying a systemic approach in a non-systemic situation is valuable.

#### *Strengths of the soft system methodology*

- SSM gives structure to complex organisational and political problem situations, and it can allow them to be dealt with in an organisational manner. It forces the user to look for a solution that is more than technical.
- Rigorous tool to use in messy problems.
- Specific techniques.

There are six elements that make a well-formulated root definition. They are summed up in the acronym CATWOE.

- Customer - everyone who may gain benefits from a system is considered a customer of the system.
- Actor - the actors transform inputs into outputs and they perform the activities defined in the system.
- Transformation process - this is shown as the conversion of inputs to outputs
- Weltanschauung - the German expression for world view. The world view makes the transformation meaningful in context.
- Owner - every system has some proprietor who has the power to start up and shut down the system (power of veto).
- Environmental constraints - these are external elements that must be considered. These constraints include organisational policies, as well as legal and ethical matters.

### **3.8 QUALITATIVE RESEARCH AND EVALUATION METHODS**

An article in “Systemics Network International” on the systems approach (2005) describes the practical benefit of a systems approach in research and project management as two-fold.

Firstly, when applied to the topic at hand, it permits exposition of assumptions and reasoning in a consistent and explicit manner. In the absence of such rigour, a client can be left wondering what the basis actually is for conclusions that will have a significant impact on its business. That impact is, after all, why advice is sought.

Secondly, systems concepts are powerful. They permit presentation of scenarios and relationships in a comprehensive manner and then provide a basis for deriving an optimal solution, taking account of the factors and perspectives in play. In short, the systems approach, used well, is a method for designing decisions. Those decisions are often transcribed in longer texts, be it in the form of a policy document, a negotiating position, a contract, a business plan, a survey plan, a set of evaluation criteria, or legislation.

Complexities are simplified by dividing the problem into sub-problems. This process of sub-division is continued until the results are simple enough to be analysed and understood (Chapman, J, 2002, p.1).

The Total Quality Management model (TQM) aims to achieve continuous improvement via the nine components of TQ&M through three fundamental principles and six supporting elements (Tenner A.R. and deToro I.J.N; 1992):

*Fundamental principles:*

- Customer focus - a total quality focus on the customers, internal and external.
- Process improvement - a focus on improving work processes to produce consistent acceptable outputs.
- Total improvement - a focus on the utilization of the talents of those we work with.

*Supporting elements:*

- Leadership
- Education and training
- Supportive structure
- Communication
- Reward and recognition
- Measurement

### **3.9 DEFINITIONS OF QUALITATIVE RESEARCH**

Silverman (1993) captured the following definitions:

#### **3.9.1 Definitions of qualitative research by Dr Virginia Cano**

Qualitative research is commonly associated with social research schools which fall broadly within what is known as the interpretivist sociological tradition. Qualitative research is concerned with observation, description and generation of hypotheses, as a contrast to positivist traditions of social research, which are concerned with the testing of correlations between variables.

#### **3.9.2 Mason (1996): Qualitative research is**

- Grounded in a philosophical position which is broadly interpretivist in a sense that is concerned with how the social world is interpreted, understood, experienced or produced.
- Based on methods of data generation, which are flexible and sensitive to the social context in which data is produced.
- Based on methods of analysis and explanation-building, which involve understanding of complexity, detail and context.

#### **3.9.3 Hammersley (1990) offers a definition of ethnography, which shares common properties with Bryman's definition of QR**

- Use of everyday context rather than experimental conditions.
- A range of sources of data collection (the main ones are observation and informal conversations).
- A preference for unstructured data collection (no prior hypotheses, no prior definitions).
- A concern with the 'micro' features of social life (a single setting or group).
- A concern with meaning and function of social action.
- The assumption that quantification plays a subordinate role.

#### **3.9.4 Hammersley and Atkinson (1993)**

- A preference for 'natural' settings as the primary source of data.

- A fidelity to the phenomena under study – this requires a cultural description of the meanings of phenomena to participants.
- The use of an inductivist methodology which avoids the premature testing of hypothesis.

#### **Methods of qualitative research.**

There are four major methods used by qualitative researchers:

- Observation
- Analysing texts and documents
- Interviews
- Recording and transcribing

### **3.10 QUALITATIVE THEORIES APPLICABLE TO THIS STUDY**

#### **3.10.1 Grounded Theory**

Glazer and Strauss (1967) defines grounded theory as “the process for the discovery of theory from data systematically obtained from social research.’ Grounded theory may be used in two ways. Firstly, as a research philosophy where the researcher approaches a research question with no specific research framework. A research question, considered interesting, is posed and data gathered relative to the question. Secondly, grounded theory may be used as a technique for analysing data, which involves the process of constant comparison. Concepts evolve from the constant comparing of data for similar or different facts. From this generic categories can be established.

The data analysis process involves three types of coding.

***open coding*** - assigning data to categories that are identified by the researcher.

***theoretical coding*** - identifying relationships between the categories to support the theoretical framework.

***selective coding*** - ensuring that all available data is associated with an emerging category and that core categories are identified to support the conceptualisation of the theoretical framework. Eventually, a situation of theoretical saturation is attained where no new categories emerge from the gathering of further data. This is similar to the reductionist process of sub-division - until the results are simple enough to be analysed and understood (Chapman, J, 2002, p.1) and no new categories emerge from the data.

### 3.10.2 Personal construct theory

Personal construct theory studies interpersonal relationships. Kelly (1963) developed this theory based upon his work as a clinical psychologist to help assess his patients' interpersonal relationships. He determined that individuals would develop a personalised system for dealing with their situations based upon their own interpretations of their past experiences. Using these techniques provide a way of doing research into problems in a more precise, less biased way than any other research method (Stewart and Stewart, 1981). This technique has been employed in a series of information systems research projects (Hunter, 1993). A good example determined by Hunter (1993) and his colleagues was that information systems professionals perceived excellent systems analysts as being process-oriented, while business professionals view excellent systems analysts as those who were able to deliver content. In the cross-cultural environment, Singapore research participants viewed excellent systems analysts as experts, while the Canadian research participants regarded excellent systems analysts as coaches. What this theory tells is that an individual's past experience will influence their viewpoint and underlying assumptions.

### 3.10.3 Narrative inquiry

Narrative inquiry documents a segment of life that is of interest to the researcher (Girden, 2001). This concept suggests that those events which are experienced first-hand are the ones that are most vividly remembered (Tulving, 1972). As Swap, et al. (2001) suggests, employing an approach where research participants relate stories about their personal experiences would be more memorable, be given more weight, and be more likely to guide behaviour. Interview questions are employed to collect data. Questions will focus on factors surrounding experiences at various stages of interactions. Based on the data, common themes are identified, and finally trends that indicate the more beneficial aspects relating to user advancement for Internet users. We all have our internal models of how things work based on our experiences and our interpretation of those experiences. These internal models shape our thoughts and actions and lead us to expect certain outcomes from certain activities (Lane A., T552; 2004, p.8).

Other researchers raise some concern about qualitative research verification. They reckon that qualitative researchers tend to become involved in their research situations and with their research participants, which raises the question of researcher bias and reliability. Narrators claim that for instance, in an interview, questions may be asked in a certain way, or certain

aspects of the questions may be pursued more or less intensively. Other researchers consider this approach with flexibility, allowing researchers to obtain relevant data. Reason and Rowan (1981) suggests that it is much better to be deeply interesting than accurately boring. It is possible to place emphasis on the research method in order to counteract the potential introduction of bias. It is incumbent upon the researcher to gather data in a systematic way in order to address the above concerns.

There are many different ways of thinking. Logic alone is inadequate to deal with complex situations, because it deals with simple, timeless cause and effect links between statements. Causal thinking underlies much of the science, where the tendency is to look at simple cause and effects by isolating components or parts of a whole. Systems thinking tries to look at the complicated pattern of multiple causes that make up a whole, and to simplify it by taking multiple partial views or perspectives. Reductionist and holistic thinking is complementary (Lane, A., T225).

Examples of qualitative methods are action research, case study research and ethnography. Qualitative data sources include observation and participant observation (fieldwork), interviews and questionnaires, documents and texts, and the researcher's impressions and reactions.

### **3.11 QUALITATIVE RESEARCH ON THE INTERNET**

Eysenbach's (2001) studies indicate that qualitative research seeks to acknowledge the existence of and study the interplay of multiple views and voices – including importantly lay voices. Internet postings are accessible for qualitative research of these voices. An example would be the determination of information needs and preferences of Internet customers, or to investigate how electricity safety-related information can best be converted into knowledge and disseminated widely.

Three different types of Internet-based research methods can be distinguished. One is passive analysis, such as studies of information patterns on websites, or interactions on discussion groups without the researchers actually involving themselves. Examples include the study of helping mechanism of online self-help groups for Cancer, Alzheimer's disease and eating disorders. The second type of online research is through active analysis in which researchers participate in communications, for example to determine the accuracy

of responses to Internet questions on the Usenet. In the third type, researchers identify themselves as such and gather information in the form of online semi-structured interviews, online focus groups, or Internet-based surveys, or use the Internet to recruit participants for traditional research.

Habermas's communicative theory of action (Shin, 1992):

This is one of several critical social theories (CST) of communication richness that serves as an alternative perspective from the traditional positivist Information Richness Theory (IRT) and the occasionally-employed interpretivist perspective. What differentiates CST from the other two perspectives is that the communication receiver can critically reflect on the content of the message and thereby analyse and detect distortion. CST may provide better explanations of the relative effectiveness of different communications media. For e-CRM researchers and practitioners alike, alternative theories, such as CST, offer ways to study communication media in context and thus explore additional variables such as personal involvement, product types, prior consumer knowledge and interactions among contextual factors that the other two perspectives do not. The ability to study communication in context may lead us to consider and discover alternative strategies for e-CRM that might otherwise be overlooked or too easily dismissed.

### **3.12 DIAGRAM TYPES USED IN SYSTEM STUDIES**

In research studies diagrams can help the researcher make sense of the world. In the reductionist process, diagrams can be used to drill down issues until the results are simple enough to be analysed and understood (Chapman, J., 2002, p.1). Diagrams allow the relationships between parts of the situation to be seen at the same time as the parts themselves. Attempts at problem-solving that are not alert to such interactions often result in unexpected and undesirable consequences.

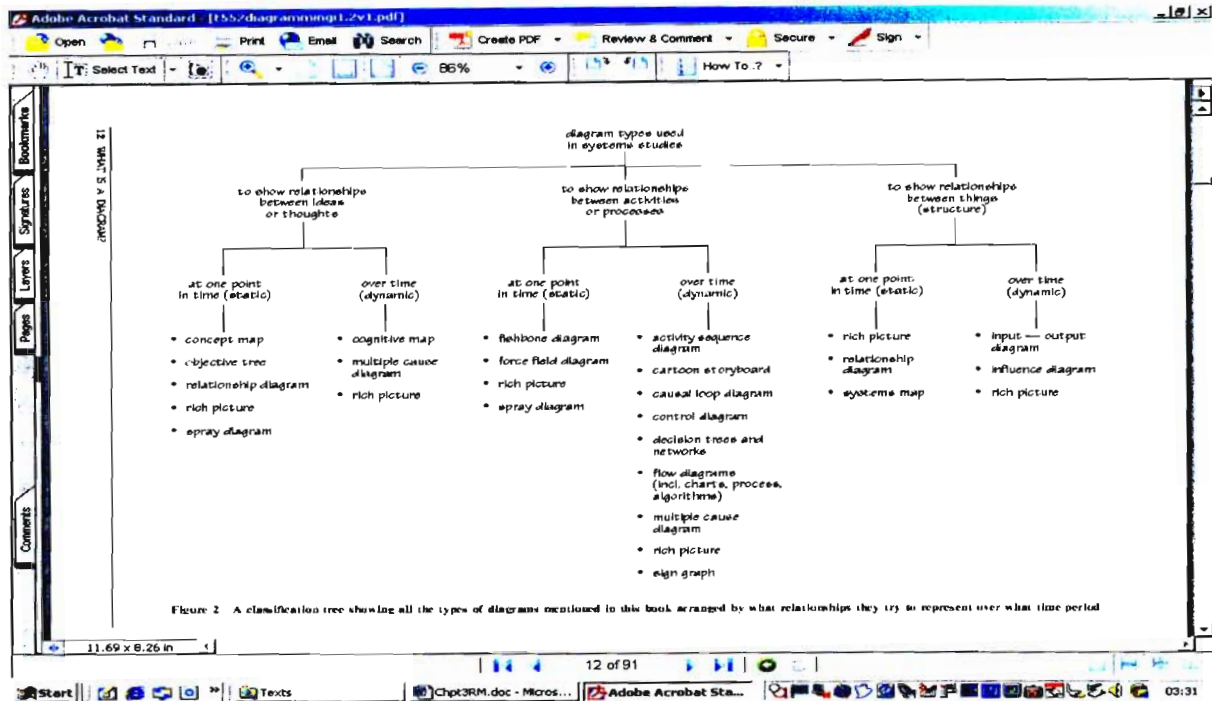


Figure 3.7 Diagram types used in system studies (Lane, A., T225)

Figure 3.7 summarises diagrams used in systems thinking into one view in the above screen according to relationships between ideas or thoughts, activities or processes and things (structures).

The following paragraphs are dedicated to qualitative research in information systems (IS), the Internet, voice-, e-mail- and SMS (mobile) technology. Qualitative research involves the use of qualitative data to understand and explain social phenomena. Qualitative researchers can be found in many disciplines and fields, using a variety of approaches, methods and techniques. In information systems, there has been a general shift in research away from technological to managerial and organisational issues.

Although most researchers do either qualitative or quantitative research, some researchers have suggested combining one or more research methods in a study called triangulation (Meyers, D.M., 1997). Harald Witt (2001) opposes this, as he claims that conducting qualitative and quantitative research involves different methods for data collection and analysis, as well as different strategies.



### 3.13 MOTIVATION TO DO QUALITATIVE RESEARCH

Qualitative research methods are designed to help understand people and the social and cultural contexts within which they live. Kaplan and Maxwell (1994) argue that the goal of understanding a phenomenon from the point of view of the participants and its particular social and institutional context is largely lost when textual data is quantified.

Strengths of qualitative research (Kaplan and Maxwell (1994):

- Provides individual case information
- Useful for describing complex phenomena
- Data based on the participants' own categories of meaning
- Useful for studying a limited number of cases in depth
- Can conduct cross-case comparisons and analysis
- Provides understanding and description of people's personal experiences
- Can describe phenomena in rich detail
- The researcher almost always identifies factors as they relate to the phenomenon of interest
- The researcher can study sequential patterns and change
- Qualitative approaches are especially responsive to local stakeholders' needs
- Data is usually collected in naturalistic settings
- Qualitative researchers are responsive to changes

Qualitative research also have limitations. An important limitation is that the findings cannot be directly generalised to the larger population for whom a web self-service site is being designed. Although participants are selected randomly, these individuals might be somewhat different from the customer segment of interest. The number of participants in a typical qualitative research study is too small to be representative of the population. Focus groups or interviews with just a few users of a target audience cannot meet the statistical assumptions to project the results accurately or reliably to the total audience.

### 3.14 QUALITATIVE PHILOSOPHICAL ASSUMPTIONS

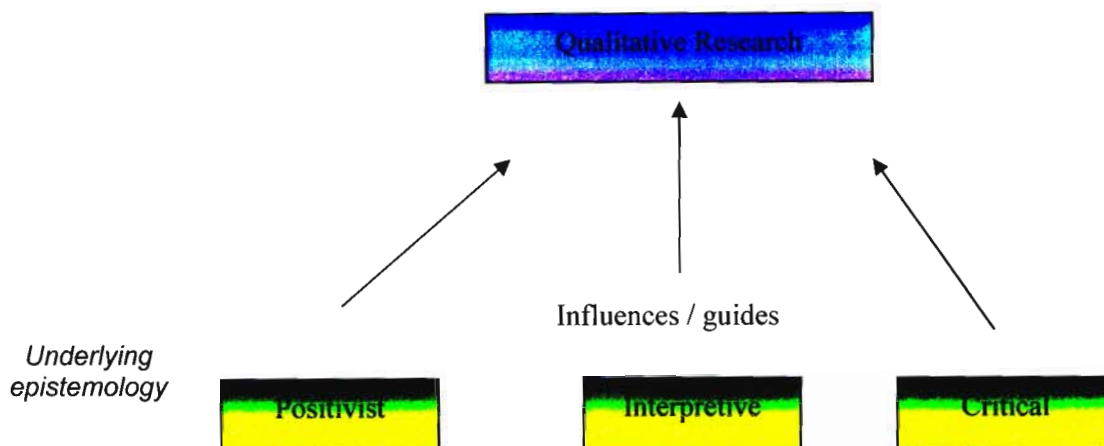


Figure 3.8 Underlying philosophical assumptions

#### 3.14.1 Positivist research

Positivist studies attempt to test theory in an attempt to increase the predictive understanding of phenomena. Orlikowski and Baroudi (1991) classified information systems research as positivist. Examples of a positivist approach to qualitative research include Yin's (2002) and Benbasat et al.'s (1987) work on case study research.

#### 3.14.2 Interpretive research

Interpretive researchers start out with the assumption that access to reality is only through social constructions such as language, consciousness and shared meanings. The philosophical base of interpretive research is hermeneutics and phenomenology (Boland, 1985). Interpretive studies attempt to understand phenomena through the meanings that people assign to them. Interpretive methods of research in information systems are aimed at producing an understanding of the context of the information system, and the process whereby the information system influences and is influenced by the context (Walsham, 1993). Interpretive research does not predefine dependent and independent variables, but focuses on the full complexity of human sense-making as the situation emerges (Kaplan and Maxwell, 1994). This view ties up with Mills's (2003) research that events that lead to the selection and implementation of a planned culture change and a re-engineering programme are made sense of through a strategic, retrospective use of Weick's sensemaking approach to organisational analysis (Mills, J.H., 2003).

Examples of an interpretive approach to qualitative research include Boland's (1991) and Walsham's (1993) work. Klein and Myers's (1999) paper suggests a set of principles for the conduct and evaluation of interpretive research.

### 3.14.3 Critical research

Critical researchers assume that social reality is historically constituted and that it is produced and reproduced by people. Although people can consciously act to change their social and economic circumstances, critical researchers recognise that their ability to do so is constrained by various forms of social, cultural and political domination. Critical research focuses on the oppositions, conflicts and contradictions in contemporary society, and seeks to eliminate the causes of alienation and domination.

One of the best-known exponents of contemporary critical social theory is Jurgen Habermas, who is regarded by many as one of the leading philosophers of the twentieth century.

### 3.14.4 Action research

There are numerous definitions of action research. One of the most widely cited is that of Rapoport's, who defines action research in the following way:

*"Action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework"* (Rapoport, 1970).

This definition draws attention to the collaborative aspect of action research and to possible ethical dilemmas which could arise from its use. It also makes clear, as Clark (1972) emphasises, that action research is concerned to enlarge the stock (body) of knowledge of the social science community. Action research has been accepted as a valid research method in fields such as organisation development (OD) and education. Practitioners systematically reflect on and evaluate what they are doing. (McNiff, J., 2000).

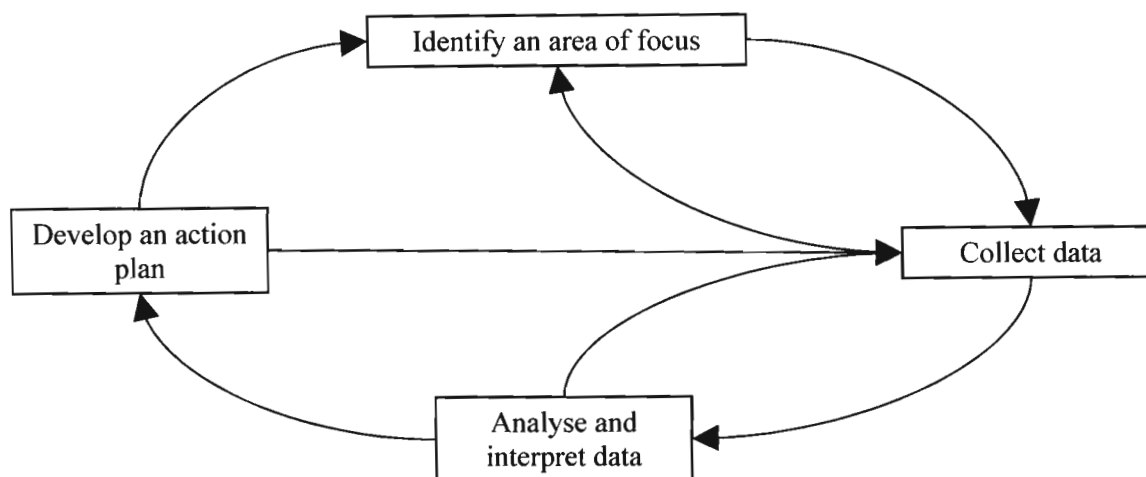


Figure 3.9 Action research spiral

Elliot (1980), Figure 3.9 above, describes the ‘action research spiral’ as selecting an area for research, collecting information on that situation, deciding what action to take and how to evaluate the effectiveness of this action. Then plan another action.

French & Bell (1996) describes a similar process when referring to the action research spiral as a “process of systematically collecting research data about an ongoing system relative to some objective, goal or need of that system; feeding the data back into the system; taking actions by altering selected variables within the system based both on the data and on hypothesis; and evaluating the results of actions by collecting more data” (Rouda & Kusy, 2002).

### 3.15 CASE STUDY RESEARCH

Case studies are one of the research approaches which can take either a qualitative or quantitative stance. In this resource pack the qualitative approach to case study is used, wherein the value of the case study relates to the in-depth analysis of a single or small number of units. Case study research is used to describe an entity that forms a single unit such as a person, an organisation or an institution. Case studies range in complexity. The most simple is an illustrative description of a single event or occurrence. The most complex is the extended

case studies which trace events involving the same actors over a period of time, enabling the analysis to reflect changes and adjustments. As a research design, the case study claims to offer a richness and depth of information not usually offered by other methods.

The term "case study" has multiple meanings. It can be used to describe a unit of analysis (e.g. a case study of a particular organisation), or to describe a research method. The customer self-service study use case studies as a research method. Case study research is a common qualitative method used in information systems (Orlikowski and Baroudi, 1991; Alavi and Carlson, 1992). Although there are numerous definitions, (Yin 2002) defines the scope of a case study as follows:

“A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin 2002). Case study research can be positivist, interpretive, or critical, depending upon the underlying philosophical assumptions of the researcher (Yin 2002).

The case study research method is particularly well-suited to information system research. The object of this research is the study of the Web as an information system in an organisation. Interest is shifted to organisational rather than technical issues (Benbasat et al. 1987). Benchmarking surveys are also a form of critical case study, as it compares different utility performances.

One of the criticisms aimed at case study research is that the case under study is not necessarily representative of similar cases and therefore the results of the research are not generalisable. This is a misunderstanding of the purpose of case study research, which is to describe that particular case in detail. It is particularistic and contextual (Hancock, 2002).

### 3.16 APPROACHES IN QUALITATIVE METHODS

Various philosophies have inspired the way in which qualitative research is carried out. Guba and Lincoln (1994) suggests four main influences:

**3.16.1 Positivism:** the idea that the world exists “objectively,” independently of any researcher’s views.

- 3.16.2 Post-positivism:** admits that humans cannot always understand the world perfectly, but with rigorous data collection and analysis, they can approach the truth.
- 3.16.3 Constructivism:** states that reality does not exist independently, but is instead constructed by the individual. Research is seen as a way to create meanings. Constructivism has greatly influenced approaches such as grounded theory. Researchers start from the position that access to reality can only be gained through social constructions such as language or shared meanings.
- 3.16.4 Critical theory** distinguishes between the private and public identity, and the effect of cultural institutions on the shaping of identities. The aim of research is to improve the human condition.

No one set of methods is used for research. What is critical is the researcher's underlying assumptions to the research subject.

### 3.17 CUSTOMER SEGMENTATION

The importance of target population and customer segmentation description cannot be over-emphasised. Not only will careful thought about customer segmentation help determine the starting point of the website, but also help shape the site itself

Visagie (2004) explains that customer segmentation is used in various dimensions for different business purposes. The segment that a customer belongs to can be considered attributes of that customer. It is possible that a customer may simultaneously belong to many segments such as household and commercial. It is not critical to develop a single multidimensional segmentation model incorporating all dimensions. The different segmentation dimensions stand alone, and can be used in isolation or in combination with others as the need arises to slice the customer base according to different business purposes.

The customer base will be segmented primarily on size but also recognising tariff, service, access and quality of supply segmentation. Depending on the purpose of the segmentation, language, education, literacy levels and regional location also need to be taken into account when segmenting a customer base.

The Internet service channel segmentation will be used to attract customers to use channels which optimise customer convenience and cost versus Eskom's cost of service. Service

standard segmentation may be considered to optimise the relationship between the cost of service and the value to the business of different customer segments.

**Customer Numbers July 2005 = Active Service Agreements**

Category	Central	Eastern	Northern	N West	Southern	Western	Total
LPU	2,036	1,510	4,104	1,965	717	2,920	13,252
SPU	131,236	69,715	108,272	48,470	24,602	70,997	453,292
PPU Connections	467,606	503,444	1,177,461	300,140	488,144	204,273	3,141,068
<b>Total</b>	<b>600,878</b>	<b>574,669</b>	<b>1,289,837</b>	<b>350,575</b>	<b>513,463</b>	<b>278,190</b>	<b>3,607,612</b>

Table 3.1 Eskom's customer base (DCS, July 2005)

Table 3.1 shows the number of Eskom customers with active service agreements per service type.

Dedicated web pages per service type make for focused service offerings. The three main categories, Large Power Users (LPU), Small Power Users (SPU) and Prepaid (PP) are further segmented into key customers, large and small manufacturing, large and small mining, large and small commercial and hi-tech and lo-tech farming. Different channels for different customer products.

Service segmentation creates the illusion of personalised, individual service providing the feel of local service, even at a distance. It matches customer segments with delivery channels, not necessarily products. Service segmentation is multi-dimensional. Services themselves can be segmented. Service segmentation is a tool used to design Eskom Business, so that customers feel that they are receiving personalised, individual service. The segmentation method used in this study is to design an optimal self-service channel strategy.

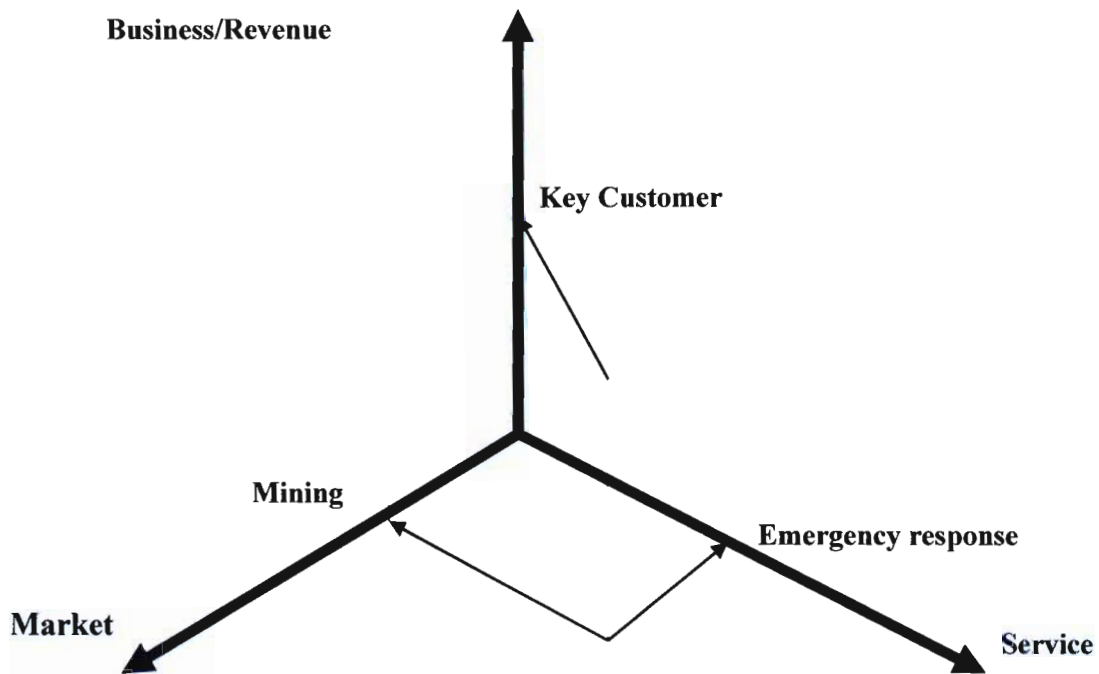


Figure 3.10 Three-dimensional segmentation (Business, Market and Service)

Segmentation Principles are based on distinctly different service requirements and customer values, needs and expectations as depicted in Figure 3.10 above.



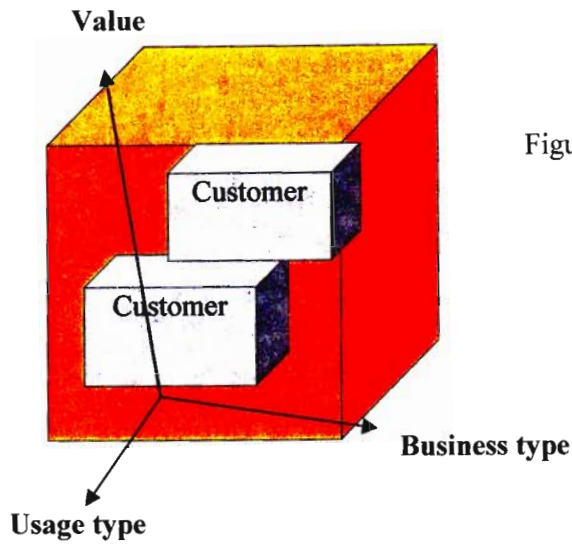


Figure 3.11 Segmentation types

Eskom dimensions for Figure 3.11 would typically be:  
 Value – platinum, gold, silver, bronze  
 Customer Type – industrial, commercial, residential  
 Business Type – hospital, hotel, trade, etc  
 Usage Type – lighting, space conditioning, water heating, etc

The service channels in Table 3.2 below are relevant to all the different types of Eskom customers.

Service channel	Trader key customers	Regional key customer	Area key customers	Retail billed customers	Retail prepaid customers
Internet	x	x	x	x	x
E-mail	x	x	x	x	x
SMS *	x	x	x	x	x
CC voice technology	x	x	x	x	x

\* SMS for  
 -- All inbound services  
 -- Outage notification and update  
 -- Collection reminders

-- Severance warnings

### Customer Interface Events

<b>CUSTOMER INITIATED</b>	<b>ESKOM INITIATED</b>
Information request Connection request Project status Account query Maintain customer Information Complaint / commendation Fault Disconnection request Payment Meter reading	Tariff information Planned outages Network change information Sales advice General advice Bill Measurement survey Charges verification Meter reading

### International customer segmentation

In the UK segmentation is universally split around three types of customer: domestic; small-to medium size enterprises (SME) and industrial and commercial. Most retailers in the US/CAN have broken each class into segments based on their own business strategy. For example, if they are only interested in the LG C&I business, they will typically segment the customers by industry and allocate a salesperson to manage the account, as opposed to a telemarketer or direct mail. For the mass markets, most marketers have segmented based on geography, income levels, education levels, etc.

## TXU Energy's Web-service



Figure 3.11 TXU Energy's web-service homepage.

The web page in Figure 3.11 shows the separate entry points for residential, business and large business customers. It allows for focused service offerings and product sales and is a good example of a well designed homepage.

## 18. CONCLUSION

Customer segmentation can assist to ensure relevant information to the correct group of customers. A good web services design requires that theories, methods and change processes be evaluated in terms of value, business and usage type, as per Figure 3.9.

Chapter 4 focuses on the data collection methods and interpretation of the data.

## CHAPTER 4

# DATA COLLECTION METHODS

*Every transaction-based enterprise application, every database, every Internet site and each process that workers perform on a day-to-day basis need reporting and supporting.*

*- Forrester Research (2005)*

### 4.1 INTRODUCTION

In data collection methods the procedures and collection tools highlight the importance of the researcher's role. The techniques used to enhance the data collection phases are equally important to obtain the maximum information needed for the study. Weston, McAlphine & Bordonaro (1995) makes a observation in that they claim that researchers do not focus clearly on the techniques to be used, but that they unintentionally expect inexperienced persons to provide critical role inputs. Terre Blanche & Durrheim (1999) says that "to draw valid conclusions from a research study, it is essential that the researcher has sound data to analyse and interpret." Data should capture the meaning of what the researcher is observing.

Instruments are used to collect information from participants about the action learning that took place through the research. These instruments can be in the form of questionnaires, interviews, group discussions and user testing. According to Lippert (1993), instruments used should match the 'how', the 'where' and the 'by whom' the evaluation is done.

Qualitative evaluation must be sensitive to processes used to gain the information and the role of the individual within the context of the social environment in which it is conducted, otherwise one of the weaknesses come to the fore, i.e. researcher bias.

## 4.2 QUALITATIVE DATA

Trochim (2002) identified qualitative data as extremely varied in nature. It includes virtually any information that can be captured that is not numerical in nature. Below are some of the major categories:

### 4.2.1 In-depth interviews

In-depth interviews include individual interviews (one-on-one), as well as group interviews (focus groups). The data can be recorded in a wide variety of ways including stenography, audio recording, video recording or written notes. In-depth interviews differ from direct observation primarily in the nature of the interaction. In interviews it is assumed that there is a questioner and one or more interviewees. The purpose of the interview is to probe the ideas of the interviewees about the phenomenon of interest.

### 4.2.2 Direct observation

Direct observation differs from interviewing in that the observer does not actively query the respondent. It can include everything, from field research where one live in another context or culture for a period of time, to photographs that illustrate some aspect of the phenomenon. The data can be recorded in many of the same ways as interviews and through pictures such as those courtroom drawings of witnesses

### 4.2.3 Written documents

Usually this refers to existing documents. It can include newspapers, magazines, books, websites, memos, annual reports and so on. Usually written documents are analysed with some form of content analysis.

## 4.3 DATA COLLECTION METHODS

The primary data collection and methods used for this qualitative study were interviews, focus group discussions, electronic mail messages, questionnaires, benchmarking studies, case studies and the researcher's journal. Two sources of data were used, namely primary sources data from interviews, focus group discussions and Eskom's annual reports. Secondary sources used were books, articles and organisational presentations for the literature review.

## 4.4 QUALITATIVE TECHNIQUES FOR DATA COLLECTION

Data collection methods uses one or more techniques for collecting data. These techniques range from interviews, participant observation and fieldwork, through to previous research. Written data sources can include published and unpublished documents, company reports, memos, letters, reports, e-mail messages, faxes, newspaper articles and books.

Case study researchers use interviews and documentary materials first and foremost, without using participant observation. The distinguishing feature of ethnography is that the researcher spends a significant amount of time in the field. The fieldwork notes and the experience of living there become an important addition to any other data-gathering techniques that may be used. (Fieldwork also refers to on-the-job observation.)

## 4.5 MODES OF ANALYSIS

A clear distinction between data gathering and data analysis is problematic for many qualitative researchers. For example, from a hermeneutic perspective it is assumed that the researcher's pre-suppositions affect the gathering of the data - the questions posed to informants largely determine what are going to be found out. The analysis affects the data and the data affect the analysis in significant ways. Therefore it is perhaps more accurate to speak of "modes of analysis" rather than "data analysis" in qualitative research. These modes of analysis are different approaches to gathering, analysing and interpreting qualitative data. The common thread is that all qualitative modes of analysis are concerned primarily with textual analysis, verbal or written, such as case studies and benchmarking results.

### 4.5.1 Hermeneutic interpretation

Hermeneutics is a specific mode of analysis and an underlying philosophy. (Bleicher, 1980). As a philosophical approach to human understanding, it provides the philosophical grounding for interpretivism. As a mode of analysis, it suggests a way of understanding textual data. Taylor (1976) defines hermeneutic interpretation as *"an attempt to make sense of an object of study"*. A hermeneutic circle refers to the understanding of the text as a whole and the interpretation of its parts (Gadamer 1976, p. 117). The movement of understanding "is constantly from the whole to the part and back to the whole" - a circular relationship.

Hermeneutic analysis tries to make sense of the whole, and the relationship between people, the organisation and information technology. (T205, p.48 Open University).

**4.5.2 Narrative and metaphor**

Narrative is defined by the Concise Oxford English Dictionary as a "story told in the first person." Metaphor is the application of a descriptive term to an object or action to which it is not literally applicable, e.g. a window in Windows 95. One of the T205 readings said that: "...the less obvious the use of metaphor, the more powerful its impact." The reading also cautions against the use of irrelevant metaphors. The less obvious metaphors used in everyday language can trap researchers into particular ways of thinking, because, like all models, metaphors are incomplete representations. The fact that metaphors are often used unconsciously can make them into particularly dangerous traps (T205, p.217).

**4.6 DATA COLLECTION PLAN**

The various levels of data collection are shown in Figure 4.1.

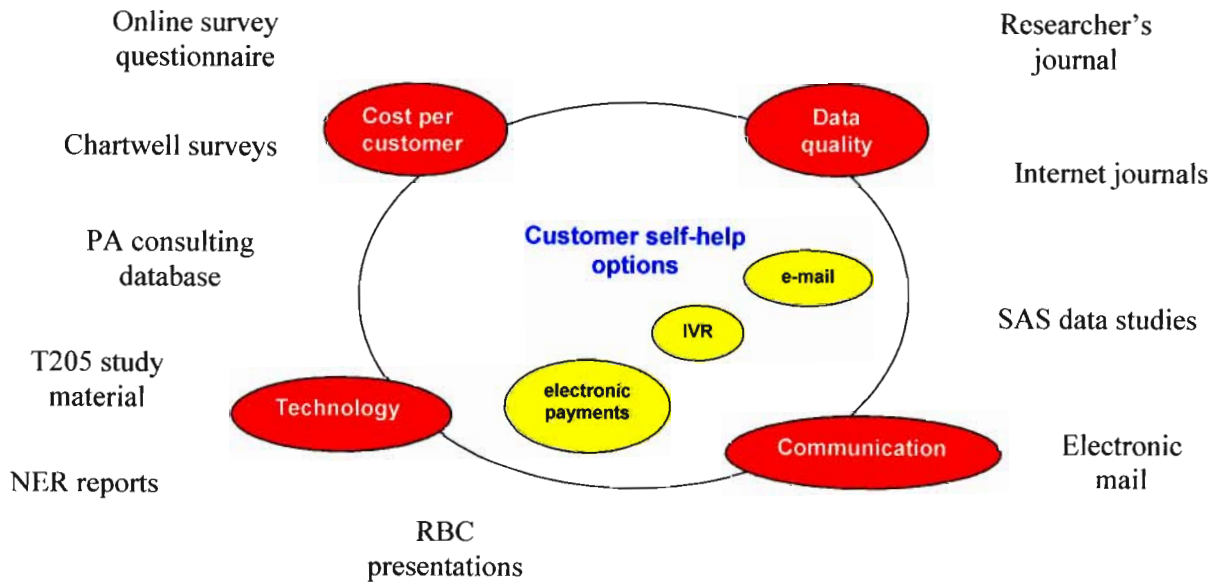


Figure 4.1 Range of data collection

#### 4.6.1 Subsidiary research questions to further assist data analysis

Subsidiary research questions	Data collection methods						
	Interviews	Focus group	E-mail	Questionnaires	Case studies	Benchmark results	Researcher-'s journal
Do customers want a self-service web page?	CSC	DCS	CSC DCS	CSC	R	R	R
Which medium is the most suitable for the delivery of self-service options?	CSC	DCS	CSC	CSC	R	R	R
Does new CSONline customers have the necessary computer skills to use the self-service options?	CSC	NCSC	NCSC	NCSC	R	R	R
What are customers' perception about the usability and reliability of the customer self-service options?	CSC NCSC	DCS	CSC NCSC	CSC NCSC	R	R	R

CSC = CSONline customers; R = Researcher; IT = Information Technology; DCS = Distribution Customer Service; NCSC = New CSONline Customers

Table 4.1 Subsidiary research questions and associated data-gathering instruments

### 4.7 QUALITATIVE VALIDITY

Guba and Lincoln (Trochim 2002) proposed four criteria for judging the soundness of qualitative research, which they offered as an alternative to more traditional quantitatively-oriented criteria. They felt that their criteria better reflected the underlying assumptions involved in much qualitative research.

Traditional criteria for judging quantitative research	Alternative criteria for judging qualitative research
Internal validity	credibility
External validity	transferability
reliability	dependability
objectivity	confirmability



## 4.8 DATA SUMMARY

### *Organising data*

*“It wasn’t curiosity that killed the cat.*

*It was trying to make sense of all the data curiosity generated”.*

*- Halcolm (2005)*

## 4.9 CASE STUDIES

For the case studies, Chartwell researchers gathered data from numerous interviews with utility customers and an exclusive survey of 70 utilities conducted in mid-2001 about their customer self-service applications.

Synthesis of different qualitative studies on the same subject is a form of cross-case analysis. Researchers can synthesize lessons from a number of case studies and generate generic factors that contribute to process effectiveness (Qualitative Research & Evaluation methods; 2001; p 500).

### 4.9.1 Case study 1: Idaho Power - Voice technology self-service

Idaho Power’s IVR helped improve customer satisfaction and save money.

#### *Executive summary*

**Utility:** Idaho Power serves 400,000 customers in a 320,000 square-mile territory that covers Idaho and Oregon.

**Focus:** With high bill inquiries rising for various reasons, the utility installed a new IVR.

**Key points:** Since the IVR was installed in September 2001, the use of self-service has increased more than 400% and in the first month the IVR surpassed the utility’s expectations, handling more than 26% of all calls. The utility also quickly reached its goal of having 18% of customers with past due amounts use the IVR to make payment arrangements.

Utilities looking to improve their IVR systems should look at the strengths and weaknesses of their current application. IVR menus should be short, easy to understand and placed in order of importance to customers.

***By the numbers***

Idaho Power's service improvements after installing a new IVR:

- Increase in use of self-service : 400%
- % of calls handled by IVR: 26%
- % of delinquent callers using IVR: 18%
- % of IVR users that completed their transaction in one call: 78%
- % of callers conducting turn-on / off transaction that were satisfied: 86%
- # of callers using IVR after-hours: 1,700

Customers are also showing increased comfort with the system. In the first week, many first-time users of IVR called back to make sure it worked, but those calls subsided greatly on subsequent calls.

The 18% of customers with past due amounts use the IVR to make payment arrangements. Those calls are usually time-intensive, but many customers who are past due prefer to use self-service because they prefer the anonymity.

The IVR's "always on" feature has been pleasing to callers. In the first month alone there were 1,700 after-hours calls.

Idaho Power also made a conscious effort to make the IVR customer focused. Instead of using utility lingo, the IVR uses layman's terms. For example, the IVR refers to "residential" customers as "home" customers. The order of menus is now based on the reason for the call instead of customer type.

Idaho Power provides five menus per option. After customers enter their account number/s, they are automatically given their balance, last payment made and next bill due date before they are offered other options. Almost every single customer that calls wants to confirm that information.

### 4.9.2 Case study 2: Portland General Electric (PGE) - Website and IVR self-service combined

#### *Executive Summary*

**Utility:** PGE serves 730,000 customers in 51 cities. Their service territory spans 3,150 square miles.

**Focus:** PGE takes pride in its self-help customer service applications.

**Key points:** PGE redesigned its website and relied on customer testing to aid the project. The utility always tests any new applications with customer groups before release. The tests groups are chosen based on diversity and their Internet usage. PGE now has nearly 50,000 customers registered online.

For customers to use self-service applications, they must be customer-friendly. The site was subjected to usability testing with a select group of 12 PGE customers before it went live. The customers who were paid incentives of up to \$75, came from all walks of life and were asked to come in for a two-day period for about 1.5 hours a day.

The biggest challenge came when PGE attempted to segment the customer sample into two equal groups of patient and impatient web browsers. It is getting more difficult to find patient users.

The customer test from the revamped PGE website included:

Customers were able to register on the new website in three minutes and 17 seconds, down from nine minutes and 33 seconds with the previous site

It took users two minutes, 17 seconds to switch payment plans using the website, down from two minutes, 28 seconds in prior tests.

Starting service went down from more than 13 minutes to nine minutes and four seconds.

Customers were able to update their account in two minutes and 22 seconds, down from three minutes and 15 seconds.

#### *Designing for customers*

- With IVR it could be unnecessary pleasantries or other excessive wordiness; with a website it may be too much written verbiage or catchy brand names that don't make sense to the average user.

- Tasks buttons at the top of the page plus a “breadcrumb trail” allow users to navigate easily and follow their progress as they move through the site.
- Usability testing allows for participant observation – users are observed rather than just a collection of opinions.

### ***IVR versus online customer service: comparing the difference***

The telephone is still the most preferred method of communication. At PGE about one million telephone contacts a year are recorded by the utility. In contrast, nearly 50,000 customers are registered online.

Experts point out that it is important to give customers options. Online customer service can satisfy an important segment of the customer base and may also provide more capabilities than IVR. Web-based service applications offer a much more visual experience for the customer and can be configured to automate certain tasks that are not available via the phone. Online is a richer experience. With the phone there is more of a sense of urgency; with the Web, it's at the customer's pace.

While some companies make it difficult for customers to get personal contact, PGE encourages its customers to Press 0 at anytime should they need to speak directly with an agent. PGE's customer usability tests show this is essential.

PGE reports up to 12% of incoming calls are informational and handled by the IVR; 80% of outage calls can be handled by the IVR at any given time. For IVR these important customer contacts are first on the automated script. To report an outage callers are immediately told to press 1; for all other calls, they can press 2. Again, the utility's customer tests have shown that this is fundamental.

### **4.9.3 Case study 3: Omaha Public Power District - Voice technology – speech recognition**

#### ***Executive Summary***

**Utility:** The Omaha Public Power District serves more than 300,000 customers in 13 counties.

**Focus:** The winner of the 2001 JD Power & Associates award for highest customer satisfaction among residential electric utilities installed a new IVR with speech recognition capabilities.

**Key points:** To improve customer satisfaction among both residential and commercial customers. Expected users of the speech recognition functionality included some of the 5% to 10% of customers who currently prefer to speak to a customer service representative (CSR) and those who prefer to speak instead of press buttons.

About 70% to 80% of items that can be done with CSRs can be done through the IVR, including bill inquiries, signing up for services, credit card payments and reporting outages.

#### 4.10 CHARTWELL CASE STUDY GRAPHS

##### Growth in self-service applications

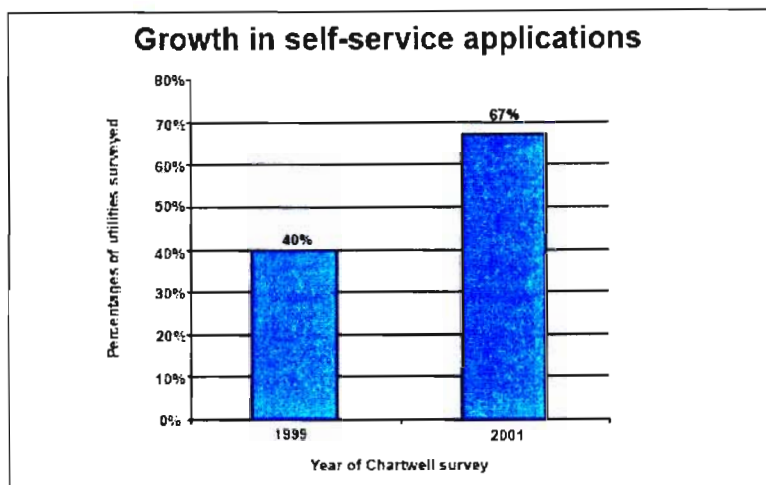


Figure 4.2 Growth in self-service application (Chartwell survey 2002)

Figure 4.2 above shows that the technology explosion of the latter 1990s and into 2000 no doubt fuelled the surge of self-help availability. Most of the growth in self-service offerings came in the proliferation of various Internet-service options. These include a variety of actions, including allowing customers to view their account balance and history online, bill presentment and payment, "payby-cheque" options in which customers enter a cheque number, registering for new service online, and the ability to stop and start service through a change of address.

4.10.3 Online customer service capabilities

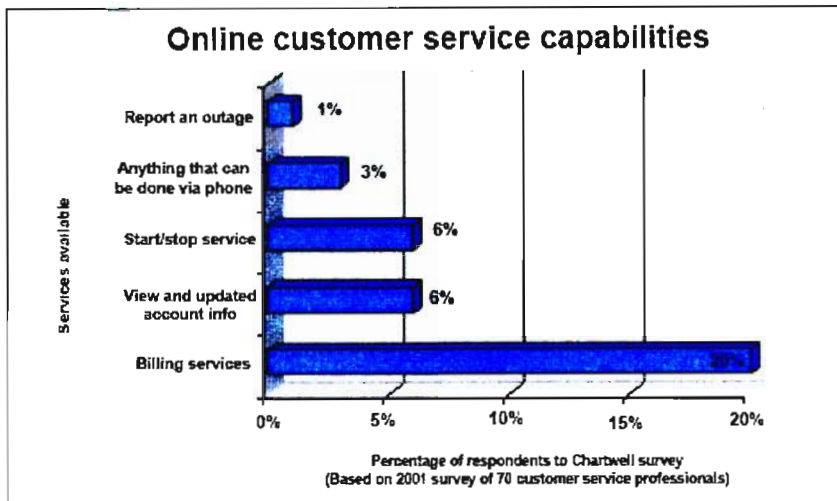


Figure 4.3 Online customer service capabilities (Chartwell survey 2002 )

Figure 4.3 shows that between 2% and 12% of customers will take advantage of online self-help applications and as much as 25% will use the IVR if those service offerings are tailored to meet the needs of the customer and presented in a way that is customer-friendly. Chartwell researchers interviewed 70 contact centre managers, all of whom agreed that self-service options was the dominant emerging trend, as can be seen from the case study results in the following table.

<p><b>Idaho Power</b>                      Service improvements after installing a new IVR                      Total number of customers: 400,000                      Increase in use of self-service: 400%                      Percentage of all calls handled by IVR: 26%                      Percentage of delinquent callers using IVR: 18%                      Percentage of IVR users that completed their transaction in one call: 78%                      Percentage of callers conducting turn-on/off transactions that were satisfied: 80%                      No of callers using IVE after-hours: 1,700</p>	<p><b>Seattle City Light</b>                      Total number of customers: 341,000 electric; 200,000 water                      Number of incoming calls: 3000-4000 a day                      Percentage of calls handled by IVR: 1%- 15%</p> <p><b>Con Edison</b>                      Number of calls handled by IVR                      Total number of customers: 3 million electric; 1.1 million gas                      No of customers using IVR to pay electric and or gas bill: 72000</p>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<p><b>Portland General Electric</b>  Customer use of self-help applications  Total number of customers: 730,000  Registered on-line users: 50,000  Total incoming calls per year: Appx. 1 million  Percentage calling for informational query (handled by IVR): 10%-12%  Percentage of outage calls handled by IVR: 80%</p> <p><b>Arizona Public Service</b>  IVR usage for bill payment  Total number of customers: 857,000  No of customers using IVR to pay electric bill: 25,000</p>	<p><b>Aquila</b>  Number of repeat IVR users  Total number of customers: 431,000 electric; 874000 gas  Percentage of customer using IVR to pay bill in first 3 months: 12%  No of customer using IVR to enter meter readings: 7000 a month  No of customers making payment arrangements: 3350</p>
<p><b>Eskom</b>  Customer use of self-help applications  Total number of customers: 3,5 million  Registered on-line customers: 6000  Total incoming calls per year: &gt;3,000,000</p>	

#### 4.11 WEBSITE DESIGN

Websites need to be consistent with the phone system. This includes keeping the online menu options parallel with those on the IVR. Options most popular with customers should come first. When an online user enters a website, they should see a row of self-explanatory customer service buttons at the top of the page with titles that include: Update Your Info; Automatic Payment; Payment Plans; Account Balance; Start, Move or Stop Service, and, View Your Bill. A "manage your account" link on the left side of the page should also be available to customers navigating the site. The methodology includes style guidelines that take into account overall look and design, usability and accessibility.

#### 4.12 PA BENCHMARKING SURVEYS

Benchmarking is a tough process that needs a lot of commitment to succeed. Business benchmarking is related to competitive advantage thinking (Bogan, C.E. & English, M.J. (2005). Benchmarking improves communication and processes and cost per customer can be established.

There are five types of benchmarking, namely:

- Internal benchmarking (benchmark within a corporation, between business units)
- Competitive benchmarking (benchmark performance or processes with competitors)
- Functional benchmarking (benchmark similar processes within an industry)
- Generic benchmarking (comparing operations between unrelated industries)
- Collaborative benchmarking (carried out collaboratively by groups of companies such as the annual PA utility benchmarking studies)

#### 4.12.1 Internet billing

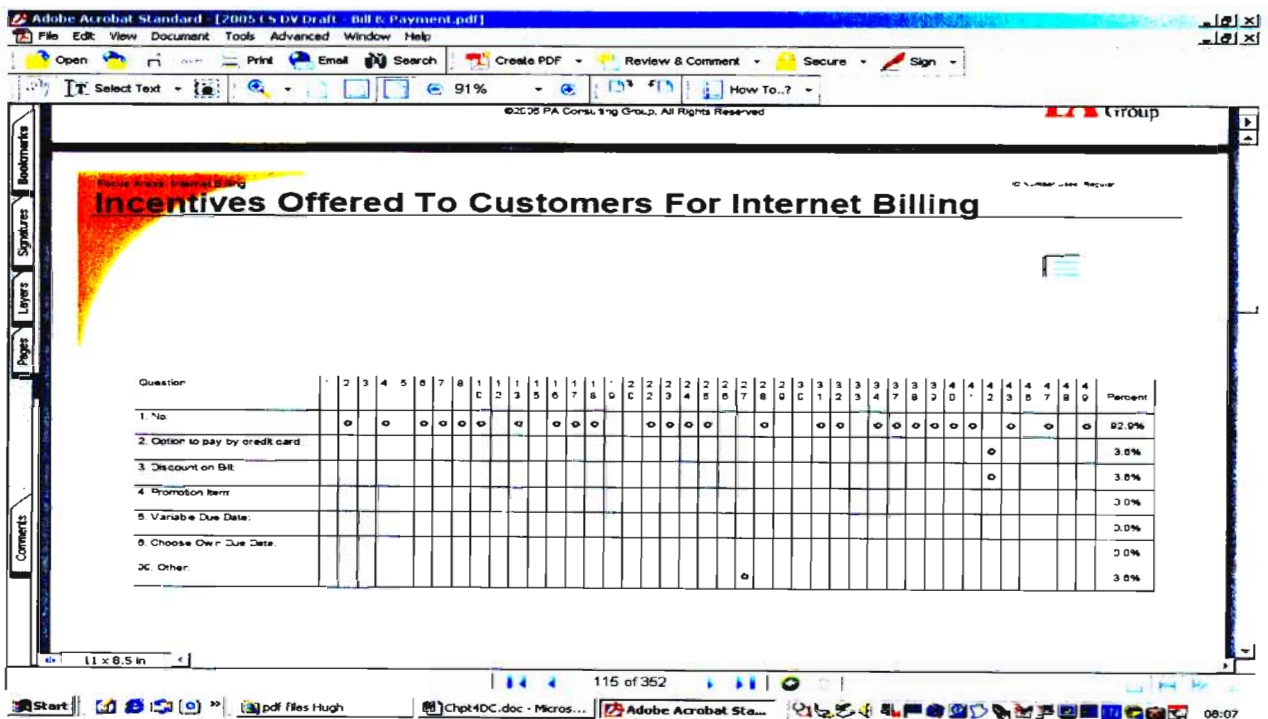


Figure 4.4 Incentives offered to customers for internet billing (PA Benchmarking 2005)

Figure 4.4, from the 2004 PA Benchmarking results, shows that 92.9% of the participating utilities do not offer any incentives for customers to use electronic web self-services. The assumption seems to be that the site is offered, customers just need to decide whether they want to use it or not.

Two of the participating utilities have been offering self-service options for the last six years, five for the last five years and some utilities are offering no self-service options at this point, as depicted in the graph below.



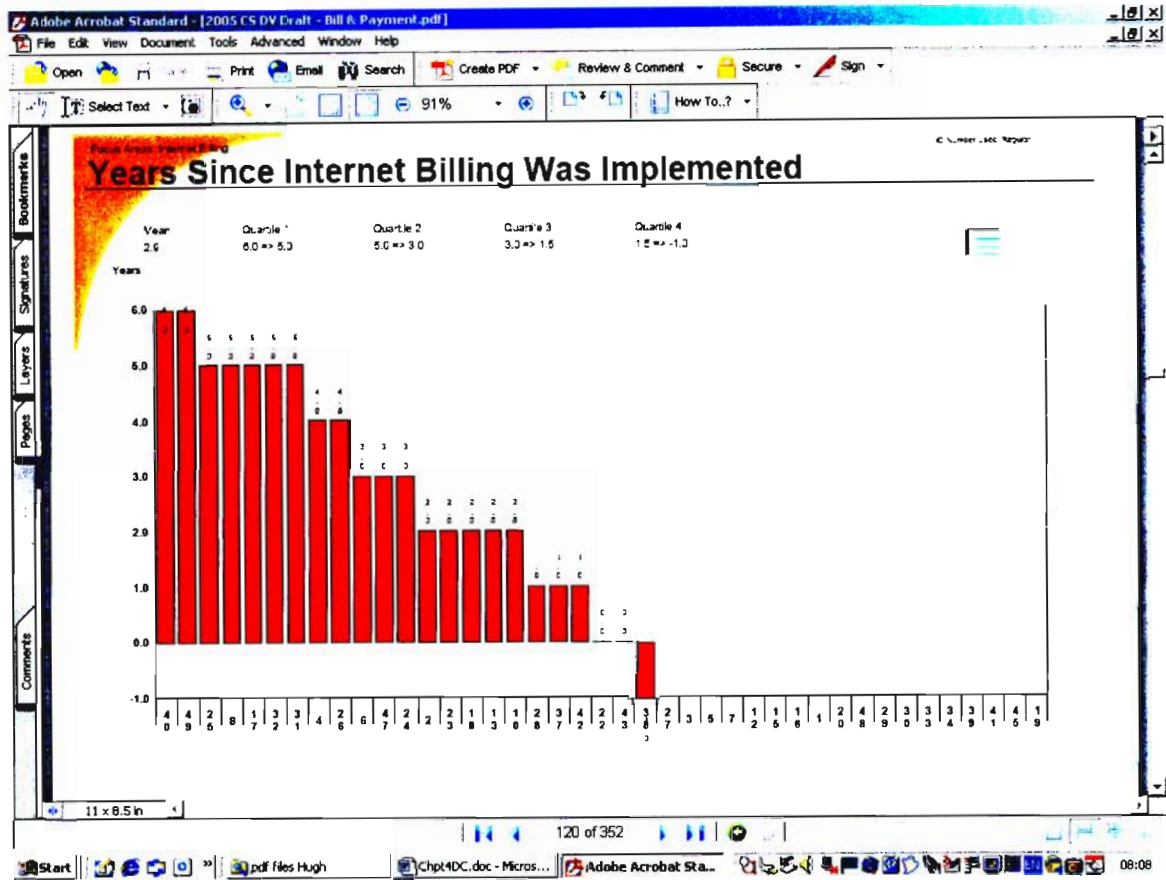


Figure 4.5 Years since internet billing was implemented (PA Benchmarking, 2005)

### Are customers taking advantage?

Chartwell (2002) has no firm data concerning customer usage of these technologies. It does appear that the number of customers using self-help capabilities is growing, but through the interviews Chartwell has conducted, these services still appeal to certain customer niches.

What is apparent is that anywhere between 2% and 12% of customers will take advantage of online self-help applications, and as much as 25% will use the IVR if those service offerings are tailored to meet the needs of the customer and presented in a way that is customer-friendly. These percentages are derived from a cursory analysis of case study interviews conducted for various Chartwell publications, including this report used in the research as part of the data collection method.

### 4.13 DATA QUALITY

Most large businesses have a big problem with information quality, according to a newly-released survey by Forrester Research (2004). With Internet self-services, customers can be coerced in taking accountability for the correctness of their critical data, such as contact details and postal addresses.

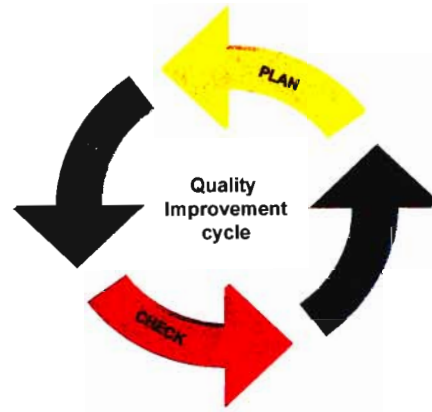


Figure 4.6 Data quality improvement circle

Figure 4.6 shows the cycle of data auditing and correction to have the following sequential steps, namely check, act, plan and do.

#### 4.13.1 Making the business case

A formal data quality audit uncovered the following quality metrics: a case study of a database containing approximately 1 m records uncovered the following quality metrics:

- 15% of entries are duplicates
- 4% of entries are incomplete and are missing data
- 17% of entries contain errors

Total address records	Duplicate customers	Duplicate customer % age	Missing data count	Missing data	Data error count	Data error	Defect count	Defect % age
1,092,431	167,142	15.3%	44,790	4.1%	181,341	16.6%	393,273	36%

Table 4.2 Case study of a database (Larry P English, SAS Institute Inc; 2003)

### 4.13.2 Cost analysis with data quality

Data Rework Activities	Time per Instance	Number of Instances	Number of Times Activity Performed	Total cost Per Year
Resolving redundant occurrences	2.4 min	167,142	once a year activity	\$401,140
Researching incomplete addresses	10 min	5,000	once a month	\$600,000
Correcting address errors	0.3 min	6,000	once a month	\$21,600
Handling complaints from customers	5.5 min	974	evenly through the year	\$5,357
Total				\$1,028,097
Total (Hours)				17,135 hours
Approximate Headcount				9 people
Cost rate is \$60 per hour				

Figure 4.7 Analysis of costs associated with data quality (SAS Institute; 2003)

Figure 4.7 gives a good feel for the cost of re-working customer data. Invariably data clean-up exercises involve field audits and customer surveys using the telephone and postal surveys. All of these initiatives cost money. Educating the customer to update their contact detail via online self-help options can assist in reducing the overall cost of data clean-up. A cause analysis done by the SAS institute (2002) shows that 80% of customer data is invalid due to inaccurate information, wrong names, removal requests that have not been updated in the database and no address detail. See Figure 4.8 below.

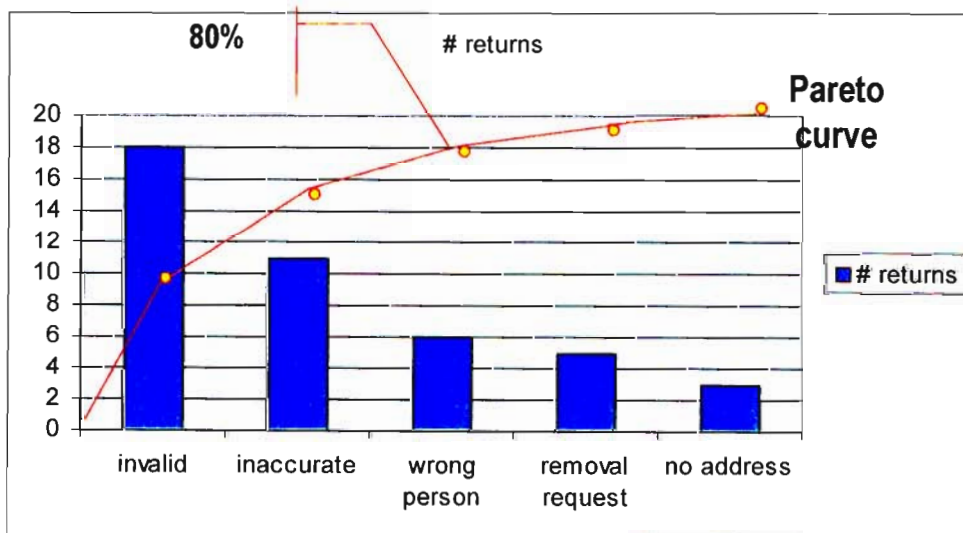


Figure 4.8 Typical data errors (SAS institute, 2003)

The impact of poor data (Figure 4.8 above) can be seen from the fishbone diagram below – campaign costs which cost money.

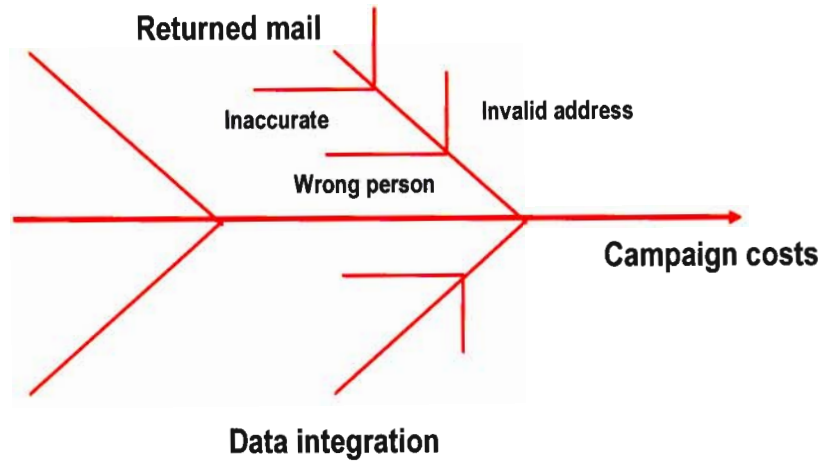


Figure 4.9 Ishikawa diagram highlighting the impact of poor data (SAS Institute, 2003)

#### 4.14 RESEARCHER'S JOURNAL

The researcher kept a journal for the duration of the project in order to record observations and events identified, which might have had an influence on the research and the project. The purpose of the journal and researcher observations was to focus on the users to identify problem areas within the research context (Beyer, 1995; Cohen & Manion, 1980; Mouton & Marais, 1996).

#### 4.15 CONCLUSION

From the above data presentations, action research is a methodology to bring the benefits of research into the ongoing work of researchers and practitioners in organisations, so that the benefits of the processes of research methodology and rigour can be used in the work context. Thus it focuses on the alignment of academic research with professional and organisational development. It becomes a process where researchers can organise the conditions under which they can learn from their own experience. In essence it is about change; that research should lead to change, and therefore change must be incorporated into the research process. (Leadership Center KwaZulu Natal University, Notice Board, 16 August 2005).

## CHAPTER 5 RESEARCH FINDINGS

*“Research is an active, diligent and systematic process of inquiry in order to discover, interpret or revise facts, events, behaviors, or theories, or to make practical applications with the help of such facts, laws or theories.*

*<http://en.wikipedia.org/wiki/Research>*

### 5.1 INTRODUCTION

“Without the whole business picture, it is difficult to make sound and dependable business decisions. Good decision-making requires a complete and accurate view of data. Integration of all data sources is the start to getting the complete picture - and the key to not compromising the decision-making process.” (MAS Strategies; 2005).

### 5.2 RESEARCH FINDINGS

“At one time, one blade of grass is as effective as a sixteen-foot golden statue of Buddha. At another time, a sixteen-foot golden statue of Buddha is as effective as a blade of grass” (Wu-Men) (Patton, M.Q. Qualitative Research & Evaluation Methods; Patton, M.W; 2001). One of the characteristics of qualitative results is to gain “real,” “rich,” and “deep” data (Key, J.P.; 1997).

Now that all is said and done, what conclusions does the researcher draw from all this work?

Chartwell interviewed utilities that have enjoyed success with their self-service customer applications. They were interviewed both online and via the telephone and all agreed that to encourage usage of self-service technologies by customers, the applications should be designed around the customer. There is no doubt that self-help applications such as online account management and automated phone systems can reduce costs and streamline workflow (Smith, L.D., 2002, p. 3).

### 5.2.1 SELF-SERVICE WEB PAGE

*Do customers want a self-service web page?*

Customers prefer self-service (O'Neil, P.; 2004).

The new breed of self-help is no doubt the Internet. When Chartwell researchers interviewed 70 contact centre managers during 2002, respondents were asked the open-ended question "What is the biggest trend you see emerging in utility service." 21 of 35 mentioned the Internet, while another 7 responded that self-help technologies or offering customers self-service options was the dominant trend emerging.

Online is investing in the customer and the customer's convenience. By empowering the customer, utilities are creating a deeper relationship with the customer.

### 5.2.2 STRUCTURE OF A SELF-SERVICE WEBSITE

*What are the requirements for a successful self-service website and happy self-service customers?*

Chartwell estimates that the number of utilities offering at least some form of self-service applications grew from 40% in 1999 to 67% in 2001 (Smith, D.L.; 2002, p. 4).

- When companies empower customers to transact how they want and when they want, the majority of customers will choose the lowest cost option.
- Create a self-service environment that parallels the ATM model: deliver those features that are used often and will be used successfully in this environment.
- Provide customers with a simple transition to a live agent. Too many companies create a robust self-service engine and hide their phone number deep within the site. Display contact details to live agents on every web page.
- Give the customer enough information to make an informed choice as to what live option they should use, such as queue time, handle time, Internet site up- or down time.

- Reward customers for using less expensive service options. For example, if your phone hours are Monday-Friday 8am – 5 pm, provide 24/7 Internet chat service. If wait time for the phone are typically three to four minutes, provide chat service within one minute.
- Require customers to first visit the website before calling. Eliminate inbound phone numbers to a contact centre that make an outbound call. Alternatively provide the customer with a PIN that they can enter into the IVR when calling. Customer rewards include no phone charges and more accurate skills routing.
- Keep web pages simple and easy to understand, with easy navigation.
- Buttons and links should clearly spell out the service option – for example “Pay Bill” instead of “Electronic Billing”.
- Keep navigation and hierarchy in line with that of the IVR.
- Avoid flash and popup menus.
- Keep links as few as possible.
- Keep navigation consistent.
- IVR menus should be short, easy to understand and placed in order of importance to customers.
- Always begin the menu with an option for customers calling in to report an outage or emergency such as a hanging conductor. Customers with such an urgent need should not have to wade through various bill-pay and account-status options before they can make their selection.
- Keep the menu hierarchy to as few levels as possible. Experts say five or more are too many.
- Keep verbiage to a minimum for IVRs and offer options in layman’s terms rather than utility speak.
- Always offer an option to speak with an agent – a running “escape route” such as Press 0 at any time to speak with a customer service representative is suggested.
- Avoid language that tells customers they are wrong or that their selection is invalid. Instead repeat the option if the customers make a wrong selection, then route the customer to a CSR if they make the wrong selection a second time.
- Keep navigation consistent.
- Present material in the same order and style.

Anywhere between 2% and 12% of customers will take advantage of online self-help applications and as much as 25% will use the IVR if those service offerings are tailored to meet the needs of the customer and presented in a way that is customer-friendly.

### 5.2.3 MEDIUM OF SELF-SERVICE

*Is there a preferred medium of self-service?*

Many utilities interviewed by Chartwell refer to customers placing service order requests via facsimile as a self-service function. This action does require a level of work by a service employee and is therefore not a true self-help application. In many ways IVR and web-based systems can offer customers the same information and capabilities. IVR offer the advantage in that more users have access to a telephone. Comparing the differences between IVR versus online customer service, the telephone is still the most preferred method of communication. It is still important to give customer options. Online customer service can satisfy an important segment of the customer base, and can provide more capabilities than an IVR. Web-based service applications offer a much more visual experience, which makes online a richer experience (Smith, L.D., 2002, p.4).

Chartwell research claims that the new breed of self-help is no doubt the Internet. Utilities are finally beginning to realise what can be done with the Internet in terms of web-based customer service transactions. It is clear that the Web will be the preferred method of conducting business for a certain segment of consumers (Smith, L.D., 2002, p.4).

Aberg et al. (2000) found in their studies that people trust intelligent information systems such as voice portals or web-bots less than natural persons. From an economic point of view, however, personal contact is not always sensible or feasible (Senger et al. 2002, p.1).



## 5.2.4 CONTENT OF A SELF-SERVICE WEB SITE

*What is best practice content for a self-service webpage?*

What kind of web-based services are utilities offering customers?

- Online bill payment. According to a recent Gartner Group study, 32 million Americans will be viewing and paying credit cards and other statements online. There are many reasons why customers do not pay, or at least do not pay on time, which online bill payment will improve.
- Register online.
- Acquire and maintain password.
- View details about an account.
- Update customer information.
- Start, stop or transfer service.
- Purchase new products.

A new form of online bill pay is the “pay-by-cheque” option, which works in the same fashion as payment capabilities of the IVR. Customers enter their billing information, then pay online using a cheque number. Unlike e-bill services that require customers to sign up and participate in an ongoing arrangement, customers paying with a cheque number have the freedom to use the service one month, then choose another payment option the following month.

## 5.3 PROCESS VERSUS FUNCTION

Customers’ biggest gripes centre on how difficult a product is to order, receive and pay for. The process design takes a customer’s point of view and then redesign workflow to save time, money and frustration. Customers care only about results, and results come only from end-to-end processes. Exploit the real power of the Internet to streamline processes that connect with customers and suppliers. Collaborate with everyone who can assist to drive out cost and overheads. Get past the idea of being a self-contained company that delivers a complete product.

Get used to the notion that one can achieve something only when virtually integrated with other processes (McGibbon, H.M., 2002).

Process	Function
Seamless organization.	Operate in silos of boxes.
Employees concerned about own output and value chain output.	Employees only concerned about their output.
Bosses become leaders, coaches.	Bosses directly control employees.
Employees more empowered.	Employees less empowered.
Have overall process indicators.	Have department based indicators.

*An example of where an end-to-end process is not working.*

A study claims that 26% of retailers fail to reply to customer e-mail inquiries. Although more than 26% of retailers failed to respond to e-mail inquiries from customers, the retail industry outperformed the cross-industry response rate of 41%. Although nearly 47% of retailers failed to respond to customer e-mails within 24 hours, they again outperformed the cross-industry rate at 6%. Some retailers dallied longer than other companies: 9% of retailers responded within 25 to 36 hour, compared to cross-industry rate of 8%. 12% of retailers responded after 48 hours, compared to the cross-industry rate of 11%. This was surprising to the study, as one would have thought that e-businesses would have a high quality e-mail customer service.

A swift reaction to each customer communication is mandatory for successful interaction management (possibly by merely pointing out that the processing of a request will be delayed). The speed with which interaction occurs demonstrates the esteem in which the customer is held by the organisation. Websites that offer an option to return contact, but has the recipient waiting in vain for a response, are counterproductive.

Every communication has both a content and human relationship aspect. The choice of the medium of communication and the form of its utilisation do not only depend on the answering of factual questions. The medium must also take the definition of the human relationship into consideration. For example, some customers may feel that a very informal tone in an e-mail message is disrespectful. Perceptions of cause-and-effect relations are subjective. Each partner of communication understand their behaviour as being the reaction of the other

person's behaviour. Interaction management must therefore ensure that the escalating communication sequences between the company and the customers are buffered.

## **5.4 LESSONS TO BE LEARNT**

Web self-service should not replace the contact centre. What it can do is to drive down the overall cost of supporting customers, reduce the workload at the contact centre and enhance customer experience.

There is a need to provide customers with the avenues to interact with organisations on their terms. Organisations need not to just meet customer expectations, but need to exceed them. It is good customer philosophy to provide options to customers. Today's fast-paced world is increasingly becoming characterised by technology-facilitated transactions and communication. Various information systems enable growing numbers of customers to obtain information or fulfill transactions instead of interacting face-to-face with a company employee. (Senger, Gronover & Riempp, 2002, p.1)

Becker (2002) mentions the following lessons:

### **5.4.1 Make sure customers want to do the work**

Customers will only accept responsibility if they believe that they will save money or time by doing the task themselves. Customers are glad to take control of finding or managing information on their own when they understand how it will benefit them. Nobody likes to wait on hold for a customer support representative to come on the line. Having instant access to the same database that the customer support representative uses to answer the question, as well as removing the middleman, has clear value.

### **5.4.2 Don't just slap a web interface on your existing management software and then wait for the customers to thank you**

Customers will not tolerate a difficult system. The biggest issue for customers is the time and cost savings involved in taking control of their information. If it is faster to do it the old way, then that is what they will use.

### **5.4.3 Watch web words**

Language matters. Do not confuse customers with acronyms and internal company jargon.

### **5.4.4 Give it time**

When launching a new self-service, do not assume that your customers will rush to start using it. Some customers will doubt the new system. Do not use customer adoption as the only metric for success. Find other ways to gauge the return on investment. Watch log files and solicit feedback via e-mail. Online surveys are an effective way to use statistical accuracy to counter individual customer bias.

### **5.4.5 Don't replace, augment**

Use the hybrid model that makes telephone support the second step when customers fail to find an answer online. Self-service web-based systems rarely eliminate their high-touch predecessors entirely. They simply reduce the need for them. Factor both systems into the cost/benefit equation when trying to decide whether to make a service into a self-service web application.

## **5.5 THE USEFULNESS OF ORGANISATION THEORY**

Organisation theory offers a diverse range of insights that managers need to be exposed to. It can help us to understand what organisations are, how they behave in a given environment and how they might behave in a different set of circumstances. It provides a way of thinking about organisations and a way of managing organisations (Millett, B., 2005).

## **5.6 USEFUL CONCEPTS TO REMEMBER FROM THIS RESEARCH**

### **5.6.1 Creative tension**

The difference between where we are now and where we want to be results in a feeling that we need to change. This feeling is known as creative tension.

### **5.6.2 Single-loop versus double-loop learning**

Single-loop learning tries to find a better way to do a process. Double-loop learning goes a step further and asks why we are doing the process in the first place. Should we be doing

something

else?

### **5.6.3 A mindshift**

Systems thinking needs the disciplines of building shared vision, mental models, team learning and personal mastery to realise its potential. Building a shared vision fosters commitment to the long term. Mental models focus on the openness needed to unearth shortcomings in our present ways of seeing the world. Team learning develops the skills of groups of people to look for the larger picture that lies beyond individual perspectives, and personal mastery fosters the personal motivation to continually learn how our actions affect our world. At the heart of a learning organisation is a mindshift – from seeing ourselves as separate from the world, to connected to the world, from seeing problems as caused by someone or something “out there”, to seeing how our own actions create the problems we experience. A learning organisation is a place where people are continually discovering how they create their reality, and how they can change it.

### **5.6.4 Triple-loop learning**

Learning about learning. Understanding why we make the choices we do. What predisposes us to act in certain ways?

### **5.6.5 Team learning**

A discipline that starts with dialogue, the capacity of members of a team to suspend assumptions and enter into a genuine “thinking together.” Team learning is vital, because teams, not individuals, are the fundamental learning unit in modern organisations.

## **5.7 CONCLUSION**

The T205 learning modules, in fact the entire Masters Degree two-year course, is a model of learning. The “wheel of learning” has four parts – reflecting (thinking and feeling), connecting (looking for links or hypotheses), deciding (choosing an action) and doing.

## CHAPTER 6

# RECOMMENDATIONS AND CONCLUSIONS

*“When computers (people) are networked, their power multiplies geometrically. Not only can people share all that information inside their machines, but they can reach out and instantly tap the power of other machines (people), essentially making the entire network their computer”.*

*McNeely, S (2005)*

### 6.1 INTRODUCTION

The goal of this study was to develop a means to assist managers in solving the dilemma described in the previous chapters: the appropriate balance between simplicity and flexibility in the e-service, online self-help options system. The growth in the number of PCs and Internet users has not been followed by a corresponding rapid adoption of utility services on the Internet. Self-service technologies are technological interfaces that enable customers to produce a service independent of direct service employee involvement (Meuter, et.al., 2000), i.e. person-to-technology service delivery (Dabholkar, 1994). Self-service technologies are viable for utilities, because information processing is essential to their services. Automation of standard services is expected to reduce the need for financial intermediaries, while there will be continued demand for non-standard, differentiated transactions and services (Emmons & Greenbaum, 1998). The technology holds great promise for future simplifications and automation.

## 6.2 RECOMMENDATIONS

### A framework for self-service utility options

<i>Primary activity</i>	<b>Function of self-service technology</b>		
	<i>Transaction</i>	<i>Customer Service</i>	<i>Self-help</i>
<i>Problem-finding and acquisition</i>	Support to the customer in identification of the decision situation.	Pre-transaction support in terms of information about utility products and terms.	Customer self-training in utility knowledge and utility services and other online support.
<i>Problem-solving</i>	Problem-solving support by templates or wizards that helps the customer to find alternative options.	Provide the customer with information that may help in setting decision criteria, example: benchmarks for the outcome of alternative decisions.	Customer self-training in utility analysis plus online support.
<i>Choice</i>	Decision models that aid customer in choosing among alternative tariffs.	Functions that let the customer evaluate expected outcome in relation to the total customer relationship; example: severance risk.	Customer self-training in utility analyses plus online support.
<i>Execution</i>	Automated services for execution or ordering of a utility product.	Monitoring of service execution.	Customer self-training and support in how to execute a decision in the self-service technology.
<i>Control evaluation</i>	Functions that allow customers to control the outcomes of service execution and compare it to expectations or a benchmark.	Monitoring of service history and benchmarking of decision outcomes, particularly for the total portfolio of a customer.	Customer self-training in evaluation of utility transaction outcome and portfolio analysis; example: bill history and bill trends.

Table 6.1 A framework of self-service utility options

In Table 6.1 the basic logic of value creation is problem solving. Value is created by mobilising resources and activities to resolve a particular customer problem (Stabell &

Fjeldstad, 1998). Customer value is not related to the solution itself, but to the value of solving the problem.

In addressing the problem-finding and acquisition, a self-service concept must provide the customer with tools that will support the decision situation (e.g. how to decide on the most cost-effective tariff) or an economic problem (e.g. how peak- and low demand tariff structures affect household and business economy). Access to information on utility services and terms is required for this process to reduce uncertainty.

The concept must include workflow management that facilitates the solutions. The customer will need access to information that can verify whether a potential alternative is a solution or not. In order to use these functions, the customer must have knowledge of utility analysis and understand the self-service concept.

The research concludes that utilities have not exploited the potential of self-service options. The framework proposed, based on the value shop configuration, addresses the issues of value creation and information exchange from self-service utility concepts. The framework only has value if it can help in discriminating between more and less successful self-service utility concepts. This study does not propose that one model is to another nor present any data that guide such a conclusion. The framework describes a model that can be used as a complementary concept that can be offered as stand-alone, or combined with other models.

Faced with the challenges mentioned above and in the previous chapters, how should web-based customer servicing be approached to ensure that both the customer and the business benefit?

- The 80/20 rule. It is important to look at ways that the Internet can help improve the quality of customer service and as a way to reduce the need for a customer enquiry in the first place. The 80/20 has proven that most service demands are for the same thing. Use the Web and try and address these recurring questions. Do not delay and try to cover everything at once.
- Focus on site usability. Ensure that the customer's experience is as positive as possible. Ensure that the website itself is doing its job properly. Update FAQs content, analyse customer click paths through key areas of the site to identify bottlenecks, improve product information, improve search functions, cross-link more effectively between sections, give clear contact options, make sure the "contact us" page has a clear link to the online



support content. These measures may not help reduce the number of offline customer enquiries, but they will reduce the website visit-to-enquire ratio.

- Capture customer needs and build a knowledge base. Store customer e-mails centrally for tracking and analysis purposes. These customer needs must be captured in order to begin the building of a knowledge base that can be made available to customers online.
- Automation is desirable in reducing unnecessary repetitive work for staff. If handled poorly, it can be one of the most annoying things for a customer to be confronted with. Automate processes such as “forgot password”, sending registration details, confirming outage notification logs. For e-mail inquiries, agent review of auto-suggested answers provides a better level of service than pure auto-respond and retains the benefits of automation. Tell customers upfront that it is an automated tool and let them know how to contact a service agent if they wish. Expectations need to be managed and alternate options offered.
- Recognise and reward the best customers. Retaining high-value customers is a key CRM concept and customer service has a large part to play. Define, identify and recognise the “best” customers online. Rewards could include guaranteed response time, special “hotline” contact numbers, access to premium support content, more personalised responses or a dedicated service representative.
- Offer multi-channel contact options. Offering clear, multiple (in particular, phone) contact options to customers online reassure them. This sense of reassurance, that personal intervention is at hand when needed, actually motivates customers to try and succeed in getting what they want using the website first – often they are online at home and need to disconnect their phone which is undesirable. The sense of trust this approach engenders also improves browse-to-buy conversion rates.
- Cross-channel customer data integration is vital. As Alf Saggese, EMEA, (2002) points out. “One of the most frustrating aspects of customer service is the need for customers to repeat their account details and the nature of their query at every turn.”

The topic of online self-help services involve many issues in service management, as well as those in information systems management. Rather than to provide a technical guide for the design of self-help web services systems, the study approaches the issue from a service management perspective and presents a customer orientation strategy for self-help design.

The study had certain limitations, for example, the sample size for the qualitative study is relatively small. Although it was the best available data set at the time that the researcher collected the data, it is limited to the context of the Internet utility industry. Future research is necessary with larger sample sizes and across different e-service segments. Meanwhile, as the

study has only made the first step in this area of customer orientation strategy and self-service options, to further explore the design of utility e-service, more research work devoted to a variety of issues related to this topic is needed. For example, though the study presented a general framework for a customer-orientation e-service design strategy, much remains to be done with regard to how this strategy can be used effectively for analysing a utility e-service industry. The diverse nature of service offerings in different customer segments means that different customers may require different trade-offs in e-service designs, as they value customers' complex needs differently. As a result the strategy and the decision model may have to be customised to reflect specific criteria of a particular e-service component.

### **6.3 CONCLUSION**

The point about action research is the common pursuit of adding to knowledge and knowing that in the sense of our understanding we are constantly growing in everything. An action research approach helps me to define myself in a narrative way, to be aware of my own motives and understandings (Jamieson, S (2000). Customer self-service must not develop into bad customer service. There is much that can be done in the short term to address customer needs. Appropriate and cost-effective customer service can be devised by analysing and categorising customer inquiries and investing in ways to address these enquiries via web self-service and e-mail. However, these strategies should always offer escalation paths to agent-based service.

The challenges are both technological, as well as centred around bringing people and processes up to speed. It must be done. Customer service is ultimately about the customer's trust in the organisation – about the brand – and this is vital for business survival and success.

In closing, the researcher views the present study to provide some interesting findings that it is hoped will motivate other academics to further explore the emerging issues inherent to e-service operations and web-services self-help options.

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**ANNEXURE A – ONLINE SURVEY QUESTIONNAIRE**

Thank you for helping make our site better!

Thank you for participating in our User Survey. We would like to know more about the people who use this website, and we need your help. There's nothing to identify you personally, and you won't receive any email or other sales pitches by participating.

The survey takes less than two minutes, and when you click the final submit button at the end, you will be returned to the page you just left. Please answer each question as best you can, and thanks again for your co-operation.

Which of the following groups includes your age?

- 13 years old or less**
- 14 - 17 years old**
- 18 - 24**
- 25 - 34**
- 35 - 44**
- 45 - 54**
- 55 - 64**
- 65 - 74**
- 75 or older**
- Prefer not to answer**

How did you first learn about our website?

Word of Mouth

Connect Newsletters

Contact Centre

Internet Search Engine

Other

How would you rate the information located on our Website?

Outstanding

Good

OK

Needs some improvement

Unsatisfactory

How would you rate the overall experience and effectiveness of our Website?

AA

How did you find the information you are looking for within our Website?

Index

Menus

Site Map

Search Feature

Surf until I find it

How easy is it to find the information you are seeking?

Very easy

Fairly easy

Difficult

Very difficult

Please report specific problems, give us feedback, or comments on our Website.

(200 character limit)

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The following information is optional.

Name:

Address:

City:

Region:

Country:

Postal Code:

E-mail:

Fax:

Can Eskom contact you as part of future surveys?  Yes  No

<input type="button" value="Submit"/>	<input type="button" value="Reset"/>
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