

**Information Technology Service Management and its
Application in a South African Non-Profit Service
Organisation**

By

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CONFIDENTIALITY CLAUSE

30 June 2004

TO WHOM IT MAY CONCERN

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Sincerely

A. Coreejas

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DECLARATION

This research has not been previously accepted for any degree and is not being currently submitted in candidature for any degree.

Signed.....

Date.....

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I hereby wish to express my gratitude to the following individuals who enabled this document to be successfully and timeously completed:

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ABSTRACT

Customer satisfaction is a critical component of a business's competitive strategy. Autolab Csi, a division of the South African Sugar Association, is operating in a deregulated market environment and thus has to ensure that customers are always satisfied with the quality of service received. Poor service can threaten the viability of a business and Autolab Csi need to establish suitable and effective service delivery mechanisms and minimise the threat of competitors entering the sugar industry laboratory systems services market.

Customer satisfaction is dependent on the quality of service that a service provider has to offer its customers. Autolab Csi have embarked on a programme to adopt best practice Information Technology (IT) service process as described in the Information Technology Infrastructure Library (ITIL) model as a means to improve customer satisfaction. The ITIL model consists of twelve service processes that are grouped into four categories namely, Service Delivery, Service Support, Service Desk and Security Management. ITIL is not recognised by the International Standards Organisation (ISO) as an international standard for IT service delivery. The British Standards Institute standard BS15000 had been released to address the need for a recognised standard and is shortly due to be adopted by the ISO. The study hypothesises there is adoption of all twelve service processes by Autolab Csi but not all processes have been completely and/or successfully implemented. Compliance of the ITIL Service Delivery process to the BS15000 standard is reviewed concomitantly with the ITIL adoption assessment. As part of the process of implementation of the ITIL framework, Autolab Csi had faced challenges to the process yet had also benefited. The study investigates these benefits and challenges from the perspective of understanding how success can be achieved with the implementation of ITIL processes.

The study shows that Autolab Csi has made measurable progress in the implementation of all twelve ITIL service processes. The service process areas of Security Management, Service Desk and some processes of Service Delivery show the highest levels of ITIL compliance. Service Support shows the lowest levels of ITIL compliance in particular, the Change and Release Management processes. The presented data allows for the development of targeted strategies to continuously improve Autolab Csi's service delivery mechanisms.

TABLE OF CONTENTS

	Page
Confidentiality Clause	i
Declaration	ii
Acknowledgements	iii
Abstract	iv
List of Tables	ix
List of Figures	x
List of Appendices	xi
1. CHAPTER 1 – INTRODUCTION	
1.1 BACKGROUND	1
1.2 BACKGROUND OF THE RESEARCH	2
1.3 MOTIVATION FOR THE RESEARCH	3
1.4 VALUE OF THE PROJECT	4
1.5 PROBLEM STATEMENT	5
1.6 OBJECTIVES OF THE STUDY	5
1.7 LIMITATIONS OF THE STUDY	6
1.8 STRUCTURE OF THE STUDY	6
1 CHAPTER 2 – LITRETURE REVIEW	
2.1 INTRODUCTION	8
2.2 SERVICE QUALITY	9
2.2.1 Definition of Service	9
2.2.2 Categories of Service Mix	10
2.2.3 Characteristics of Services	10
2.2.4 Definition of Service Quality	11
2.3 CONSUMER SATISFACTION	12
2.3.1 Introduction	12

2.3.2	Defining Consumer Satisfaction	14
2.3.3	Managing Consumer Perceptions and Expectations	14
2.3.4	Consumer Satisfaction and Internal Business Processes	15
2.4	CONSUMER LOYALTY	16
2.4.1	Introduction	16
2.4.2	Definition of Consumer Loyalty	17
2.5	INFORMATION TECHNOLOGY INFRASTRUCTURE LIBRARY (ITIL)	19
2.5.1	Introduction	19
2.5.2	ITIL Service Management Model	21
2.5.3	Service Delivery	22
2.5.4	Service Level Management (SLM) and the Service Level Agreement (SLA)	25
2.5.5	Service Support	29
2.5.6	Service Desk	31
2.5.7	Security Management	31
2.6	BS15000 CERTIFICATION	32
2.6.1	Introduction	32
2.6.2	Defining BS15000	33
2.6.3	Demonstrating BS15000 Conformance	34
2.7	CONCLUSION	35
3	CHAPTER 3 - RESEARCH METHODOLOGY	
3.1	INTRODUCTION	36
3.2	RESEARCH DESIGN	37
3.2.1	Attribute Selection	37
3.2.2	Target Population	38
3.2.3	Data Collection	39
3.2.4	Data Analysis	41
3.2.5	Reliability	41

3.2.6	Validity	42
3.3	OVERVIEW OF THE SOUTH AFRICAN SUGAR INDUSTRY	44
3.3.1	Introduction	44
3.3.2	Market Structure	45
3.3.3	The South African Sugar Association	48
3.3.4	Autolab Csi	51
3.4	CONCLUSION	56
4	CHAPTER 4 – RESULTS AND FINDINGS	
4.1	INTRODUCTION	57
4.2	CURRENT SERVICE MANAGEMENT PROCESSES AT AUTOLAB Csi	57
4.2.1	Introduction	57
4.2.2	Service Delivery	58
4.2.3	Service Support	59
4.2.4	Service Desk	61
4.2.5	Security Management	61
4.3	ITIL ASSESSMENT	62
4.3.1	Introduction	62
4.3.2	Survey Results	62
4.4	BS15000 Assessment	67
4.4.1	Introduction	67
4.4.2	Survey Results	68
4.5	ITIL IMPLEMENTATION BENEFITS AND CHALLENGES	71
4.5.1	ITIL Implementation Benefits	71
4.5.2	ITIL Implementation Challenges	73
4.6	CONCLUSION	74
5	CHAPTER 5 – DISCUSSION	

5.1	INTRODUCTION	76
5.2	RESEARCH RESULTS	77
5.2.1	ITIL Service Process Implementation	77
5.2.2	BS15000 Compliance	85
5.2.3	ITIL Implementation Benefits and Challenges	87
5.3	Conclusion	88
6	CHAPTER 6 – CONCLUSION	
6.1	INTRODUCTION	89
6.2	CONCLUSIONS OF RESEARCH FINDINGS	89
6.3	RECOMMENDATIONS	90
6.4	FUTURE RESEARCH	91
7	BIBLIOGRAPHY	93

LIST OF TABLES

Table		Page
4.1	Survey Responses per Process Area	63
4.2	Process Area Average Score	65
4.3	Process Score Ranking	66
4.4	BS15000 Compliance for the Service Delivery Process	68
4.5	Process Capability Framework	70
5.1	Service Delivery Responses – Percentages	77
5.2	Service Support Responses – Percentages	80
5.3	Service Desk Responses – Percentages	82
5.4	Security Management Responses – Percentages	83
5.5	Process Score Rating	84
5.6	BS15000 Compliance for the Service Delivery Process	86
5.7	BS15000 Service Attribute Compliance	86

LIST OF FIGURES

Figure		Page
2.1	Service Management: The Objective Tree	20
2.2	The ITIL Framework	22
2.3	Service Delivery and its Component Processes	24
2.4	Service Support and its Component Processes	30
2.5	BS15000 Components	33
4.1	Quantum of all Responses	64
4.2	Average Process Scores	67

LIST OF APPENDICES

Appendix		Page
A	Glossary of Terms	106
B	IT Service Management Survey Questionnaire	111
C	BS15000 Compliance Assessment Questionnaire	136
D	Autolab Csi Service Level Agreement	162

1 CHAPTER 1 – INTRODUCTION

1.1 BACKGROUND

By 2002, 50% of IT organisations (75% by 2004) will offer broad IT product portfolios tied to external-value and internal operations metrics. By 2003, 75% of IT groups will adopt centre-of-excellence models to build organisational structures around products and customer relationships, leverage end-to-end process capabilities, infuse dynamic service level management, and use operational patterns for impact assessment and rapid change assimilation (Meta Group, 2000). A top-down process design approach will enable IT operations groups to identify process linkages, define input/output, and facilitate effective process automation. This will improve the service quality delivered to business units and/or customers (Meta Group, 2001).

The South African sugar industry is a significant industry and is especially important in providing employment in the predominantly rural areas of KwaZulu-Natal, Mpumalanga and the Eastern Cape. The South African Sugar Association (SASA) provides a range of specialist support services to the sugar industry to ensure its profitability, global competitiveness and long-term sustainability. Autolab Csi, part of the Information Technology (IT) division of SASA, provides a custom designed computerised Laboratory Information Management System (LIMS) to fourteen individual milling and growing areas within the areas mentioned above as well as nine mills in five other African countries. Within a South African context, the LIMS system is designed to manage grower's cane estimates and delivery allocations, manage the flow of sugarcane into the mill and provide laboratory systems for the testing of sugarcane products by the mill and SASA Cane Testing Service (CTS) laboratories (South African Sugar Association, 2004).

Historically, Autolab Csi have not had a formalised process for the delivery of IT services to their customers and in light of the changes to the legislation governing the Sugar Industry, the decision was made to implement a Best Practice framework to address this shortcoming. It is in the interest of Autolab Csi to maintain sound, long-

term relationships with each customer grouping and is therefore important to clarify and document exactly what type and level of service is required to ensure the desired long-term relationship.

This study investigates the adoption of a Best Practice service delivery framework by Autolab Csi in response to the need to build suitable organisational structures around existing products and customer relationships whilst infusing dynamic service level management and using operational patterns for impact assessment and rapid change assimilation. The impact of these activities will affect the development of future business strategies at Autolab Csi.

1.2 BACKGROUND OF THE RESEARCH

The increased significance of the services sector to the global economy has led to a heightened concern by practitioners, as well as consumers, regarding the quality of services being offered (Sung et al., 1997). This increased significance is reflected in the way consumers now critically assess the standard of service being provided by competing service firms (Antonacopoulou and Kandampully, 2000). Within the current world marketplace, some of the greatest challenges facing organisations include the intensifying global competition, the continuous increase in consumer expectations and consumers' subsequent demands as the quality of service improves (Wong and Sohal, 2003a).

In an attempt to address these challenges, organisations need to adopt proactive strategies that will assist in building and sustaining a competitive edge (Kandampully, 1998). Specifically, the delivery of service quality is increasingly being seen as central to service providers' efforts to position themselves effectively in the marketplace. As a result, the concept of quality and its relationship with the service industries has become a major focus area for organisations within this sector (Lovelock, Patterson and Walter, 1998). Leading service organisations strive to

maintain a superior quality of service in an effort to gain and maintain consumer loyalty and consequently market share.

IT service management is concerned with delivering and supporting IT services that is appropriate to the business requirements of the organisation. ITIL provides a comprehensive, consistent and coherent set of best practices for the IT Services Management processes, promoting a quality approach to achieving business effectiveness and efficiency in the use of information systems (OGC, 2003).

1.3 MOTIVATION FOR THE RESEARCH

Organisations operating in a service industry find it is important and valuable to understand the satisfaction and loyalty of their customers as a group. It is equally critical to understand the attitudes and behaviour of individual customers. Depending on the customers unique behavioural attributes, intensity of satisfaction or dissatisfaction and their ability to act on their satisfaction or dissatisfaction, customers behave in four basic ways: as loyalists, as defectors, as mercenaries or as hostages. Every service organisation's ultimate objective is turning as many customers as possible into the most valuable type of loyalist and eliminating the most dangerous type of defector or hostage (Jones and Sasser, 1995).

Autolab Csi, until a few years ago, was operating in a monopolistic environment where customers had no other option but to use their services, and customers were therefore hostages. Many organisations operating in this environment see little reason or benefit to respond to the plight of hostage customers who in turn, experience the worst an organisation has to offer with no chance of seeking redress by taking their business elsewhere (Jones and Sasser, 1995). There is therefore no incentive for the organisation to correct problems, as they exist in the minds of their customers.

When the source of a monopoly's hold on customers disappears, whether the cause is deregulation, the emergence of an alternative technology or the arrival of new

competitors, the market can become highly competitive in a short period of time (Jones and Sasser, 1995). Autolab Csi is now operating in a deregulated environment and has to develop a successful strategy to manage customer satisfaction and maintain exceptional internal operational practices to remain cost competitive. By adopting a formalised approach to service delivery, and especially service level management, Autolab Csi can manage the expectations of their customers i.e. enhance customer satisfaction whilst ensuring increased flexibility and adaptability for the services provided (OGC, 2003). Service delivery is not a single task for the organisation to adopt. Rather it consists of five integrated processes that all need to be addressed and understood to meet the requirements for providing good best practice service delivery.

With the removal of entry restrictions for the provision of a Laboratory Information Management System to the sugar industry, Autolab Csi has to ensure that customers are satisfied with the service they receive and will remain loyal. Autolab Csi need to engage in a process of defining and understanding customer service requirements and ensuring that the processes within the organisation exist or are created to meet the defined requirements if a business relationship is to be maintained. Enlightening customers to the process of service delivery and its benefits to both parties, will enable Autolab Csi to implement an objective process for service level management with quantifiable metrics of performance. The review of the quality of service will move from the subjective arena into one of agreed measurable variables. Tracking of these variables by the organisation will provide a platform from which future business change strategies can be developed to better address the changing service needs of the diverse group of customers.

1.4 VALUE OF THE PROJECT

Along with the need to keep IT costs in line is the need to demonstrate the value of IT (Gartner, 2002). The profit incentive of most organisations is a strong motivator to ensure competitive service delivery as bad service invariably leads to a loss of market share and reduced profits. This study looks at a process framework for service

delivery within the context of a non-profit organisation where the focus is not on revenue generation but rather on cost reduction. The objective of efficient utilisation of available resources is common under both scenarios but differences do exist at the strategic level and also in the variety of services the non-profit organisation may adopt to achieve its strategic goal. The fact that Autolab Csi has a monopolistic position within the market for LIMS systems within the sugar industry provides further insight into how benefits of service improvements can be shared by the service provider and customer thereby building a stronger long term business relationship.

1.5 PROBLEM STATEMENT

Autolab Csi had initiated a programme for formal service management process adoption at the start of their 2003/4 financial year after a protracted investigative project. The catalyst for the decision was the implementation of a new Laboratory Information Management System at all fourteen of their South African operated sites. The cost to the sugar industry for the new system was in excess of nine million Rand in total. No formal IT service management practice and processes existed within Autolab Csi at the inception of the ITIL project.

The area of concern for Autolab Csi management was to determine how effective had been their strategies for the implementation of a formal IT service management methodology at Autolab Csi. Their strategic intent was one of making tools available to the organisation, and their customers, to better manage and deliver on the service requirements of their customers.

1.6 OBJECTIVES OF THE STUDY

- **Overall objective** - To identify the degree of success in implementing best practices, as described in the ITIL framework for IT Service Management, with particular reference to the Service Delivery process.

- **Sub-objective 1** - To identify which of the twelve ITIL processes Autolab Csi has successfully implemented.
Hypothesis 1 - Autolab Csi has made progress in implementing all twelve ITIL process.
- **Sub-objective 2** - To identify which process areas require further development to ensure compliance with best practice guidelines.
Hypothesis 2 - Not all best practice processes have been completely implemented.
- **Sub-objective 3** - To determine the benefit that has accrued to Autolab Csi as a result of the adoption of the best practice framework for Service Delivery.
Hypothesis 3 - Benefits have accrued to Autolab Csi as a result of the adoption of the ITIL best practice framework.

1.7 LIMITATIONS OF STUDY

Review of the ITIL process framework and its application has been limited to the specific conditions prevailing in the South African sugar industry. Furthermore, the study focuses on the internal business processes of Autolab Csi and does not seek to obtain feedback from customers on the quality of the service being delivered. Detailed analysis of interactions and information flows between all four ITIL processes of service delivery has not been covered.

1.8 STRUCTURE OF THE STUDY

Chapter 1 provides an introduction to the study. The rationale for the study is presented together with its objectives. The structure of the dissertation is also clarified in this chapter.

Chapter 2 offers a review of the related literature on service quality and service management for a technology provider. The concept of service quality is defined and Information Technology Infrastructure Library (ITIL) service management model is briefly assessed. The BS15000 standard is introduced and its relationship to the ITIL service management model explained.

Chapter 3 presents the design of the research undertaken. This chapter discusses the sampling method used, the questionnaire design, the data collection procedure and the selection of the method of statistical analysis. An overview of the South African Sugar Industry, in particular the South African Sugar Association, and its marketing environment are presented. The service offerings of Autolab Csi are presented at the conclusion of the chapter.

Chapter 4 presents the research findings and results.

Chapter 5 presents the discussion and interpretation of the results presented in Chapter 4.

Chapter 6 presents the overall conclusions reached from the research, as well as recommendations for the Autolab Csi and for further research.

Having introduced the study in Chapter 1, the next chapter provides an overview of the South African sugar industry.

2 CHAPTER 2 – LITREATURE REVIEW

2.1 INTRODUCTION

The increased significance of the services sector to the global economy has led to a heightened concern by practitioners, as well as consumers, regarding the quality of services being offered (Sung et al., 1997). This increased significance is reflected in the way consumers now critically assess the standard of service being provided by competing service firms (Antonacopoulou and Kandampully, 2000). Within the current world marketplace, some of the greatest challenges facing organisations include the intensifying global competition, the continuous increase in consumer expectations and consumers' subsequent demands as the quality of service improves (Wong and Sohal, 2003a).

In an attempt to address these challenges, organisations need to adopt proactive strategies that will assist in building and sustaining a competitive edge (Kandampully, 1998). Specifically, the delivery of service quality is increasingly being seen as central to service providers' efforts to position themselves effectively in the marketplace. As a result, the concept of quality and its relationship with the service industries has become a major focus area for organisations within this sector (Lovelock, Patterson and Walter, 1998). Leading service organisations strive to maintain a superior quality of service in an effort to gain and maintain consumer loyalty and consequently market share.

A service organisation's long-term success in a market is therefore determined by its ability to expand and maintain a large and loyal consumer base (Zeithaml, Berry and Parasuraman, 1996). Zeithaml (2000) has further shown that leveraging service quality contributes to both the retention and expansion of the existing consumer base.

Autolab Csi, as a service organisation, is facing the challenge of increasing consumer expectations and the subsequent demand in the quality of service received (South

African Sugar Association, 2003). As described in Chapter 3, having operated in a protected, monopolistic market prior to 1994, Autolab Csi is being critically assessed by consumers who are now free to take their business to other service providers. Even though there is currently very little competition in the market in which Autolab Csi operates, currently only one other firm but more have expressed an interest, providing consumers with outstanding service quality may be the only reliable way of achieving sustained consumer satisfaction and loyalty (Rossler, 2004).

Service quality is being regarded as a causal antecedent of consumer satisfaction (Taylor and Baker, 1994), consequently, service organisations hoping to achieve continuous consumer satisfaction and loyalty needs to consider this important relationship. This chapter will focus on the definition and characteristics of service and the definition of service quality and consumer loyalty.

2.2 SERVICE QUALITY

2.2.1 Definition of Service

The level of satisfaction among consumers is a good indicator of the level of quality of the service that consumers receive. Therefore, understanding service quality is a crucial step in achieving consumer satisfaction.

Service can be defined as any act or performance that one party can offer to another that is essentially intangible and does not result in the ownership of anything (Kotler, 2000). Its production may, or may not, be tied to a physical product. The following categories of services mix are described and are used to classify Autolab Csi's offering.

2.2.2 Categories of Service Mix

A company's offering to the marketplace often includes some services. The service component can be a minor or a major part of the total offering. Five categories of offerings can be distinguished (Kotler, 2000):

- *Pure tangible good*: the offering consists primarily of a tangible good. No services accompany the product.
- *Tangible good with accompanying services*: the offering consists of a tangible good accompanied by one or more services.
- *Hybrid*: the offering consists of equal parts of goods and services.
- *Major service with accompanying minor goods and services*: the offering consists of a major service along with additional services or supporting goods.
- *Pure service*: the offering consists primarily of a service.

Autolab Csi's service offering consists of providing a service accompanied by some additional services and supporting goods, to its consumers. The service can therefore be classified as being a Major service with accompanying minor goods and services.

2.2.3 Characteristics of Services

According to Kotler (2000), services have four major characteristics:

- *Intangibility*: services are intangible and unlike physical products cannot be seen, tasted, felt, heard or smelled before they are purchased. Buyers will, therefore, look for signs or evidence of the service quality and will draw inferences about quality from the location, staff, communication material, symbols and price they see.
- *Inseparability*: services are typically produced and consumed simultaneously and are, therefore, not manufactured, put into inventory, distributed and consumed later.
- *Variability*: services are deemed highly variable because they depend on who provides them, and when and where they are provided.

- *Perishability*: services cannot be stored.

The system configuration and support that Autolab Csi provides are intangible, inseparable, variable and perishable. Applying the above definition of a service, Autolab Csi can be classified as being in the services market. Consumer satisfaction will depend on the level of service quality provided by Autolab Csi.

Literature pertaining to service quality is reviewed in the following section.

2.2.4 Definition of Service Quality

Parasuraman, Zeithaml and Berry (1988) define service quality as the degree of discrepancy between consumers' normative expectations for the service and their perceptions of the service performance.

Earlier work by Gronroos (1978) proposed that service quality comprises three dimensions. The first dimension is the technical outcome of quality, which is described as the actual outcome of the service encounter. In most cases, consumers have the ability measure the service outcome in an objective manner. The second dimension is the functional quality of the service encounter, which is the element of quality concerned with the interaction between the provider and the recipient of a service. This dimension is often perceived by the consumers in a subjective manner. The final dimension is corporate image, which is concerned with consumers' perceptions of the service organisation. Image depends on several inter-related factors and includes technical and functional quality, price, external communications, physical location, appearance of the site and the competence and behaviour of the service firm's employees.

Later work by Gronroos (1984) defined service quality as a perceived judgement resulting from an evaluation process where consumers compare their expectations of service delivery with the actual service they perceive to have received. Gronroos

went further in this study to state that the quality of service is dependant on two variables, expected service and perceived service and that any previous experience with a service could also influence the expectations of the consumer. The perceived service in contrast, is the result of the consumers' perception of the service itself.

Berry, Zeithaml and Parasuraman (1985) argue that consumers evaluate the level of service quality they receive based on three types of attributes, namely:

- Search attributes such as physical facilities, appearance of personnel and the supplier's image can be considered before consuming the service
- Experience attributes are assessed on the basis of the actual service experience, for example, responding quickly to a request or performing a service at the agreed standard
- Credence attributes such as security of an investment cannot be determined even after repeated use of a service.

The most significant contribution of the research described above was to separate service quality into attributes of process and outcome quality. Having reviewed the literature on service quality in this section, the literature on consumer satisfaction is reviewed in the following section.

2.3 CONSUMER SATISFACTION

2.3.1 Introduction

Service quality and consumer satisfaction are the two core concepts that are the crux of marketing theory and practice (Spreng and Mackoy, 1996). In today's world of intense competition, the key to sustainable competitive advantage lies in delivering high quality service that will, in turn, result in satisfied consumers (Shemwell, Yavas and Bilgin, 1998). Increasing consumer satisfaction and consumer loyalty leads to improved profits through a growth in market share, positive word-of-mouth and lower marketing expenditure (Heskett, Sasser and Schlesinger, 1997).

Ensuring consumer satisfaction is one of the most important tasks facing business today. Gerson (1993) views consumer satisfaction as whenever a consumer's needs, real or perceived, are met or exceeded. Spreng, MacKenzie and Olshavsky (1996) describe satisfaction to incorporate both the needs and the desires of the consumer, and that failure to include consumer desires has caused logical inconsistencies in satisfaction research. Further research by Gabbott and Hogg (1999) suggests that it is not always necessary to be either satisfied or dissatisfied; the consumer may, in fact, be totally neutral to aspects of the service.

Consumer loyalty, as demonstrated by repeat business, has been shown to be a key determinant of the success of many service companies (Reichheld and Sasser, 1990). While a high level of consumer satisfaction does not necessarily guarantee consumer loyalty, dissatisfaction will cause consumers to take their business elsewhere. In other words, consumers who are dissatisfied with the level of service they have received will be less likely to return in future, or if they do return, they will most likely do so with less frequency than they did in the past. Conversely, consumers who are extremely satisfied with their service experience with a given firm, will most likely continue to return to that firm at the same frequency or even more frequently (Reichheld and Sasser, 1990).

The consumer's experience with the service firm is also likely to be multiplied through interactions with other prospective consumers via word-of-mouth. When consumers are satisfied with the service they receive they influence the expectations of other consumers (or potential consumers) with whom they interact. When they are dissatisfied with the service, consumers are even more likely to influence the expectations of others (Davis and Heineke, 1998).

There has been some debate as to whether service quality is a cause of satisfaction (Cronin and Taylor, 1992; Parasuraman, Zeithamel and Berry, 1985) or a consequence of satisfaction (Bolton and Drew, 1991). This study does not address the debate itself, but adopts the view that service quality is antecedent to consumer satisfaction and consumer loyalty.

2.3.2 Defining Consumer Satisfaction

Kotler (2000) defines satisfaction as feelings of pleasure or disappointment resulting from comparing a product's perceived performance in relation to the consumer's expectations. This definition makes it clear that satisfaction is a function of perceived performance and expectations. If the performance falls short of expectations, the consumer is dissatisfied, and if performance matches the expectations, the consumer is satisfied. If the performance exceeds expectations, the consumer is highly satisfied (Kotler, 2000). Many companies, including Autolab Csi, aim for high satisfaction since consumers who are merely satisfied still find it easy to switch service providers when a better offer presents itself. Those consumers who are highly satisfied are much less ready to switch implying that the organisation has achieved a high degree consumer loyalty.

2.3.3 Managing Consumer Perceptions and Expectations

Horovitz (2003) states that all of the above items are linked and the best organisations manage the whole chain by

- Identifying which needs are implicit i.e. those whose absence will cause dissatisfaction.
- Identifying how needs are modified in perception.
- Determining how expectations are formed.

Managing consumer perceptions and expectations is especially important in the service sector, which sells two things: the service itself, and the ability to serve, which the consumer has to believe can be delivered (Kotler, 2000).

The work of Smith (1995) proposes that there are three aspects to managing consumer satisfaction, namely, the legal perspective, the consumer perspective and the manager's perspective.

- *The legal perspective* - managing consumer satisfaction means meeting specific standards of product or service: price, delivery, safety and quality. There are also codes of practice and other self-regulating controls, which may apply to specific businesses. Consumer satisfaction from a legal perspective is ensured when consumers are not misled or left dissatisfied or with inferior or faulty goods or services and the service provider has conformed with the codes of good practice and other requirements that apply to the business's particular activities.
- *The consumer perspective* - the heart of consumer satisfaction is meeting or exceeding consumers' expectations. Managing consumer satisfaction is a continuous process that does not begin or end with a purchase; it covers the entire ownership experience from selecting a product, to purchase, through aftercare to repeat purchase. There are three clear stages: pre-sales, sales and after-sales, and all three stages will contribute to consumer satisfaction.
- *The manager's perspective* - of handling consumer satisfaction must start from the realisation that what the manager provides extends well beyond the core product or service. Managing consumer satisfaction begins with an understanding of the elements that come together to determine satisfaction levels.

2.3.4 Consumer Satisfaction and Internal Business Processes

Consumer satisfaction is linked to both business performance in terms of market share and profitability, and internally driven critical processes (Naumann and Giel, 1995). This implies that a focus on improving consumer satisfaction levels allows an organisation to continuously improve those internal business processes that drive consumer satisfaction, which, in turn drives market share and market share drives financial performance. Internal business process improvement initiatives that focus on consumer satisfaction have to form part of the routine business performance measurement system. One such measurement tool, the Balanced Scorecard (Kaplan and Norton, 1992), is described as a business performance measurement system that

covers four perspectives, namely, financial, learning and growth, internal business process and consumers. The Balanced Scorecard is intended to support the management of strategy implementation and organisations, in reviewing operations, would be able to monitor non-financial and financial performance measures. This tool would be of benefit to Autolab Csi in monitoring the ongoing implementation of consumer satisfaction improvement strategies within the ITIL developed framework.

Having reviewed the literature on consumer satisfaction in this section, the literature on consumer loyalty is reviewed in the following section. The impact of consumer satisfaction on consumer loyalty is an important link that is made. The link between these two variables is important from this study's perspective, as achieving growth in consumer loyalty through increased consumer satisfaction and improved service quality is the ultimate business goal of Autolab Csi.

2.4 CONSUMER LOYALTY

2.4.1 Introduction

Even in markets with relatively little competition, providing consumers with outstanding value may be the only way to achieve sustained consumer satisfaction and loyalty. Research shows that perceived service quality has an impact on consumer satisfaction, which in turn leads to later behaviours (loyalty) towards the service organisation (Andreassen and Lindestad, 1998). It can therefore be reasoned that service quality appears to be a causal antecedent of consumer satisfaction, which mediates the relationship between service quality judgments and behavioural intentions (Taylor and Baker, 1994). In a further study conducted in five different service industries, a positive relationship was found between perceived service quality and consumer loyalty (de Ruyter, Wetzels and Bloemer, 1998).

2.4.2 Definition of Consumer Loyalty

Simply stated, consumer loyalty is purchase behaviour, unlike consumer satisfaction, which is an attitude (Griffin, 1996). Consumer loyalty has been generally described as occurring when consumers repeatedly purchase goods or service over time, and hold favourable attitudes towards goods or service, or towards the company supplying the goods or service (Wong and Sohal, 2003b).

According to Wong and Sohal (2003a) consumer loyalty appears to consist of three separate dimensions, namely, the behavioural, attitudinal and cognitive dimensions. From the study of Jacoby and Chestnut (as cited by Wong and Sohal, 2003a: 294) the behavioural dimension of loyalty has been interpreted as a form of consumer behaviour (for example repeat purchasing behaviour) directed towards a particular service; the proportion of purchases devoted to a given brand (Cunningham, 1956) and the probability of repeat purchases (Ehrenburg, 1965). Criticism by Day (1969) suggests that behavioural measures of loyalty lack a conceptual basis and have a narrow and outcome-focused view of what is a dynamic process. Further criticism from Dick and Basu (1994) suggests that a major problem with behavioural loyalty is that it does not provide a comprehensive understanding of the factors underlying repeat purchase.

The attitudinal dimension of loyalty is described in the study of Jacoby and Chestnut (as cited by Wong and Sohal, 2003a: 295) as a psychological commitment to a brand. Jarvis and Wilcox (1976) suggest that the attitudinal dimension includes consumer's preferences or intentions. As a result of the above considerations, Dick and Basu (1994) encourage the use of composite measures of loyalty, as the restriction of loyalty to either behaviour or attitude seems incomplete. They therefore propose that loyalty is determined by a combination of repeat purchase levels (repeat patronage behaviour) and relative attitude (level of attachment). It would seem that composite measures of behavioural and attitudinal loyalty tend to capture the essence of loyalty more effectively (Wong and Sohal, 2003a).

Oliver (1997) proposes that consumer loyalty can be viewed as developing in four phases. In the first cognitive loyalty phase, the information base available to the consumer compellingly points to one brand over another. In this phase, the level of attachment a consumer feels for the organisation's offerings is low. The second phase of loyalty is based on affect. Affective loyalty, as an attitude, is more difficult to dislodge than cognitive loyalty, since the loyalty is encoded in the consumer's mind as affect and not solely as cognition. The third loyalty phase, cognitive loyalty, is a state containing deeply held commitment to buy. Action loyalty is the last loyalty phase where intention accompanied by motivation leads to a state of readiness to act and a desire to overcome obstacles to achieve action (Oliver, 1997).

Jones and Sasser (1995) state that there are two types of loyalty: true long-term loyalty and false loyalty. A variety of factors can generate false loyalty or make consumers seem deeply loyal when they are not. These include government regulations that limit competition, high switching costs, propriety technology that limits alternatives and strong loyalty-promotion programmes. Jones and Sasser (1995) made a startling discovery about consumers in such markets: whenever such consumers have choices and feel free to make a choice, they act like consumers in markets with intense competition and will only remain loyal if they are completely satisfied. This is the threat faced by Autolab Csi.

Different satisfaction levels reflect different issues and therefore require different actions (Naumann and Giel, 1995). The level of satisfaction among targeted consumers is a good indicator of the level of quality of the product or services they are receiving (Pizam and Ellis, 1999). The way to raise the level of consumer satisfaction from neutral to satisfied, or from satisfied to completely satisfied, is not just a matter of doing a better job of delivering the same value or experience that the organisation is currently delivering (Jones and Sasser, 1995). There are four elements that affect consumer satisfaction: the basic elements of the product or service; basic support services; recovery process for counteracting bad experiences and extraordinary services that so excel in meeting consumers' personal preferences that they make the product or service seem customised (Kotler, 2000).

The preceding section of this chapter has reviewed two critical aspects in defining customer satisfaction, namely customer expectations and customer perception. Some authors define customer satisfaction as the difference between customer perceptions and expectations, whilst others define satisfaction primarily in terms of the customer's perception of service. The current Autolab Csi study follows the latter view. Other aspects of customer satisfaction, which were in the context of managing perceptions and expectations, were also briefly reviewed. As stated previously, high customer satisfaction results in high customer loyalty. This link was reviewed in section 2.4 of this chapter.

The following section will review the rationale behind and for the IT Service Management ITIL framework and will discuss the various components that make up this framework. The final section looks at the BS15000 certification now available to service organisations who require an audited compliance certificate for best practice process adoption.

2.5 INFORMATION TECHNOLOGY INFRASTRUCTURE LIBRARY (ITIL)

2.5.1 Introduction

Most organisations now understand the benefits of having IT supporting the majority of their business processes. Few however, realise the potential of truly aligning the IT divisions' objectives with the business objectives. More and more organisations are starting to recognise IT as being a crucial delivery mechanism of services to their customers (OGC, 2003). As depicted in Figure 1 below, the starting point for IT service management (and the ITIL framework) is not technology; it is the objectives of the organisation.

Service Management : The Objective Tree



Figure 2.1 Service Management: The Objective Tree

Source: Foundation Certificate in IT Service Management with ITIL, The Art of Service

To meet organisational objectives, the organisation will have several business processes in place. Each of the business units involved in a business process may or may not need IT services to support their activities. Each of these IT services will operate on the IT infrastructure of the organisation that will have to properly managed to ensure correct combination of time, cost and quality requirements of each customer (OGC, 2003).

Business processes that depend on IT are only as reliable and sustainable as the underlying IT infrastructure. Consequently, IT dependency introduces considerable risk as well as potential strategic advantage (Remedy, 2004). The risks associated with the dependence on IT include:

- IT process and strategic intent is not aligned with the changing needs of the business
- The cost of supporting IT infrastructure exceeds the benefits achieved from the business process or solution
- IT processes have a significant impact on business processes when they fail. (Karten, 2001)

To manage the risk of IT dependence, organisations are evaluating IT activities from a business perspective and shifting from an IT technology focus to an IT service model. In many cases, IT organisations are structured around functional teams and typically; each team performs the same narrowly defined task for targeted groups of consumers. Each functional silo often measures performance and benefit from an isolated component level, and often fails to work effectively with other functional teams as in an integrated system (Remedy, 2004). This approach has two main problems:

- Functional silos tend to sub-optimize performance across the organisation, instead of optimising value as an integrated system. Teams may also measure performance using internally focused performance metrics.
- Functional silos tend to focus on what each group does rather than what is needed to support the specific business process. The focus needs to shift from “what IT does” to “what IT delivers” (Meta Group, 2000).

In order to help companies manage the growing dependence on IT, a framework called ITIL was developed in the UK in the early 1980's by the British government.

The following section reviews the core processes of the model.

2.5.2 ITIL Service Management Model

IT service management is concerned with delivering and supporting IT services that is appropriate to the business requirements of the organisation. ITIL provides a comprehensive, consistent and coherent set of best practices for the IT Services Management processes, promoting a quality approach to achieving business effectiveness and efficiency in the use of information systems. Processes within the ITIL framework should be implemented such that they underpin, but do not dictate, the business processes of an organisation (OGC, 2003).

Agreements (OLAs) are met and for ensuring that any adverse impact on service quality is kept to a minimum (OGC, 2003). The process involves assessing the impact of changes upon service quality both when they are suggested and when they have been implemented. Some of the most important targets set in the SLAs will relate to service availability and therefore incident resolution within agreed periods will become a key performance metric (Karten, 2001). SLM is the hinge for Service Support and Service Delivery. (OGC, 2003). It cannot function in isolation as it relies on the existence and effective and efficient working of other processes. An SLA without supporting processes will be ineffectual as there will be no basis for agreeing the content of the SLA (Leopoldi, 2002).

- *Financial Management for IT Services* – Financial management is responsible for accounting for the costs and return on It service investments and for aspects of recovering costs from the consumer of the service. Financial management requires good interfaces with Capacity Management, Configuration Management and SLM to identify the true costs of the service (OGC, 2003)
- *Capacity Management* – Capacity Management is responsible for ensuring adequate capacity is available at all times to meet the requirements of the business. It is directly related to the business or consumers service requirements and is not simply about the performance of the system's components, individually or collectively. Capacity Management is involved in incident resolution and problem identification for difficulties relating to capacity issues. The activity of capacity management raises Requests for Change (RFCs) to ensure that appropriate capacity is available (OGC, 2003).
- *IT Service Continuity Management* – Continuity management is concerned with managing an organisation's ability to continue to provide a pre-determined and agreed level of IT services to support minimum business or consumer requirements following an interruption to the business. Effective service continuity requires a balance of risk reduction measures such as resilient systems and recovery options. Infrastructure and business changes

need to be assessed for their potential impact on continuity plans and all changes should be subject to change management procedures (OGC, 2003)

- *Availability Management* – Availability management is concerned with the design, implementation, measurement and management of IT services to ensure the stated business or consumer requirements for availability are consistently met. This process requires an understanding of the reason why IT service failures occur and the time take to resume failed services. Incident management and problem management provide key inputs to ensure the appropriate corrective actions are being processed (OGC, 2003). Availability targets specified in the SLAs are monitored and reported on as part of the availability management process. Additionally, availability management supports the SLM process in providing measurements and reporting to support service reviews (Matlus and Brittain, 2002).

Figure 2.3 below depicts the Service Delivery process and its components as explained above in a graphical manner.

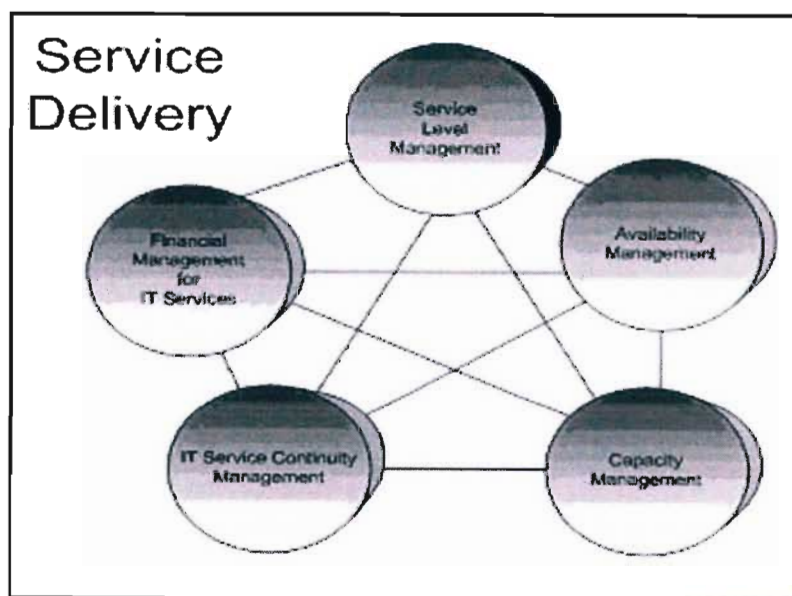


Figure 2.3 Service Delivery and its Component Processes

Source: Foundation Certificate in IT Service Management with ITIL, The Art of Service

2.5.4 Service Level Management (SLM) and the Service Level Agreement (SLA)

Section 2.5.3 introduced and positioned the Service Level Management process within the ITIL framework. This section of the study will look at the details of the process and how an SLA can be introduced to the organisation to assist in the process of managing service levels. As stated, the goal for SLM is to maintain and improve IT service quality through a constant cycle of agreeing, monitoring and reporting upon IT service achievements and instigating actions to eradicate poor service in line with business and/or cost justifications. Through these methods, a better relationship between IT and its consumers can be developed (OGC, 2003).

SLM can therefore best be described as process that must be planned, implemented, executed and controlled and can be broken down into four basic steps.

2.5.4.1 Establishment Function

Depending on the maturity of the service organisation, this step could require a big investment in time and effort to lay an adequate foundation for the implementation of a service management process. Adopting a formal project based methodology when undertaking this process is strongly recommended (Leopoldi, 2002). Initial planning will need to cover the following aspects:

- Establishing a project team and defining the objectives and the terms of reference for the team.
- Start an awareness campaign of the process that is underway with employees of the organisation as well as the consumers of the various services that will be affected by the process.
- Ensure that all budget implications of the process have been investigated and that top management have made the required resources available to the project.
- Developing a service catalogue (see definition and description below).

- Drafting a pilot Service Level Agreement (Miller as cited by Leopoldi, 2002: 3).

Identification of support tool, particularly for the monitoring of SLA metrics would also need to be installed (if not already present) and existing ones reviewed to determine their applicability to the new environment. The need to open effective dialogue channels with consumers and employees at an early stage in the process is a key step in the negotiation process when implementing an SLA (Trienekens and Van der Zwan, 1997).

The development of a Service Catalogue has been mentioned as one of the initial activities that need to be undertaken. A Service Catalogue can be defined as “A written statement of IT services, default levels and options” (OGC, 2003), and relates to all services currently being provided. The information contained in the catalogue is a valuable aid in ensuring that the SLA development process covers all services and consumers in a manner best suited to all parties needs (Leopoldi, 2002).

2.5.4.2 Implement SLAs

Karten (2001) states that a SLA is a formal negotiated agreement that helps to identify expectations, clarify responsibilities and facilitate communication between a service provider and its customers. Trienekens and Van der Zwan (1997) further state that the goal of the SLA has moved from being purely a financial contract to an instrument for the management of consumer’s expectations. Service Level Agreements can either be applied to the provision of internal services by one area within an organisation to another (Boyd and Proctor, 1995; Bucholtz, 1999) or to the delivery/receipt of services with and external organisation (Rozwell, 2002). When applied to an internal service provision, the SLA forms an agreement between the parties (Hiles, 1993; Boyd and Proctor, 1995; Karten, 1998) while its use with external organisations is often that of a contract (Cooperman, 1995) which is legally binding.

The process of drafting a SLA is not pre-determined as the relationship between the service consumer and provider will invariably be unique (Blackwell, 2002). A basic structure for any SLA will have some or all of the following components:

- Identify the parties to the agreement or contract.
- Describe in as much detail as is required the service(s) to be provided.
- Specify the volume and pattern of demand for the service(s).
- Define the timeliness requirements for the service(s).
- Specify the availability of the service(s) required.
- Define the reliability of the service(s) provided.
- Quantify the compensation for providing the service(s) if applicable.
- Describe the measurement procedures to use.
- Set a date for the re-negotiation of the agreement

As the term SLA implies, agreement needs to be reached between the consumer and provider of the service. Both parties negotiating the contract or agreement should be fully mandated by the person they represent, to perform these negotiations (OGC, 2003). The wording used in contract or agreement should also be at a level such that it promotes understanding when read and accurately portrays the outcome of the negotiations (Blackwell and Dixon, 2003).

2.5.4.3 Manage the Ongoing Process

ITIL emphasise that nothing should be included in the SLA, in respect of performance monitoring, unless it can be effectively monitored and measured according to an agreed method. Existing monitoring capabilities should be reviewed and upgraded as necessary and this review should ideally have occurred at the time of drafting the SLA or during the negotiation process. The creation of a Service Desk, if one does not already exist, is a valuable tool for monitoring consumer perceptions of service delivery. The Service Desk will also be used to monitor incident response and resolution times (Matlus and Brittain, 2002).

One of the primary reasons for gathering information through various monitoring system such as a Service Desk, is to meet the requirement of the SLA for reporting actual service delivery performance against the agreed standards/metrics. Data produced from the service monitoring systems must be comparable to the metrics and parameters defined in the SLA. Failure to do so will invariably result in service consumer and provider looking at raw data that requires further interpretation to meet the requirement of reporting on performance. The service consumer, through not interpreting the data correctly, could not agree that the service levels as agreed have been attained as the data does not match the metrics agreed upon in the SLA (OGC, 2003).

The process of reviewing actual performance against agreed levels should be reviewed on a regular basis to ensure the timely discovery of service delivery weaknesses and to ensure that the consumer is aware that they are receiving the required service consistently over time (Karten, 2002).

2.5.4.4 Periodic reviews

Service level management occurs in a dynamic environment. Regular review of the SLA and Service Catalogue is needed to address changes in consumer service requirements. A periodic review of the monitoring systems to ensure they meet all SLA requirements is good problem preventative maintenance. The relevance of performance metrics contained within the SLA should also form part of the regular review process (OGC, 2003).

The previous section has reviewed the Service Delivery process of the ITIL framework and how each of the components within the process are inter-related.

The following section will review the Service Support, Service Desk and Security Management processes of the ITIL framework and how each of the components of the individual process are inter-related.

2.5.5 Service Support

Service Support, as one of the four core processes of the ITIL model has five component items namely:

- *Incident Management* – This process is in place in order to get the end-user back to work following an interruption to normal service delivery in the shortest possible time. The process is system driven and the only concern is speed of response and the continuation of the business process. Incident Management uses information out of the Problem Management process (work around and know issues) and the Configuration Management process (linking incidents to Configuration Items). A large component of Incident Management is the administration and tracking of the incident itself (OGC, 2003).
- *Problem Management* – It is the intent of Problem Management to find known errors in the IT infrastructure. Activities in the process focus on finding what the known error is, identifying alternative solutions for the removal of the known error, raising a Request for Change (RFC) for the removal of the known error and checking after a change is performed to see that the known error is gone. The Problem Management process has an element of pro-active troubleshooting in the sense that the process aims to identify and facilitate the removal of errors before they manifest themselves as en-user complaints or queries (OGC, 2003).
- *Change Management* – The Change Management process deals with more than simple change control. The process begins with a Request for Change (RFC) being raised and keeps control from the assessment and acceptance of the RFC to the post implementation review of the RFC. The objective of the process is not to perform changes risk free but rather to perform the change with minimal risk or consciously taken risk. It is therefore important to involve the clients in the Change Management process (OGC, 2003).
- *Release Management* – The logical progression from Change Management is to Release Management where the process focus is on when the change is released into the appropriate environment. Release Management performs

version control including the movement of software, hardware and other infrastructure components from the development to test environment and finally into production. The management of impending release notifications is an important part of this process (OGC, 2003).

- *Configuration Management* – The Configuration Management process keeps track of all the Configuration Items (CIs) needed in order to deliver IT services. Information about CI's are held in a Configuration Management Data Base (CMDB) and will include information relating to hardware items, software items, SLAs, disaster recovery plans and policy statements. Configuration Management provides the service organisation with a comprehensive list of all resources available to manage IT Service Delivery in a consistent manner (OGC, 2003).

Figure 2.4 below depicts the Service Delivery process and its components as explained above in a graphical manner.

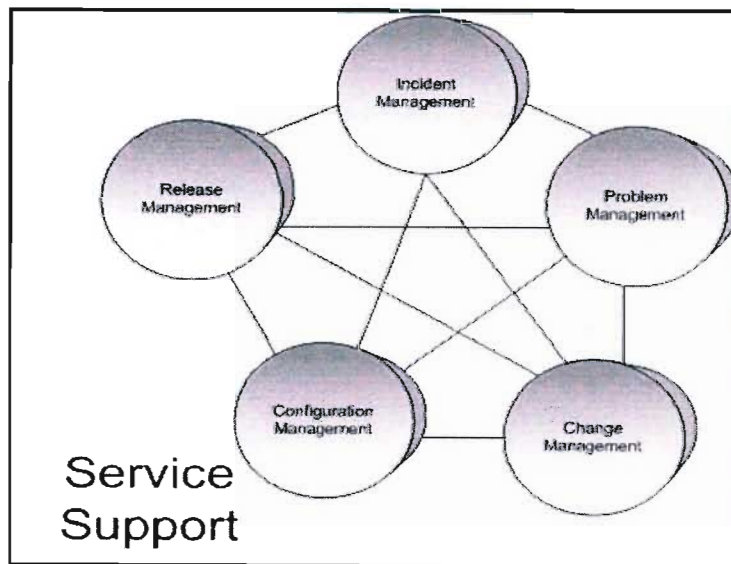


Figure 2.4 Service Support and its Component Processes

Source: Foundation Certificate in IT Service Management with ITIL, The Art of Service

2.5.6 Service Desk

Service consumers need IT services to improve the efficiency of their own business process. When they cannot use the IT service, they have trouble achieving their objectives. Consequently, all end-users of IT service need a single point of contact with the IT service organisation. The Service Desk should be that single point of contact for all service related issues. The type of Service Desk required depends on the requirements of the customer base and can be described in terms of skill and structure.

Service Desk Skill Level:

- Call Centre
- Unskilled Service Desk
- Skilled Service Desk
- Expert Service Desk

Service Desk Structure:

- Centralised Service Desk
- Distributed Service Desk
- Virtual Service Desk
- Split Function Service Desk

Various combinations of skill levels and structures can be used to design a Service Desk that meets the specific requirements of a particular IT service organisation.

2.5.7 Security Management

The Security Management process seeks to ensure the safety of information. Safety refers to the information contained within the systems not being vulnerable to a known risk whilst avoiding unknown risks where possible. The information being protected must have value that in turn depends on the information's confidentiality.

integrity and availability. Secondary criteria of value include privacy, anonymity and verifiability.

Security Management impacts all processes and if the customer deems it to have significant value, portions of the SLA should be dedicated to defining the expectations of performance and metrics to measure actual performance (OGC, 2003).

The preceding sections have reviewed the Service Support, Service Desk and Security Management processes of the ITIL framework and how each of the components of the individual process are inter-related.

The following section will review the British Standards Institute standard BS15000 and describe how it can be applied to the organisation.

2.6 BS15000 CERTIFICATION

2.6.1 Introduction

In July 2003 Gartner stated that ‘the release of the British Standard for IT Service Management (BS15000) marks the first step toward the delivery of IT services becoming much more consistent across organisational and national borders. BS15000 certification should be much more indicative of quality and performance in IT services management than ISO 9001:2000. This is because it will be much tougher to obtain certification and therefore would be more valued because of its direct relevance.’

BS15000 is not a competitor to ITIL, but is instead a vital and necessary formulation of the key elements of IT Service Management Best Practice. The appearance of the formal standard, first in 2000 and then revised in 2003, is an important step in helping an organisation demonstrate that they follow industry accepted best practices.

2.6.2 Defining BS15000

The core of BS15000 is some six pages of carefully chosen words that set out to define and delineate what activities an organisation must do in order to deliver and support IT services for both internal and external customers. Figure 2.1 below, gives an indication of how the various relevant Best Practice publications, from the British Standards Institute (BSI) and the Office for Government Commerce (ITIL), fit together to form an integrated whole (Deeks et al, 2002). For the purpose of this study, the foundation of Service Management, ITIL, has been reviewed above.

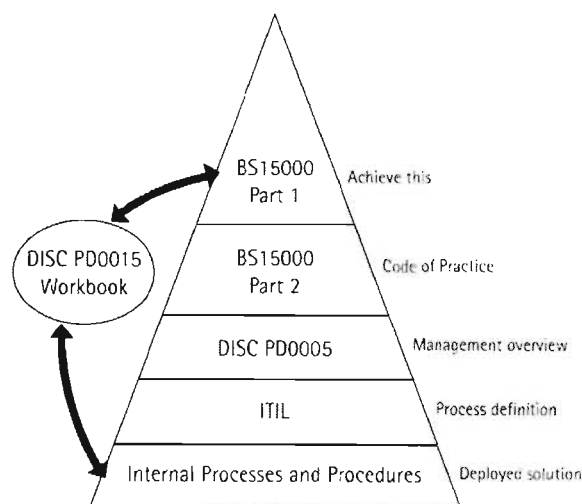


Figure 2.5 BS15000 Components

Source: Macfarlane & Taylor, Taking you Beyond ITIL. BS 15000 – The New Certification

As can be seen from the figure 2.5, BS15000 consists of two parts, namely:

- *Part 1 – The Formal Standard.* This sets out what an organisation is required to do for compliance and to achieve certification against that standard and covers compliance requirements for:
 - Management Systems
 - Service Planning
 - Process Relationships
 - Service Delivery
 - Control
 - Release

- *Part 2 – Code of Practice.* This expands upon the bare requirements, offering expansion and guidance to service providers who wish to achieve the standard. It follows the same basic structure as part 1 but uses less terminology, expanding where appropriate.

2.6.3 Demonstrating BS15000 Conformance

As organisations come to understand that supporting processes are vital to business success, they seek reassurance from suppliers of those services that the processes are capable of delivering the necessary level of business support. This applies irrespective of whether the supplier is internal or external to the business that depends on them. Demonstrable compliance to an accepted and respected standard has long been recognised as the answer to this conundrum. With respect to IT service processes, the reassurance that the processes are appropriate are demonstrable by conformance with the contents of BS15000 (McFarlane and Taylor, 2004).

Compliance with BS15000 needs to be determined by an external auditor who will issue a certificate if compliance is achieved. The preliminary work before reaching this stage will include:

- *Assessing Current Practices* – this may be achieved through a process of self-assessment by a person skilled in interviewing, data gathering and assessment or through professional consulting firms familiar with the process.
- *Comparing those practices with BS15000 process requirements* – knowledge of both current practices and BS15000 requirements will be required.
- *Documenting and Understanding the Differences* – introducing new and improved processes to an organisation is likely to be a significant task, requiring planning and resources. A formal project management structure should be adopted.
- *Closing the identified Gap* – the majority of organisations will have significant changes to make to many aspects of their IT Service Management processes. The process will take time and should be undertaken diligently

- *Being Audited for Compliance* – the formal audit should be conducted by experienced auditors using sampling techniques to ascertain that appropriate process are in place across the wide range of compliances required.
- *Maintaining the Compliance* – keeping BS15000 certification will keep the service processes aligned to best practice principals thereby adhering to what the standard demands and ultimately to what customers’ needs are (McFarlane and Taylor, 2004).

2.7 CONCLUSION

Chapter 2 has reviewed the relevant literature on service quality, consumer satisfaction and consumer loyalty. Two critical aspects in defining customer satisfaction, namely customer expectations and customer perception have been reviewed. Some authors define customer satisfaction as the difference between customer perceptions and expectations, whilst others define satisfaction primarily in terms of the customer’s perception of service. The current Autolab Csi study follows the latter view. Other aspects of customer satisfaction, which were in the context of managing perceptions and expectations, were also briefly reviewed. Customer satisfaction improvement strategies and its being part of the internal business process, was discussed and the Balanced Scorecard management tool was briefly introduced. As stated previously, high customer satisfaction results in high customer loyalty. This link was reviewed in section 2.4 of this chapter.

An IT service process model, ITIL, that organisations engaged in IT service delivery may adopt to meet the increased service quality demands by consumers, was presented and discussed. The component process Service Level Management, which forms part of Service Delivery, and the service management tool, the Service Level Agreement, was reviewed in greater detail. The final section in the chapter reviewed the emergence of a British Standards Institute standard that builds on and formalises the processes described in the ITIL framework.

3 CHAPTER 3 - RESEARCH METHODOLOGY

3.1 INTRODUCTION

The ability to allocate scarce resources is a business strategy practiced by all firms around the world but has particular relevance to non-profit organisations such as Autolab Csi. The research data gathered will provide Autolab Csi management with the information necessary to develop and implement enhancement strategies for resource allocation as a means to improving customer satisfaction levels. It is therefore important that the data generated from the research is reliable and accurate.

The research objectives formulated for the current study were clear, concise and relevant to the business needs and strategic planning for Autolab Csi and are presented below together with the hypotheses.

- **Overall objective** - To identify the degree of success in implementing best practices, as described in the ITIL framework for IT Service Management, with particular reference to the Service Delivery process.
- **Sub-objective 1** - To identify which of the twelve ITIL processes Autolab Csi has successfully implemented.
Hypothesis 1 - Autolab Csi has made progress in implementing all twelve ITIL process.
- **Sub-objective 2** - To identify which processes require further development to ensure compliance with best practice guidelines.
Hypothesis 2: Not all best practice processes have been completely implemented.
- **Sub-objective 3** - To determine the benefit that has accrued to Autolab Csi as a result of the adoption of the best practice framework for Service Delivery.

Hypothesis 3 - Benefits have accrued to Autolab Csi as a result of the adoption of the ITIL best practice framework.

Clearly defined objectives lead to a cleaner, less ambiguous research design. A good initial test for the clarity of objectives was to identify the research hypotheses necessary to achieve the objectives, as ambiguous objectives invariably lead to difficulty in developing hypotheses (Naumann and Giel, 1995).

This chapter focuses on aspects that influenced research design for the current study and provides, in the final section, the case study information against which the quantitative analysis is performed. The chapter begins with the study's research design and addresses aspects such as the selection of attributes, target population, data collection, data analysis, reliability and validity.

3.2 RESEARCH DESIGN

The research undertaken was classified as conclusive research since the information needed was clearly defined and the research process was formal and structured (Cooper and Schindler, 2001). It has also provided information for the evaluation of alternative courses of actions. The findings are conclusive and will be used as input in future decision making at Autolab Csi. The research design applied was also descriptive in that it attempted to describe market characteristics and internal operational procedures. The design detail is expanded on in the next section of this chapter.

3.2.1 Attribute Selection

Naumann and Giel (1995) state that the accurate identification of attributes is important as it is the foundation upon which all subsequent portions of the measurement programme must be built.

Twelve attributes were identified for the questionnaire used to determine the level of process implementation of the ITIL framework at Autolab Csi. Each attribute related directly to each of the services processes identified in the ITIL framework. Pilot testing of these attributes was not conducted, as there are a fixed number of processes and each process had to be reviewed for this study. Each attribute of the research design was considered to be of equal importance.

The second questionnaire focused on the five processes associated with Service delivery, with each process being the attribute to be investigated. Each of the five Service Delivery attributes had nine further quality attributes added. The quality attributes were considered to be common to all processes of Service Delivery. Pilot testing of these additional attributes was not conducted, as it was assumed they were an accurate representation of important process implementation milestones. Mandatory quality attributes carried a heavier weighting in the determination of whether current process practices met the minimum requirements.

3.2.2 Target Population

The idea of sampling is that by selecting some of the elements in a population, conclusions about the entire population may be drawn. A census, which is a count of all the elements in a population, is feasible when the population is small and necessary when the elements are quite different (Cooper and Schindler, 2001).

The focus of this study has been an internal review of the degree of adoption of the ITIL best practice framework and has not addressed the perceptions of performance through the eyes of Autolab Csi' over one hundred and fifty customers. SASA Information Services (IS) Division has an employee count of twenty-four and the SASA Executive team consists of twelve executives. A census, totalling eight, was taken of four members of the Executive team and four from IS, two of whom were managers at Autolab Csi. As the population was relatively small, this conferred a high

accuracy and sampling precision on the study. The population consisted of thirty-six all based in the Mount Edgecombe region of Durban.

3.2.3 Data Collection

Research designs can be classified by the approach used to gather primary data (Cooper and Schindler, 2001). There are two approaches: observation and communication. The method selected for the current study was the communication approach, specifically a self-administered questionnaire that involved questioning or surveying people and recording their responses for analysis.

3.2.3.1 E-Mail Survey

The e-mail survey, specifically the self-administered questionnaire (see Appendix B and C), was chosen as the method of survey for this study. The advantage of the e-mail survey was its low cost per targeted respondent. The questionnaires were distributed efficiently to a relatively small number of respondents. A disadvantage of the e-mail survey is that response rates tend to be low. However, the approach taken by the Researcher to overcome this was to send reminders to respondents after one and two weeks.

With the questionnaires distributed numbering eight, the service attributes covered numbering twelve, and with one geographical location being targeted in the survey, the mail survey approach chosen was the most cost effective when compared to the alternatives of telephonic and personal interviews. The staffing requirements for an e-mail survey are minimal and the author completed the entire programme, including administration of the survey, data analysis and presentation of results.

Questionnaires were distributed and received during May 2004. Reminders were sent to all participants one week, and again, two weeks after the original mailing, thanking

respondents for returns and reminding others to complete and e-mail the questionnaire.

A covering letter accompanied the questionnaire and covered aspects such as the rationale for the study, the initial appeal for assistance, the benefits that accrued to respondents, the request for specific action and finally to express gratitude to the respondent for cooperation. The letter was from the General Manager of the SASA Information Services Division (the author of this study) so that the importance of the research could be reinforced.

The above initiatives, aimed at achieving a high response rate, were successful as reflected in the final response rate of 100%. This very high response rate can mainly be attributed to the low total number of respondents.

3.2.3.2 Scales

There are two broad types of scales used in customer surveys: single and multi-item scales (Danaher and Haddrell, 1996). Simple, single-item scales, generally having two to nine points are used to reflect 'very satisfied' to 'very dissatisfied' responses, with the main advantage being that they were simple to use. Danaher and Haddrell (1996) identified two flaws with single-item scales in that they cannot provide information on components and cannot assess various dimensions separately. It was also difficult to assess reliability with a single-item measure.

The current study used a single-item scale for the BS15000 compliance questionnaire, having two points ('Yes' or 'No'), as it was important that the survey be as simple as possible. The questionnaire is presented in Appendix C.

A Likert scale was used in the questionnaire as presented in Appendix B and consisted of a statement that expressed either a favourable or unfavourable attitude toward the object of interest. The respondent was asked to agree or disagree with

each statement and each response was given a numerical score to reflect its degree of attitudinal favourableness. The scores were totalled to measure the respondent's attitude. Each attribute measured in the survey was scored on a five point rating scale, indicating the extent of the respondents' agreement with the statements presented. Based on a one to five scale, the scores obtained on each attribute can be interpreted as follows:

- *Five: Strongly Agree (Yes)* – the perception of this attribute was extremely positive, respondents were highly satisfied with this aspect.
- *Four: Agree* – the perception of this attribute was good; respondents were satisfied with this aspect.
- *Three: Disagree* – the perception of this attribute was fair; respondents were barely satisfied with this aspect.
- *Two: Strongly Disagree (No)* – the perception of this attribute was that it was rarely satisfactory and could be described as poor.
- *One: Unsure* – the respondent could not express an opinion or perception about this attribute due to a lack of understanding of the attribute.

3.2.4 Data Analysis

The results from the ITIL assessment (Appendix B) were presented as averages utilising all questions for each process area. No weightings were applied to the results. The results from the BS15000 compliance for Service Delivery were provided as either 'Pass' or 'Fail'. No further statistical methods were applied to the data.

3.2.5 Reliability

The reliability of a measurement programme is the extent to which research results would be stable or consistent if the same techniques were used repeatedly. Sampling, questionnaire design, question wording, scaling and measurement all present potential reliability problems (Bless and Higson-Smith, 1995). The above considerations were

not considered influential in the research design process as a comparison study, with previously generated data, was not conducted.

The techniques used to measure reliability such as test-retest reliability, equivalent forms reliability and split-half reliability were deemed unsuitable for this study. A more detailed method for estimating the internal consistency of an instrument is the item analysis described by Bless and Higson-Smith (1995). This technique determines how well the responses to each item correspond with the responses to the other items and to the test as a whole. Item analysis was not used to estimate the internal consistency of the Autolab Csi survey instruments.

3.2.6 Validity

Validity is concerned with whether a measurement programme, or a particular item, really measured what it was supposed to measure. The four most important types of validity are content validity, criterion-related validity, construct validity and face validity.

3.2.6.1 Content Validity

For the current study, the Researcher agreed the attributes to be measured based on the existing ITIL framework. The attributes were also areas where Autolab Csi was continuously striving towards maximising their performance and resource allocation. The content validity of the questionnaire was further achieved by the fact that an expert in the IT Service Management field, The Art of Science, developed the original questionnaire upon which the Autolab Csi survey is based.

3.2.6.2 Construct Validity

The questionnaire was designed as a low cost means to highlight progress in the adoption of ITIL best practices. The most important variables that determine the level of adoption for each process area were identified through the various questions for each attribute. A number of questions were used to elicit compliance levels on each attribute and the results of these were combined to produce one rating on each attribute. Respondents were not required to respond to statements that were expressed both positively and negatively. The attributes were identified according to logical deduction due to the nature of the ITIL framework.

3.2.6.3 Face Validation

The questionnaire was developed with the needs of the subjects in mind. The attributes and the language used in the instrument were uncomplicated and the terminology used was regularly referred to in SASA communications. It was decided by the Researcher that evaluating the questionnaire in a pilot test would not further enhance face validation. .

Criterion-related validation, especially predictive validation, was not deemed to be applicable in this study.

The next section will provide background information on the South African sugar industry's economic environment and market structure. The role of SASA, and its the marketing approach in relation to its environment is also described. Finally, the Autolab Csi business, the market it operates in and the LIMS system, which is the core service offering of Autolab Csi, is discussed.

The information contained in the following sections is provided to add understanding of the particular market conditions under which Autolab Csi are operating and the impact these market conditions have on operational processes within the organisation.

It is within the described market and operational context that the results of the surveys need to be interpreted and the motivation for adoption of the ITIL framework understood.

3.3 OVERVIEW OF THE SOUTH AFRICAN SUGAR INDUSTRY

3.3.1 Introduction

The South African sugar industry is one of the world's leading cost competitive producers of high quality sugar. It is a diverse industry combining the agricultural activities of sugarcane cultivation with the industrial factory production of raw and refined sugar, syrups, specialised sugars and a range of by-products. Based on revenue generated through sugar sales, the South African sugar industry is responsible for income totalling over R6 billion per annum, of which over R3 billion is distributed between millers and growers. Based on actual sales and selling prices in 2002, it is estimated that the South African sugar industry contributed R2.38 billion to the country's foreign exchange earnings (South African Sugar Association, 2002).

The local sugar industry makes an important contribution to direct employment through its cane production and processing activities. The industry provides indirect employment for numerous support industries in the three provinces where sugarcane is grown, namely KwaZulu-Natal, Mpumalanga and the Eastern Cape. Employment within the sugar industry provides approximately 85 000 jobs whilst direct and indirect employment is estimated at 350 000 jobs. There are approximately 1 million people dependent on the sugar industry nationally. In addition, there are 49 000 registered cane growers with over 95% being Black owned small to medium scale operations (South African Sugar Association, 2003). It can therefore be seen that the sugar industry makes a significant contribution to employment rates on a national level.

The South African sugar industry functions as a proceeds-sharing partnership between growers and millers. Given the nature of the industry, government intervention is

necessary to regulate the relationship between millers and growers. Consequently Government promulgated the Sugar Act 9 of 1978. Section 4(1)(c) (South Africa. Sugar Act 9 of 1978) of the Act contains supporting legislation in the form of the Sugar Industry Agreement (South Africa 2000:21139).

3.3.2 Market Structure

Armstrong and Kotler (2000) define a market as consisting of all the actual and potential buyers and sellers of a particular product, and define a market structure as the competitive environment in which the buyers and sellers of the product operate. The structure of the market strongly affects the process by which price and output are determined in the real world. Although markets can be very different, economically they are classified under four broad market structure types. At one end of the continuum there is the situation where many firms compete within the same market. This is known as perfect competition. At the other end, there is only one firm that faces no competition at all. This is known as a monopoly. Monopolistic competition refers to the case where there are many sellers of a differentiated product whilst an oligopoly is the case where there are few sellers of a homogenous or differentiated product (Parkin and King, 1995). The South African sugar industry operates in an oligopolistic market structure for retail sales of refined sugar and in an oligopolistic market structure for the relationship between millers and growers in the purchase and sale of sugar cane.

3.3.2.1 The South African Sugar Industry and its Market Structure

The South African sugar industry is one of the world's leading cost-competitive producers of high quality raw and refined sugar (a homogenous product). The industry is a proceeds-sharing partnership between millers and growers and has been established since 1935 (South African Sugar Association, 2003). The milling sector is concentrated around fourteen mills. Seven mills are owned and operated by Illovo Sugar Limited, four by Tongaat-Hulett Sugar Limited, two by Transvaal Sugar Limited and one co-operative mill owned by growers located in the Dalton area.

3.3.2.2 Oligopoly: Meaning and Sources

Oligopoly is the case where there are few sellers of a homogenous product. Therefore, the retail market of the sugar industry can be described as a pure oligopoly as the product (refined sugar) is homogenous. As there are only a few firms selling a homogenous product in an oligopolistic market, the action of each firm affects the other firms in the industry and vice versa.

The sources of oligopoly are the following:

- Huge capital investments are required to enter an oligopolistic industry and this acts as a natural barrier to entry.
- Economies of scale may operate over a sufficiently large range of outputs to leave few firms supplying the entire market.
- Few firms may control the entire supply of a raw material required in the production of the product.
- Few firms may own a patent for the exclusive right to produce a commodity or to use a particular production process.
- Established firms may have a loyal following of customers based on product quality and service that new firms would find difficult to match (Salvatore, 2001).

Two decades ago there were over twenty sugar mills and currently there are only fourteen mills supplying the entire retail and export sugar market (South African Sugar Association, 2004). It is estimated that it would cost over R1 billion to erect a large new sugar mill (Simmonds, 2001). The fourteen sugar mills have approximately 49 000 sugar cane growers contracted to supply their harvest of sugar cane (raw material) to the sugar mills closest to them. The market relationship between the 49 000 sugar cane growers and the four sugar milling companies is described as an oligopolistic relationship where a small number of large buyers (milling companies) control a large proportion of the supply to the sugar cane market (American Marketing Association, 2003). This skewed relationship is partly due to the

geography and location of sugar mills which restricts the growers choice in terms of which mills they can cost effectively deliver their sugar cane to (Rossler, 2004)

The relationship between millers and growers, and the limited number of sugar milling companies operating in the industry, can be classified as sources for the oligopoly existing within the sugar industry. The market practices also represent barriers to entry for other firms looking to enter the market in the long term.

Limit pricing, whereby existing firms charge a price low enough to discourage entry into the industry (Salvatore, 2001), may provide a further barrier to entry. Limit Pricing does not apply to the South African sugar industry, as the price of sugar on the local market is determined according to a Government agreed, floating dollar-based reference price currently at US\$ 295 per ton of sugar (South African Sugar Association, 2004). The reference price has been legislated to protect the local sugar industry from the highly subsidised sugar producers of the northern hemisphere (South Africa Sugar Association, 2003).

South Africa is a low cost sugar producer and does not receive government subsidies, but the world sugar market is distorted because of the high subsidies protecting the European Union and United States sugar markets (South African Sugar Association, 2004). The current world price of sugar, which is determined in a dump market because of the overproduction by the inefficient, subsidised producers of the European Union and United States, is approximately US\$ 185 per ton (South African Sugar Association, 2004). It can be concluded from the above-mentioned data that the local sugar industry does not discourage entry due to limit pricing. Rather entry is restricted due to Government imposed tariffs, which make imported sugar more expensive than locally produced sugar.

3.3.2.3 Oligopoly and Market Concentration

The degree to which an industry is dominated by a few large firms is measured by concentration ratios (Salvatore, 2001). These give the percentage of total industry sales of the four, eight or twelve largest firms in the industry. The South African sugar industry is oligopolistic with the four-firm concentration ratio being 100% (South African Sugar Association, 2003).

The sugar industry requires various specialist services that are best served by having one organisation provide this range of services. The South African Sugar Association was therefore established by millers and growers to provide a range of specialist services to the sugar industry. The following section discusses the South African Sugar Association and introduces Autolab Csi, which is the division researched in this study.

3.3.3 The South African Sugar Association

The South African Sugar Association administers the partnership on behalf of its two members, the South African Cane Growers Association (SACGA) and the South African Sugar Millers Association Limited (SASMAL) (South African Sugar Association, 2003). SASA's main function is to provide a range of specialist services that enhance the profitability, global competitiveness and sustainability of the South African sugar industry (South African Sugar Association, 2004). Notable for the diversity of the services it provides this major industry, SASA divisions contribute at various points across the industry value chain (South African Sugar Association, 2003). These centralised, cost effective services are divided into those that provide support to the industry core functions of cane growing and milling (development finance, agricultural research, cane testing, industrial training and Autolab Csi IT services), and those that provide support to the industry partnership (industry partnership administration, export sales and shipping of raw sugar, generic

advertising, external liaison and communication) (South African Sugar Association, 2003).

3.3.3.1 Marketing Philosophy

A market can be described as the set of actual and potential buyers of a product (Kotler, 2000). These buyers share a particular need or want that can be satisfied through exchanges and relationships. Marketing activities should be carried out under a well-thought out philosophy of efficient, effective and socially responsible marketing (Kotler, 2000). There are five marketing approaches that SASA could consider:

- *Production Concept* - emphasises producing and distributing products in sufficient quantities to meet enormous demand (Van der Walt et al., 1996).
- *Product Concept* - the focus is on making superior products and improving them over time (Kotler, 2000).
- *Selling Concept* - mass production resulted in supply meeting or exceeding demand, and companies needed to find new customers and persuade resistant customers to buy (Van der Walt et al., 1996).
- *Marketing Concept* - the marketing manager must integrate and direct the company resources towards satisfying the customers needs (Armstrong and Kotler, 2000).
- *Societal Marketing Concept* - holds that the organisation should determine the needs, wants and interests of target markets. It should then deliver superior value to customers in a way that maintains or improves the consumer's and the society's well being (Kotler, 2000).

3.3.3.2 The Marketing Philosophy of SASA

The marketing philosophy of SASA, when considering the above alternatives can be categorised as the selling concept. The local sugar industry produces in excess of the local market demand and therefore has to find new customers in the export market

(South African Sugar Association, 2003). Since the local sugar retail industry operates as an oligopoly (cartel arrangement) there is little local competition and few mechanisms exist to define and satisfy consumer wants and needs. Communication with consumers is unilateral. It is apparent that the key to success in the rapidly changing marketing environment is to stay abreast of major environmental changes and for SASA to modify strategies and programmes (Rossler, 2004).

The microenvironment consists of the forces close to the company that affect its ability to serve its customers: the company, suppliers, marketing channel firms, customer markets, competitors and public (Grant, 1998). These combine to form the company value delivery system. Prior to implementing an amended marketing strategy, SASA must analyse the marketing environment and undertake corporate and strategic planning.

3.3.3.3 SASA and its Marketing Environment

The decline of marketing in the previous decade was attributed to its extreme functional autonomy (Doyle, 1995). Marketing managers must work closely with other company departments such as finance, research and development, purchasing, manufacturing and accounting. Marketing management assists production management on design, qualitative and quantitative aspects of the product as well as the packaging. The price, distribution strategy, promotion strategy and method of communication with consumers are also determined by marketing management (Kotler, 2000). According to McKenna (1991), non-marketing specialists must focus on being market driven. This integrated marketing approach however, often fails due to inadequate training of all employees involved in the process (Kotler, 2000).

The concept of integrated marketing is especially challenging for SASA, as there are a diverse range of specialist divisions involved at all levels, from growing to international export, of the industry. According to Milner-Smyth (2004), the sugar industry has recently implemented a strong customer focus following the introduction

of comprehensive training programmes and greater exposure to customer requirements for all employees. These included visits to customer premises, customer open days and customer satisfaction surveys. In addition, SASA has also appointed an External Affairs Director to interact at a high level with customers and other industry stakeholders, and thus pass on the information gathered to all divisions within SASA. Also important in the creation of a marketing culture, is the implementation of customer surveys by SASA.

The appropriate marketing philosophy for SASA to adopt would be a societal marketing approach. The societal marketing concept advocates that SASA will need to build social and ethical considerations into their marketing practices and become customer-oriented and market driven in all that they do and to take steps to eliminate adverse consumer sentiment. According to Trikam (2004) SASA's appointment of an External Affairs Director is an indication of its recognition to change its marketing philosophy and to liaise with all relevant stakeholders.

Whilst the appointment ensures local customer satisfaction, there exist export opportunities that could be realised. Globalisation requires rapid communication and SASA has put measures in place to take advantage of the opportunities that arise. The less restrictive role of government has led to difficulties in predicting change in the market, but SASA has realised that close interaction with all stakeholders has to benefit the environmental scanning process (Trikam, 2004).

By recognising and acting on the marketing environmental factors that have an impact on SASA, the industry will be well positioned to prosper both locally and internationally.

3.3.4 Autolab Csi

3.3.4.1 Introduction

Autolab Csi is one of the specialist service providers within SASA and has the core function of providing support and maintenance for the sugar industry Laboratory Information Management System (LIMS) as well as repairs and maintenance to laboratory instruments. Autolab Csi currently maintains systems at all fourteen sugar mills in South Africa and eight mills in five African countries (South African Sugar Association, 2004).

Autolab Csi consists of seven operational and two middle management employees based in Mount Edgecombe, Durban and is one of the departments of the Information Services division. A General Manager heads this division of SASA.

3.3.4.2 LIMS System

LIMS is a fully functional laboratory system and comes bundled with VGL, its proprietary programming language. In order to make the system fully functional for the sugar industry, a range of additional application programs have been developed by Autolab Csi. The system allows for the management of all major functions at a sugar mill, from the submission of estimates through despatching of sugar and related products. For ease of understanding, the functionality of the system can be segregated and described in various modules. It is important to note that the SASA LIMS system is a fully integrated system and that the modules do not operate as individual units. Rather, they combine and work together to form a fully functional feature rich system (Autolab Csi, 2004).

3.3.4.2.1 Mill Group Board

This module allows the management of Growers, their farms and fields. In addition the monthly or quarterly estimates and calculation of allocations is also managed within this module. This data is a pre-requisite for the Cane Testing module even if the intention is not to use the functionality contained within this module (Autolab Csi, 2004).

3.3.4.2.2 Cane Supply

Two variants of the Cane Supply module exist. The basic module allows for the management of cane deliveries and allows the deliveries to be compared to daily or weekly delivery allocations. The second variant allows users to set up and manage a vehicle control system. In addition to this functionality, the Cane Supply module allows for the management of weighbridge operations. Any number of weighbridges can be accommodated within SASA LIMS (Autolab Csi, 2004).

3.3.4.2.3 Cane Testing

The Cane Testing system is very flexible and was originally designed for the South African method of cane sampling and analysis but can now easily accommodate most cane testing systems, including grab and core sampling, first expressed juice testing and press analysis. The system comprises a weighbridge program and a laboratory program for capturing instrument readings and calculating results. Depending on the method of cane testing, a choice of mill yard programs and additional laboratory programs are available (Autolab Csi, 2004).

3.3.4.2.4 Mill Laboratory

The factory Laboratory System can conveniently be discussed in five sections, namely:

- *Analysis of factory samples* - For all the factory products, the user defines each product required and which analyses are to be done on each product and for each analysis the parameters required to validate and control each step of the analysis
- *Recording of mill downtime* - For recording mill downtimes, plant and equipment codes indicate which item of equipment broke down and a stoppage code indicates the reason for a breakdown. The stoppage codes may be linked to stoppage types to categorize them into stoppage groups
- *Calculating factory stock* - Factory stock may be calculated on a daily or weekly basis. Each vessel (clarifier, tank, crystalliser, sugar bin, etc) is defined by the user in terms of a variety of methods of measurement, whether temperature compensation is to be applied, a conversion factor (e.g. to convert cubic feet to cubic metres), which product it contains and over what period of days the analytical results are to be averaged in calculating the stock.
- *Factory meter system* - Where automatic metering devices are utilised in the factory i.e. for massing, volumetric flow, temperature, pH etc, these may be connected via a dedicated PC into the system.
- *Reporting of laboratory information* - including calculating of recoveries, efficiencies, etc (Autolab Csi, 2004).

3.3.4.3 Autolab Csi Market Description

The customer profile for the sugar industry laboratory services constitutes the 49 000 individual sugar cane growers and the four sugar milling companies within the South African sugar industry. The millers and growers operate a proceeds-sharing partnership and are grouped into fourteen individual MGBs across the South African sugar belt. The size of the sugar crop for the 2002 season was 23 million tons of sugar cane that produced 2.75 million tons of sugar (South African Sugar Association,

2003). The cost of the LIMS support to the industry amounted to R2.6 million. This cost was recovered via an annual support fees paid by all users of the LIMS system.

The sugar industry market structure is described as being so stable that it is accepted that it would continue to exist without any changes (Ardington, 2001). However, recent reviews of the Sugar Act 9 of 1978 by the Department of Trade and Industry have placed pressure on the industry to increase competitiveness within the industry. Indeed, the deregulation in 1994, which led to Autolab Csi having to self-fund its operations, was intended to increase competition within the IT services environment (Trikam, 2004).

A change in an established market structure can offer exceptional opportunities and these opportunities are often more obvious to outsiders (Jones and Sasser, 1995). Until a few years ago, Autolab Csi was operating in what was effectively a monopolistic environment where customers had no option but to use the services of Autolab Csi and can therefore be regarded as hostage customers (Trikam, 2004). As described by Jones and Sasser (1995), when the source of a monopoly's hold on customers suddenly disappears, either through deregulation or the emergence of an alternative technology, or the arrival of new competitors, the market can become highly competitive in a short period of time.

The Autolab Csi is now operating in a deregulated environment and has therefore to develop a successful strategy to manage customer satisfaction. If competitors make use of innovation to exploit opportunities resulting from the change, they can very quickly play a decisive role in a large industry without taking a drastic risk. Autolab Csi does have a competitive advantage due to its long association with the industry and its detailed knowledge of the industry's systems intellectual property. However, Autolab Csi still needs to ensure that its customers are completely satisfied and that Autolab Csi is not caught unawares by external influences.

3.4 CONCLUSION

This chapter has focused on aspects that influenced research design for the current study. The chapter began with the study's research design and addressed aspects such as the selection of attributes, target population, data collection, data analysis, reliability and validity. In the final section, the case study information against which the quantitative analysis is performed was presented.

Having established confidence in the survey instrument and the overall research methodology used in the study, the following chapter presents the results and findings of the analysis of the Service Management processes currently in operation at Autolab Csi and are based upon the results of two self-administered questionnaires. The first questionnaire analyses the rate of ITIL process adoption whilst the second determines compliance of the Autolab Csi Service Delivery processes with the BS15000 standard.

4 CHAPTER 4 – RESULTS AND FINDINGS

4.1 INTRODUCTION

The overall objective of the research undertaken in this study was to identify the magnitude of adoption of the ITIL framework within Autolab Csi, focusing on the Service Delivery process, and to determine from that analysis, possible BS1500 compliance, identification of problem areas in process adoption and benefits to Autolab Csi for adopting ITIL best practice process.

The current Service Level Management (SLM) practices of Autolab Csi are detailed in the first section of this chapter. The information presented is then assessed using the ITIL Assessment Questionnaire (Appendix B) as an indication of the rate of ITIL process adoption within Autolab Csi. This is followed by a brief review of the readiness of Autolab Csi for BS15000 certification. The chapter concludes with the presentation of benefits and challenges Autolab Csi has experienced in the Service Management implementation process.

4.2 CURRENT SERVICE MANAGEMENT PROCESSES AT AUTOLAB Csi

4.2.1 Introduction

The ITIL service management framework was explained in section 3.5 of Chapter 3 of this study. This section will look at each of the processes that have been identified and determine how Autolab Csi has addressed the requirements for each. The process of Service Delivery, in particular Service Level Management will be discussed in greater detail, as this process area has been the primary focus for Autolab Csi management.

4.2.2 Service Delivery

The primary focus for Autolab Csi has been the development and implementation of Service Level Management. The process followed by Autolab Csi in drafting a SLA can be briefly described as follows:

- The process began by categorising existing service consumers into three broad groups and the service requirement for each group were identified and listed in a service catalogue.
- Through a process of negotiation with each of the three identified groups, the terms and conditions of the SLA were agreed. Appendix D shows the generic SLA used by Autolab Csi when negotiating with its various consumer groups. The negotiation process allowed users to have a greater involvement in the determination and setting of acceptable service standards.
- Various performance metrics, concentrating on incident response and resolution times, were agreed and included in the SLA. The metrics can be considered to be simplistic in nature as it was agreed that they should be easily understood and that the implementation costs for the service provider be kept to a minimum.
- All contracts are valid for a period of twelve months and require re-negotiation before the end of the period. The start of the new contract period will be the only time that compensation levels for service consumption can be revised. Re-negotiation will also entail a review of the service catalogue for each group giving the consumer the ability to change service requirements, including incident management items, which could affect the total cost of service delivery.

Financial Management has not been given much attention as this service is contracted to the centralised SASA Finance Division that offers an excellent financial accounting recording and reporting service. One addition to the standard accounting package has been the implementation of a purchasing and stock control system to assist Autolab Csi with purchasing procedures and stock valuations for re-sale items.

Capacity Management was briefly reviewed as Autolab Csi assumed that due to the age of equipment, infrastructure and software, the short-term (three years) needs for adequate service delivery could comfortably be met. All capacity requirements will however be reviewed when the SLA is re-negotiated or if a significant Request for Change (RFC) is received, the likelihood of which is considered remote.

All Autolab Csi customers work in a seven-day week, twenty-four hours a day, manufacturing environment where service disruptions are very costly. Consequently, significant investigation and planning has been carried out to determine what steps can be taken to reduce the impact of service disruptions. A complex model has been agreed that provides the best cost/benefit solution for all parties concerned. The solution is not perfect, as compromises have been made where the cost of providing service continuity outweighs the benefit. In these circumstances, effective manual procedures have been developed that allow for the updating of information when the service is again available. Continuity Management has lead Autolab Csi to enter into SLAs with some of their service providers to ensure that the agreed level of service can be maintained for Autolab Csi's customers. The agreements with third party suppliers have the same performance metrics as those included in the SLA between Autolab Csi and their customers.

The availability of Autolab Csi services are simplistically recorded as either being available or unavailable. These statistics are recorded in the system and reported back to Autolab Csi and the management of the customer on a daily basis. No specific availability targets have been included in the SLA as the Service Continuity aspect has been extensively developed and agreement exists that focus in this area will ensure maximum availability.

4.2.3 Service Support

All incidents are reported to a centralised Service Desk (See 4.2.4). Once recorded, the incident report is forwarded on to the support department where a process of

incident prioritisation is performed according to the metrics agreed in the SLA. Autolab Csi management review incident records daily in order to monitor incoming requests, and their priorities, and what progress has been on all outstanding items. A weekly report is sent to all service customers showing what incidents have been resolved in the prior week and which incidents are still outstanding. Autolab Csi have implemented various quality checks in the process of incident resolution to ensure customers are kept updated on progress and to validate the correct resolution of the reported incident.

Problem Management processes involve a degree of pro-active trouble-shooting. This sub-process of Service Support is not being closely followed by Autolab Csi due to resource constraints and that the systems operate in fourteen different geographical regions that are a considerable distance (up to 1 200 Km) from Autolab Csi's offices.

The Change Management process deals with more than simple change control. The process begins with a Request for Change (RFC) being raised and keeps control from the assessment and acceptance of the RFC to the post implementation review of the RFC. The objective of the process is not to perform changes risk free but rather to perform the change with minimal risk or consciously taken risk. Autolab Csi does not have a detailed formal process in place to manage Change Management.

The logical progression from Change Management is to Release Management where the process focus is on when the change is released into the appropriate environment. Release Management performs version control including the movement of software, hardware and other infrastructure components from the development to test environment and finally into production. The management of impending release notifications is an important part of this process. Autolab Csi does not have a detailed formal process in place to manage Release Management.

Configuration management is the process that tracks all configuration items needed to deliver IT services. All other processes are dependant on this process. Autolab Csi developed a detailed configuration management database, as part of the initial work in

adopting the SLM process, in order to obtain a better understanding of the relationship between configuration items. As a result of weak Change and Release management process implementation, the information gathered is outdated and cannot be relied upon to list in-use configuration items or their inter-relationships. Failure of this process has weakened the effectiveness of the other process items addressed above.

4.2.4 Service Desk

Part of the process for Autolab Csi to improve service delivery has been the development of a Service Desk that provides as single point of contact for all service consumers. All service questions, issues and requests are logged and recorded in the centralised service desk. The skill level required to operate the service desk is at a relatively low level implying that little or no incident resolution will occur at the time the incident is logged.

4.2.5 Security Management

The Security Management process seeks to ensure the safety of information. Safety refers to the information contained within the systems not being vulnerable to a known risk whilst avoiding unknown risks where possible. The information being protected must have value that in turn depends on the information's confidentiality, integrity and availability. Secondary criteria of value include privacy, anonymity and verifiability.

Autolab Csi places significant emphasis on Security Management and has strict policies and procedures to ensure information safety. Agreements exist between Autolab Csi and its service consumers that all information generated and contained within the various systems that provide the service, are to be deemed valuable from both a primary and secondary definition perspective. The agreement on the classification of information as being homogenous has simplified the management of this process.

Choosing the highest level of value has however resulted in additional expenditure to secure information from a logical and physical perspective. Autolab Csi management are of the opinion that the current agreement does not provide the best cost/benefit solution, as the information in the system does not have material economic or financial value outside the sugar industry. Furthermore, aggregated information is widely published, on a weekly basis, and comparisons are drawn, at an industry level, with and between all fourteen sites.

The preceding section has presented the results of the investigation into the current IT Service Management processes at Autolab Csi by the Researcher. As a means of formal analysis against the ITIL framework, and as verification of the accumulated data, two survey instruments have been used, the results of which are presented below.

4.3 ITIL ASSESSMENT

4.3.1 Introduction

The survey used for the ITIL process adoption assessment (see Appendix B) is based on one developed by The Art of Service and has been designed to allow an ITIL adoptee to conduct a self-administered mini IT Service Management assessment using a low cost tool to highlight areas that require particular attention. The scoring system used in the assessment is a simple rating scale of ‘Unsure’ to ‘Strongly Agree (Yes)’ for each response, with the scores being averaged for all respondents for each service process (attribute). The resultant average scores are plotted on a radar chart to provide an easy to read display of how each process rates against the other. There is also a stacked bar chart that shows the overall responses for all questions in a particular process area (attribute).

4.3.2 Survey Results

The Autolab Csi IT Service Management survey was administered to eight employees of SASA, four of whom are part of the IT Division (two at Autolab Csi) and four are members of the Executive Management Team that included the Executive Director of SASA. The total number of responses for each process area, broken down by possible responses, is given in Table 4.1. All eight members of the sample population completed the survey.

Table 4.1 Survey Responses per Process Area

Process Area Responses (All Participants)	Unsure	Strongly disagree (NO)	Disagree	Agree	Strongly agree (YES)
Service Desk	0	48	8	16	42
Security Management	0	0	0	24	104
Incident Management	0	24	8	16	80
Problem Management	0	56	24	16	32
Configuration Management	0	88	8	8	24
Release Management	0	88	0	8	32
Change Management	0	96	0	0	32
Service Level Management	0	24	0	24	80
IT Service Continuity Management	0	48	0	0	80
Financial Management for IT	0	8	0	8	112
Availability Management	0	7	8	8	56

Capacity Management	0	96	0	16	16
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Data presented in Table 4.1 provides an easy means to determine the quantum of response for each process area but does not provide the data in a format that facilitates a comparison between process areas. Figure 4.1 below graphs the data provided in Table 4.1 that provides an easier means of comparing the quantum of responses for each process relative to each other.

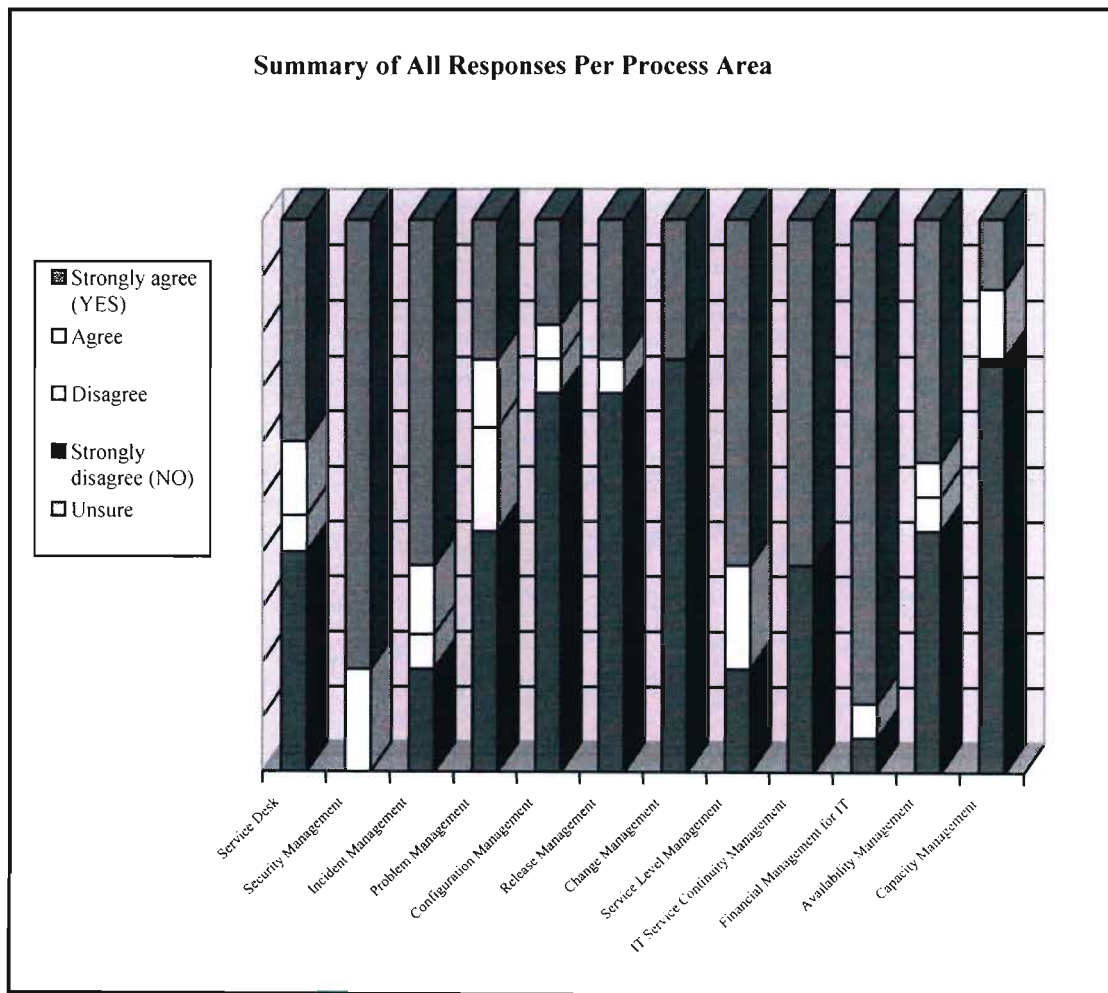


Figure 4.1 Quantum of all Responses

The data presented in Table 4.1 has been summarised to provide an average score for each process area (attribute) using the responses from all participants and all questions of the questionnaire. The values derived from this arithmetical process are given in Table 4.2.

Table 4.2 Process Area Average Score

Process Area Average Score (All Participants, All Questions)	Average Score	Score Rating
Service Desk	0.33125	3 +
Security Management	0.48125	5
Incident Management	0.41875	4 +
Problem Management	0.31875	3 +
Configuration Management	0.275	3 -
Release Management	0.2875	3 -
Change Management	0.275	3 -
Service Level Management	0.425	4 +
IT Service Continuity Management	0.3875	4 -
Financial Management for IT	0.475	5
Availability Management	0.35	4 -
Capacity Management	0.2625	3 -

The interpretation of the process average scores should be made with reference to Table 4.3 that analyses the process score by comparing it to five ranges and assigning the average process score (attribute) a process score ranking. The higher the Process Score Rating the better has been the adoption of best practice processes. The ‘Score

Rating' column of Table 4.2 has been extended with the inclusion of a positive (+) or negative (-) sign after the process score ranking. The positive or negative sign has been used as an indication as to whether or not the process average score is above (+) or below (-) the mid-point of the range for a particular score ranking.

Table 4.3 Process Score Ranking

Process Score Rating	Process Score	Comment
1	Less than 1.4	The process is non-existent or severely underdeveloped. A low process score may be an indication that increased communication is required.
2	1.5 to 2.4	At this level there is a need for some process re-design. While there are some signs of process activity, what is in place is somewhat underdeveloped.
3	2.5 to 3.4	While a score in this area rates the process area as below good practice/industry standard, it indicates that there is a firm basis on which improvements can be made.
4	3.5 to 4.4	Process scores in this range indicate that the particular process is very close to what can be considered as good practice. Many of the characteristics of the process are in place.
5	4.5+	A high score indicates that nearly all participants feel that the process is very well defined, with clear benefits and reflects industry best practice in this area.

Data presented in Table 4.2 provides an easy means to determine the level of successful implementation for each process area, but does not provide the data in a format that facilitates a comparison between process areas. Figure 4.2 below graphs

the data provided in Table 4.2 and provides an easier means of comparing the degree of success in implementation of each process relative to each other.

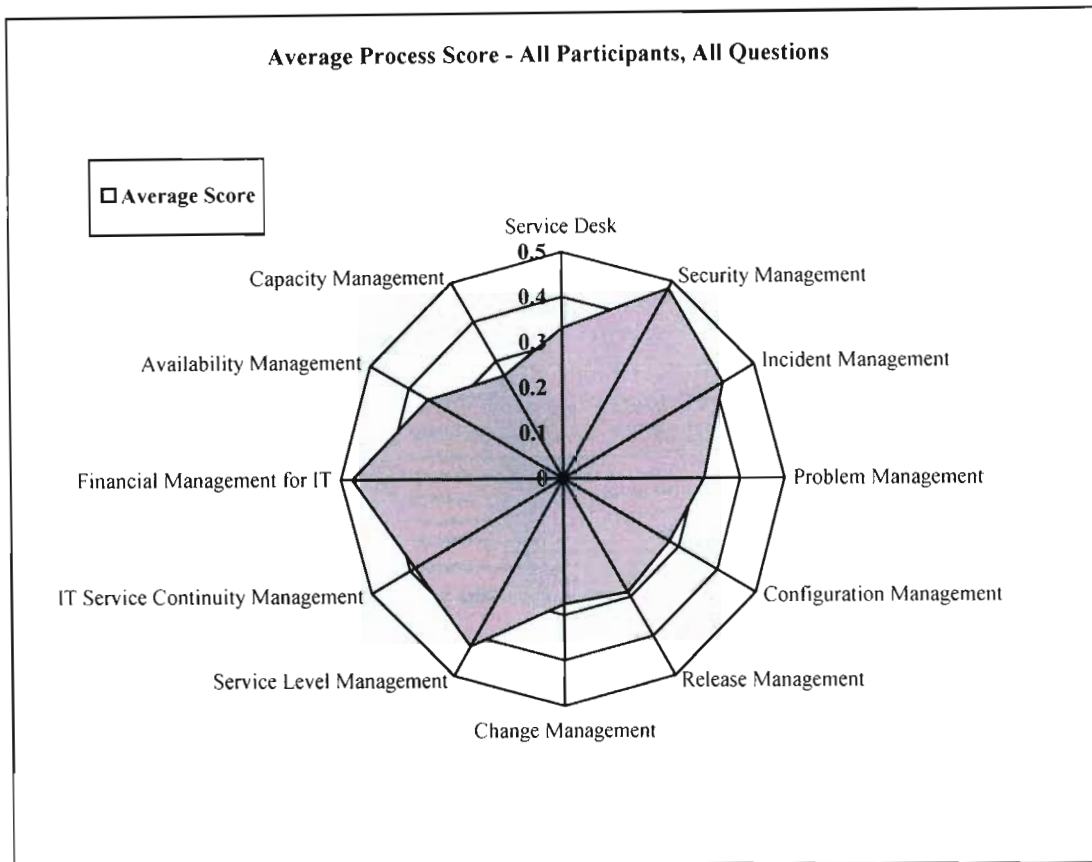


Figure 4.2 Average Process Scores

This section of the study has presented the findings of the ITIL process adoption survey. The next section will present the findings of the BS15000 Compliance Assessment.

4.4 BS15000 ASSESSMENT

4.4.1 Introduction

The survey used for the BS15000 Compliance Assessment (see Appendix C) is based on one developed by Stephan Kent of the OGC and has been designed to allow an organisation to review its progress in IT Service Management adoption against a

process capability framework. The scoring system used in the assessment is a simple rating scale of ‘Yes’ or ‘No’ for each response. The questions are weighted, i.e. those, which are deemed as having a higher significance, are considered mandatory for a ‘Yes’ answer at each level of capability.

4.4.2 Survey Results

The Autolab Csi BS15000 Compliance Assessment was administered to eight employees of SASA, four of whom are part of the IT Division (two at Autolab Csi) and four are members of the Executive Management Team that included the Executive Director of SASA. Table 4.3 summarises the findings of the survey by providing a Pass (√) or Fail (✘) mark for each of the process capability framework attributes as applied to the five ITIL processes for Service Delivery. Only the Service Delivery process has been reviewed as Autolab Csi management has focused on a program to implement the best practices for this process.

Table 4.4 BS15000 Compliance for the Service Delivery Process

	Service Level Management	IT Service Continuity Management	Financial Management for IT	Availability Management	Capacity Management
Prerequisites	√	√	√	√	√
Management Intent	√	√	√	√	√
Process capability	√	√	√	✘	✘
Internal Integration	√	√	√	√	✘
Products	√	✘	√	√	✘

Quality Control	✘	√	√	✘	✘
Management Information	✘	√	✘	✘	✘
External Integration	√	✘	✘	✘	✘
Customer Interface	✘	✘	✘	✘	✘

Legend:

√ = Pass

✘ = Fail

The interpretation of the Table 4.4 should be made with reference to Table 4.5 that explains the significance of each attribute of the process capability framework. Level One determines if the fundamentals of ITIL processes have been implemented by the organisation whilst Level Two focuses on the actual operation of the individual ITIL service process. Level Three determines if the output from the ITIL process is what would be expected if the process has been correctly implemented. Level Four investigates the flow of information out of the ITIL process to external stakeholders of the process and to other ITIL service processes. Level Five focuses on the need for there to be a continual review of the service process to ensure validation of the process and thereby ensuring it remains optimised towards meeting the needs of the customer.

Success, in the form of a Pass as depicted in Table 4.4, for all attributes of the process capability framework would imply that the organisation has adopted, and implemented the requirements for best practice service delivery for that particular service process. Failure, in the form of Fail as depicted in Table 4.4, in one or more attributes of the process capability framework would imply that the organisation would not receive a BS15000 compliance certificate. The management of the service

organisation will need to focus on these failed areas to better improve the adoption of ITIL best practice and in so doing, improve the service delivery to their customers.

Table 4.5 Process Capability Framework

Attribute Level	Attribute	Comment
Level 1	Prerequisites	Ascertains whether the minimum level of prerequisite items is available to support the process activities.
Level 1.5	Management Intent	Establishes whether there are organisational policy statements, business objectives (or similar evidence of intent) providing both purpose and guidance in the transformation or use of the prerequisite items.
Level 2	Process Capability	Examines the activities being carried out. The questions are aimed at identifying whether a minimum set of activities are being performed
Level 2.5	Internal Integration	Seeks to ascertain whether the activities are integrated sufficiently in order to fulfil the process intent.
Level 3	Products	Examines the actual output of the process to enquire whether all the relevant products are being produced.
Level 3.5	Quality Control	Is concerned with the review and verification of the process output to ensure that it is in keeping with the quality intent.
Level 4	Management Information	Is concerned with the governance of the process and ensuring that there is adequate and timely information produced from the process in order to support necessary management decisions.

Level 4.5	External Integration	Examines whether all the external interfaces and relationships between the discrete process and other processes have been established within the organisation. At this level, for IT service management, use of full ITIL terminology may be expected.
Level 5	Customer Interface	Is primarily concerned with the on-going external review and validation of the process to ensure that it remains optimised towards meeting the needs of the customer.

This section of the study has presented the findings of the BS15000 Compliance Assessment. The next section will present the findings of the benefits and challenges faced by Autolab Csi in the implementation of ITIL processes.

4.5 ITIL IMPLEMENTATION BENEFITS AND CHALLENGES

This section of the chapter will present the various implementation benefits and problems experienced by Autolab Csi in the twelve months since the decision was taken to adopt and implement ITIL service practices. The Researcher, through personal involvement in the planning and implementation of ITIL processes at Autolab Csi, had gathered the data presented. The data was based on relevant project documentation and reports published during the preceding twelve months. Benefits will be presented first, followed by implementation challenges

4.5.1 ITIL Implementation Benefits

The major benefits experienced by Autolab Csi during the implementation of ITIL processes can be summarised as follows:

- *Strategic Alignment* – The starting point for IT Service Management are the objectives of the organisation and not technology (OGC, 2003). The objective for IT service providers are therefore to deliver services that are required by

the business and this can only be achieved through the alignment of the IT strategy with the business strategy. IT, through an understanding of the needs and wishes of the customer, can begin to deliver an effective service. Strategic alignment has given Autolab Csi management a clear path to follow based on real, as opposed to perceived, service requirements for their customers. Understanding the need for aligned strategies simplifies the understanding for all service consultants as to how they individually contribute to the attainment of the stated strategy.

- *Holistic View* – ITIL forces the IT service organisation to take a holistic view of the service delivery process. This adds both complexities to the implementation process but also completeness as the ITIL processes work in a inter-locking and mutually supporting way.
- *Role Definition* – ITIL best practice requires that all processes be clearly documented and the tasks within the process be assigned to responsible persons. Clear role and responsibility clarity are therefore achieved and allow for the measurement of individuals key performance indicators.
- *Incident Management* – The implementation of a centralised Service Desk has allowed Autolab Csi to know, at any one point in time, what the current incidents under investigation are and what progress the service consultants have made in resolving the incident. Regular review of this data has lead to the performance of the service consultant being accurately reviewed and measured, incident patterns being tracked by end-user as a means to identify where further training might be needed, and ensuring that critical service incidents receive priority treatment. The Service Desk also allows Autolab Csi to communicate progress on incident resolution on a regular basis.
- *Better Utilisation of Resources* – Autolab Csi has not conducted formal financial analysis to determine if better resource utilisation has been achieved but, by looking at various internal performance metrics, it would appear that there has been a significant improvement in some areas. The improvement in these metrics would imply greater efficiency and effectiveness in the service delivery process and consequently in resource utilisation.

- *Financial Control* – As already mentioned, Autolab Csi is part of non-profit organisation that has an established financial system. The utilisation of purchases, sales and job costing modules available in the financial systems has led to improved internal control over these areas, especially in the costing for project related work.
- *Improved Customer Relations* – The decision to adopt ITIL best practices was made by Autolab Csi management and not at the request of its customers. The move was seen by the customers as a pro-active attempt by Autolab Csi to better understand their service requirements and to deliver these service requirements in the most cost effective and efficient manner. This favourable attitude resulted in the Service Level Agreement negotiation process progressing quickly and with little dispute by either party on the terms and conditions of the contract.

4.5.2 ITIL Implementation Challenges

The major challenges experienced by Autolab Csi during the implementation of ITIL processes can be summarised as follows:

- *Why ITIL?* – The most difficult challenge for Autolab Csi was to ensure the support, commitment and understanding of the Executive Management of SASA to the implementation process. Reasons for this included the extended time needed to explain what the ITIL process was and how it would benefit the customers of Autolab Csi (which do include other divisions of SASA), cost would need to be incurred to set-up some systems and the industry was in an economic downturn, and complete implementation would take about three years placing further demands on already stretched resources. The first, and most critical hurdle took four months to clear.
- *Scope* – ITIL covers every aspect of IT service delivery and has an overwhelming amount of information that needs to be understood and applied. Detailed project planning is needed to ensure that all aspects are covered

during the implementation process and that project milestones and deadlines are met and/or regularly reviewed.

- *Time and Resources* – Initial planning and task execution consume large quantities of exiting resources with very little initial benefit to the processes being investigated. It was critical that all relevant information be retrieved and correctly classified before plans could be made to bring existing service practices in line with best practice. The development of these plans requires the person performing this task to have detailed knowledge of current practices (the need for all the initial research) and also ITIL best practices. Professionals with these skills are relatively few in South Africa and cost a significant sum to engage.
- *Monitoring Tools* – The signing of a SLA with customers required that the performance of certain service activities had to be measured and reported on. Historically, Autolab Csi had never measured service delivery performance. This required them to implement systems to meet the reporting and measuring requirements of the SLA. Due to funding constraints, a system was developed in-house to address the need. Unfortunately, the monitoring system does not integrate with other systems making the provision of timely information cumbersome. Commercially available systems will need to be investigated if full ITIL integration is to be achieved.

4.6 CONCLUSION

This chapter has presented results of the research conducted during this study. The current Service Management practices of Autolab Csi were initially detailed as background information for the Service Management survey that was administered. The results of the research survey, in the form of a basic Service Management questionnaire, were presented and included a graphical representation of the data in a radar chart as well as a stacked bar chart depicting all responses per process area. This was followed by the presentation of a table showing criteria required for BS15000 certification and which of these criteria Autolab Csi is currently meeting. Various

benefits and challenges of the implementation of the ITIL service processes were presented in the final section of this chapter.

The next chapter will discuss the findings presented in this chapter and will focus on the rate of ITIL adoption for Autolab Csi, the degree of compliance with the BS15000 standard, implementation benefits and challenges experienced through the ITIL process adoption and finally, a review of service process areas that are problematic.

5 CHAPTER 5 – DISCUSSION

5.1 INTRODUCTION

The overall objective of the research undertaken in this study was to identify the degree of success for Autolab Csi in implementing best practices, as described in the ITIL framework for IT Service Management, with particular reference to the Service Delivery process. The findings addressed the research hypothesis that Autolab Csi had made progress in implementing all twelve ITIL process but not all best practice processes had been completely and/or successfully implemented. Determining, and subsequently comparing, current Autolab Csi Service Management practices to the ITIL framework, achieved this.

The findings, presented in Chapter 4, will be discussed, in terms of hypothesis one and two for this study, in the order that they were presented namely:

- Overall success in implementing the twelve ITIL service processes
- Review of the degree of BS15000 compliance for the Service Delivery process at Autolab Csi

The final section will discuss, in terms of hypothesis three of this study, the stated benefits and challenges Autolab Csi has experienced during the initial ITIL Service Management implementation process.

The results presented in Chapter 4 have to be reviewed on the basis and fundamental assumption that Autolab Csi had no formal Service Management processes in place before the decision was taken to implement ITIL. In other words, the point of comparison starts from a zero base and concludes with the progress made to the time this Study was conducted. Furthermore, it was recognised that the stated objective of Autolab Csi management was to focus on the Service Delivery process, and in particular, the Service Level Management process. It is important that the information provided in the remainder of this Chapter is read in the context explained above.

5.2 RESEARCH RESULTS

The findings addressed the research hypothesis that Autolab Csi had made progress in implementing all twelve ITIL process but not all best practice processes had been completely and/or successfully implemented. Further, the findings also addressed the hypothesis that benefits had accrued to Autolab Csi as a result of the adoption of the ITIL best practice framework.

5.2.1 ITIL Service Process Implementation

The ITIL framework has four broad process groupings namely, Service Delivery, Service Support, Service Desk and Security Management. The data gathered by the survey instrument will be discussed using these four broad process groupings.

5.2.1.1 Service Delivery

The Service Delivery process has five sub-processes and is listed as items one to five in table 5.1. The data presented in this table represents the spread of responses for each sub-process of Service Delivery. It must be noted that it was the stated objective of Autolab Csi management to focus on the Service Delivery process, and in particular, the Service Level Management process.

Table 5.1 Service Delivery Responses - Percentages

Service Delivery Responses (All Participants)	Unsure	Strongly disagree (NO)	Disagree	Agree	Strongly agree (YES)
1. Service Level Management	0.0%	18.8%	0.0%	18.8%	62.5%
2. IT Service Continuity Management	0.0%	37.5%	0.0%	0.0%	62.5%

3. Financial Management for IT	0.0%	6.3%	0.0%	6.3%	87.5%
4. Availability Management	0.0%	43.8%	6.3%	6.3%	43.8%
5. Capacity Management	0.0%	75.0%	0.0%	12.5%	12.5%
6. Overall	0.0%	36.3%	1.3%	8.8%	53.8%

For the Service Delivery process as a whole, 53.8% of the responses strongly agreed with the statements made in the questionnaire whilst 36.3% felt that the statements did not represent (strongly disagree) current practices at Autolab Csi. The data therefore supports the view that some progress had been made in the implementation of the Service Delivery process. Comparison of the results between processes reveals that some processes are perceived to have progressed further down the implementation path than others. In particular, Financial Management (87.5% strongly agreed) was perceived as being the best implemented of the Service Delivery processes whilst Capacity Management (75.0% strongly disagree) will require significant management attention to in order to meet the requirements of the ITIL best practice framework.

Service Level Management (SLM) and IT Service Continuity Management both have a 62.5% 'strongly agree' response rate. SLM has 18.8% of responses categorised as 'agree'. This indicates that the practical issues of SLA performance monitoring and integration of the SLM process with other Service Delivery processes are not perceived as being at optimal levels. Furthermore, 18.8% of responses show that some aspects of SLM are not implemented at all and it is in these areas that management of Autolab Csi should focus their attention. Service Continuity Management shows a larger percentage of responses (37.5%) that also fall into the 'strongly disagree' category. As with SLM, it is the responses that fall into this category that Autolab Csi Management should be focusing on.

No 'unsure' responses were recorded. This is an indication that the communication program undertaken by Autolab Csi management had been effective in imparting an

understanding of the Service Delivery process to Executive Management and to the employees involved in the implementation process.

The survey instrument did not probe into the detail of drafting and reaching agreement on a Service Level Agreement (SLA). As one of the initial focus areas for Autolab Csi management and the fact the fact that a SLA forms part of the SLM process, it would be appropriate to discuss the steps taken by Autolab Csi in this regard. Section 2.5.4 of Chapter 2 provided the theoretical reference for the design and implementation of a SLA and section 4.2.1 of Chapter 4 described the process adopted by Autolab Csi during the implementation window.

Some key omissions in the Autolab Csi process are:

- Service Catalogue – This was not developed as a blue print for all services, default levels and options to be included in the SLA development process. Only by performing this task can Autolab Csi be ensured that all services are correctly recorded in the SLA and that suitable performance metrics, if required, can be implemented and actual performance reported.
- Service Availability and Reliability – The SLA contract used by Autolab Csi does not contain sufficient detail of these two important measurement criteria to be useful to the service consumer. Greater detail should be agreed when the contract re-negotiation process is commenced.
- Performance Metrics – It was agreed between Autolab Csi and their customers to adopt easy to measure metrics in order to keep costs down. Although this is in practice a good decision, it can preclude the measurement of metrics that can add significantly more value to the performance review process. Being easy to measure does not automatically imply that the metric should be measured or that it will assist in service improvement programs.

5.2.1.2 Service Support

The Service Support process has five sub-processes and is listed as items one to five in table 5.2. The data presented in this table represents the spread of responses for each sub-process of Service Support.

Table 5.2 Service Support Responses - Percentages

Service Support Responses (All Participants)	Unsure	Strongly disagree (NO)	Disagree	Agree	Strongly agree (YES)
1. Incident Management	0.0%	18.7%	6.3%	12.5%	62.5%
2. Problem Management	0.0%	43.8%	18.8%	12.4%	25.0%
3. Configuration Management	0.0%	68.8%	6.2%	6.2%	18.8%
4. Release Management	0.0%	68.7%	0.0%	6.3%	25.0%
5. Change Management	0.0%	75.0%	0.0%	0.0%	25.0%
6. Overall	0.0%	55.0%	6.3%	7.5%	31.3%

For the Service Support process as a whole, 55.0% of the responses strongly disagreed with the statements made in the questionnaire whilst 31.3% felt that the statements represented (strongly agree) current practices at Autolab Csi. The data therefore supports the view that some progress had been made in the implementation of the Service Support process. Comparison of the results between processes reveals that few processes are perceived as having progressed very far down the implementation path.

The top performer in the Service Support process is Incident Management with 62.5% of responses being categorised as ‘strongly agree’. This recognises the fact that Autolab Csi had implemented a centralised support desk that logs, tracks and reports

support incidents to the user community and management. Some aspects of Incident Management, in particular integration of the support desk with other systems and the inability to provide initial support at the time the support incident is logged, are perceived as being weaknesses in the process. These, and responses categorised as ‘disagree’, should be the focus of Autolab Csi management when looking to improve the process.

All other areas of Service Support show a significantly lower perceived level of implementation success with Change Management, Release Management and Configuration Management showing the highest ‘strongly disagree’ responses. All three of these process areas are vital to the ongoing support and maintenance of the LIMS system and weakness in this area will result in service problems for Autolab Csi in the future. The close interaction these processes have with each other implies that Autolab Csi will need to make improvements to all three processes simultaneously. This will require careful planning and the allocation of significant resources to bring about meaningful change.

Problem Management can be classified as being between the two extremes of the other Service Support processes. 62.6% of responses are categorised as being either ‘strongly disagree’ or ‘disagree’ implying that almost two thirds of the process has not been successfully implemented. The biggest challenge in this area is the lack of proactive problem resolution and the lack of process integration. The former can be ascribed to the lack of people resources at Autolab Csi at the time this study was conducted and the latter to the lack of available service support system integration. Both limitations also affect the Service Delivery process.

No ‘unsure’ responses were recorded. This is an indication that the communication program undertaken by Autolab Csi management had been effective in imparting an understanding of the Service Support process to Executive Management and to the employees involved in the implementation process.

5.2.1.3 Service Desk

The data presented in table 5.3 represents the spread of responses for the Service Desk process.

Table 5.3 Service Desk Responses – Percentages

Service Desk Responses (All Participants)	Unsure	Strongly disagree (NO)	Disagree	Agree	Strongly agree (YES)
Service Desk	0.0%	40.0%	6.7%	13.3%	40.0%

The Service Desk process has a very close relationship to Incident Management and consequently has a similar response pattern. The identified weakness in this process relates to the inability of the Service Desk to provide useful information to all other service processes. This is as a result of the lack of system integration. Furthermore, there has been no interaction with the customer as to whether or not the process is meeting their expectations and providing information that is valuable to their business processes. The lack of integration and customer feedback should be focus of Autolab Csi management.

No 'unsure' responses were recorded. This is an indication that the communication program undertaken by Autolab Csi management had been effective in imparting an understanding of the Service Desk process to Executive Management and to the employees involved in the implementation process.

5.2.1.4 Security Management

The data presented in table 5.4 represents the spread of responses for the Security Management process.

Table 5.4 Security Management Responses – Percentages

Security Management Responses (All Participants)	Unsure	Strongly disagree (NO)	Disagree	Agree	Strongly agree (YES)
Security Management	0.0%	0.0%	0.0%	18.8%	81.2%

Section 4.2.4 of Chapter 4 explained the high value Autolab Csi’s customers place on security related issues and this would explain the very high positive response rates received for this process. Weaknesses in this process relate to the review of suppliers security polices and that the security plan is not ‘constantly’ updated. The latter point is of higher importance to Autolab Csi management, as they need to ensure that any change in user security requirements are quickly identified, assessed and implemented.

No ‘unsure’ responses were recorded. This is an indication that the communication program undertaken by Autolab Csi management had been effective in imparting an understanding of the Security Management process to Executive Management and to the employees involved in the implementation process.

The previous sections have looked at the twelve ITIL service processes under four broad headings and explained the success, or not, of their implementation at Autolab Csi. The next section will briefly compare the processes against each other to determine if hypothesis one and two of this study can be accepted or rejected.

5.2.1.5 Comparison between processes

Table 4.2 of section 4.3.2 presents the average score for each process area and includes a process score ranking. Table 5.5 below groups the twelve ITIL service processes according to their individual process score rating. A process score rating of 4 + and above indicates that the particular process is very close to what can be

considered as good practice and is the benchmark used to determine the success in the implementation process. A process score rating of 2 – or below indicates that the particular process shows little or no characteristics that are common to the best practice model and is the benchmark used to determine that no progress has been made in the implementation process.

Table 5.5 Process Score Rating

Process Score Rating	ITIL Process	Process Score Rating	ITIL Process
1 –	None	3 +	1. Service Desk 2. Problem Management
1 +	None	4 –	1. Service Continuity Management 2. Availability Management
2 –	None	4 +	1. Incident Management 2. Service Level Management
2 +	None	5	1. Security Management 2. Financial Management
3 –	1. Configuration Management 2. Release Management 3. Change Management 4. Capacity Management		

Based on the two benchmarks stated above, and by review of table 5.5 it, is clear that all processes have a process score rating above the minimum requirement of 2 –. This implies that all processes have some characteristics that are common to the ITIL best practice model. When reviewing the success of implementation, only four processes meet the specified benchmark namely, Incident Management, Service Level

Management, Security Management and Financial Management. The latter two are the only processes to receive a process score rating of five.

The conclusion that can be made, based on the information in table 5.5, is that whilst some processes have been implemented well, especially those that were the focus of Autolab Csi's managements initial focus, most of the processes lack conformance to the best practice framework. The four processes having a process score rating of just 3 – will require significant further development to bring current process practices in line with the requirements for ITIL compliance. The important aspect to note in this review is that the research data would support the view that progress has been made in starting the implementation for all twelve processes as all processes meet the minimum benchmark requirement.

The information presented in this section provides support for the acceptance of the first and second hypotheses of this study namely, that Autolab Csi had made progress in implementing all twelve ITIL process but not all best practice processes had been completely and/or successfully implemented.

5.2.2 BS15000 Compliance

The importance of BS15000 compliance to this study is found in the fact that various customers of Autolab Csi have adopted quality systems, predominantly ISO 9000. As a supplier of services to these organisations, the requirement exists for Autolab Csi to prove that their processes are certified against a recognised standards authority. In this case, the British Standards Institute standard BS15000. The review of the ability of Autolab Csi to meet the requirements of the BS15000 standard have been limited to the Service Delivery process only as this has been the stated focus area for Autolab Csi Management. As seen in previous sections of this Chapter, a review of the other service processes would not add much value as they are poorly developed, with the exception of Security Management, when compared to the Service Delivery process.

Table 5.6 BS15000 Compliance for the Service Delivery Process

Service Level Management	IT Service Continuity Management	Financial Management for IT	Availability Management	Capacity Management
66.7 %	66.7 %	66.7 %	44.4 %	22.2 %

It is clear from table 5.6 that the Service Delivery processes at Autolab Csi would not meet the requirements to achieve BS15000 certification. Availability Management (44.4%) and Capacity Management (22.2%) show the lowest of level of compliance with the latter meeting only two of the nine required service attributes (see table 4.2 in Chapter 4 section 4.4.2).

Table 5.7 BS15000 Service Attribute Compliance

Service Attribute Required	Percentage Compliance	Service Attribute Required	Percentage Compliance
Prerequisites	100 %	Quality Control	40 %
Management Intent	100 %	Management Information	20 %
Process Capability	60 %	External Integration	20 %
Internal Integration	80 %	Customer Interface	0 %
Products	60 %		

Table 5.7 shows the nine service process attributes analysed to determine BS15000 compliance. All Service Delivery processes meet the initial Level one requirement of Prerequisites and Management Intent. This result is expected based on the process score rating achieved for Service Delivery processes presented in section 5.2.2 above. Level two and three attributes perform well and the results show that, on average, there is a high level of individual process activity integration resulting in the fulfilment of the intent of the process. Level four and five attributes are weak with no level five attributes being evident in any of the Service Delivery processes. Of greater

concern for Autolab Csi management is the weakness in external integration between service processes (as highlighted in section 5.2.1.1 above and confirmed here) and the apparent poor levels of management information being produced.

The need for timely information that is relevant to the management of the entire service process is a critical perceived weakness identified by this survey. Autolab Csi management would be well advised to strengthen the reporting, feedback and integration mechanisms, not only for the Service Delivery process, but also for all processes of the ITIL framework.

5.2.3 ITIL Implementation Benefits and Challenges

The preceding sections in this Chapter have provided a review of the implementation process of ITIL at Autolab Csi. The final question that needs to be answered is why this task was undertaken in the first place. It is clear from the information provided that the implementation process has not been executed flawlessly and that some areas require significantly more effort before they conform to the ITIL framework.

Section 4.5 of Chapter 4 presented the benefits and challenges Autolab Csi have experienced during the implementation process. The key learning experiences for organisations looking to implement this standard are threefold. Firstly, the IT service department or organisation must obtain the complete understanding and full co-operation of their executive management. Significant resources are allocated during the implementation process and financial costs will be incurred. The magnitude of these needs to be managed to ensure service delivery does not suffer as a result of resources being re-allocated to the implementation process. Secondly, the scope of the exercise requires the adoption of a formal project management approach. In this way, planning ensures required resources are made available when needed, progress can be steadily mapped and reported to appropriate parties and a coherent approach will limit the chance of key activities not being performed at all. Finally, the development of suitable performance metrics to be included in the Service Level Agreement and

monitored through the Service desk is difficult to design and implement. Simplicity should always be an objective as this increases the degree of understanding and reduces the cost to implement. Metrics should also contribute positively to the performance review system and should preferably not be used as a negotiating weapon by either party to the agreement (Karen, 2001).

The information presented in this section provides support for the acceptance of the third hypothesis of this study namely, that Autolab Csi had experienced benefits in their service processes as a result of the adoption of the ITIL best practice framework.

5.3 Conclusion

The Chapter has discussed the findings presented in Chapter 4. The information presented in section 5.2.1 and 5.2.2 provided support for the acceptance of the first and second hypothesis of this study namely, that Autolab Csi had made progress in implementing all twelve ITIL process but not all best practice processes had been completely and/or successfully implemented. The level of BS15000 compliance for the Service Delivery process was also discussed and the importance of compliance to Autolab Csi explained. The information presented in section 5.2.3 provided support for the acceptance of the third hypothesis of this study namely, that Autolab Csi had experienced benefits in their service processes as a result of the adoption of the ITIL best practice framework.

The conclusions and recommendations of this study are presented in the following Chapter.

6 CHAPTER 6 – CONCLUSION

6.1 INTRODUCTION

In order to retain/maintain a competitive market position, Autolab Csi has to determine, on a regular basis, the levels of Autolab Csi customer satisfaction with its service delivery process. The overall objective of the survey was to identify the magnitude of adoption of the ITIL framework within Autolab Csi as a mechanism for meeting customer service requirements. Sub-objectives included determining the degree of BS1500 compliance for the Service Delivery process and identification of benefits and challenges experienced by Autolab Csi during the adoption of ITIL best practice framework.

The data analysis presented in Chapter 4 has been discussed in Chapter 5 in relation to the objectives and hypotheses of the study as summarised above. Conclusions will be made and recommendations proposed, to improve future Autolab Csi process adoption and to improve implementation and monitoring of customer satisfaction strategies by Autolab Csi. Finally, recommendations for future research will be presented.

6.2 CONCLUSIONS OF RESEARCH FINDINGS

The overall objective of the research undertaken in this study was to identify the degree of success for Autolab Csi in implementing best practices, as described in the ITIL framework for IT Service Management, with particular reference to the Service Delivery process. The evaluation of the data provided support for not rejecting the null hypothesis namely, that Autolab Csi had made progress in implementing all twelve ITIL process

The second sub-objective of this study was to determine that Autolab Csi had not completely implemented all twelve best practice processes. The evaluation of the data provided support for not rejecting the second hypothesis namely, that Autolab Csi had made progress in implementing all twelve ITIL process but not all best practice processes had been completely and/or successfully implemented.

The third sub-objective of this study was to determine what benefits had accrued to Autolab Csi during the initial ITIL Service Management implementation process. The evaluation of the data provided support for the acceptance of the third hypothesis namely, that Autolab Csi had experienced benefits in their service processes as a result of the adoption of the ITIL best practice framework.

The current study identified weaknesses in the current service delivery processes at Autolab Csi. Various challenges faced by Autolab Csi during the implementation process were also identified and discussed.

6.3 RECOMMENDATIONS

The deregulated market environment in which Autolab Csi operates necessitates that Autolab Csi implement best practice service processes as a means to improving satisfaction levels of its customers. By achieving continuous improvement in customer satisfaction levels, through better service delivery mechanisms, Autolab Csi would be able to turn as many customers as possible into true, long-term, loyal customers. The lack of an effective monitoring system to continuously monitor the implementation of service improvement strategies across Autolab Csi has resulted in some service processes operating effectively and some less effectively. The assessment of effective strategy implementation could be measured only through the completion of the IT Service Management and BS1500 Compliance Assessment surveys. No other more immediate type review mechanism is used to monitor the effectiveness of strategy implementation.

It is recommended that a management tool be used to monitor the ongoing implementation of consumer satisfaction improvement strategies within the ITIL developed framework at Autolab Csi. In particular, the Balanced Scorecard is recommended as a suitable management tool that Autolab Csi should consider implementing. The Balanced Scorecard (Kaplan and Norton, 1992) concept acknowledges the expectations of different stakeholders and relates an assessment of performance to choice of strategy. More importantly, performance is linked, not only to short-term outputs, but also to the way in which strategy implementation processes are managed.

The current study is the first review conducted on the implementation of ITIL best practice service processes at Autolab Csi as a mechanism of improving customer satisfaction levels. The study has been internally focused in the sense that internal systems and processes have been reviewed without comment from the customer on the quality of the service. In a competitive market environment, Autolab Csi must be responsive to changing customer needs and changing industry circumstances. To address the stated shortcoming of this study it is recommended that a Autolab Csi introduce a customer survey to be conducted every three years, together with regular monitoring of service delivery and strategy implementation by the Balanced Scorecard tool

It is only through regular surveys that Autolab Csi customer service trends and patterns will become apparent. It is strongly recommended that ongoing customer research be undertaken by Autolab Csi to achieve continuous customer driven improvement and to maintain the link between customer satisfaction measurement and internal business process systems.

6.4 FUTURE RESEARCH

As discussed previously, Autolab Csi still operates in a monopolistic market environment. The customers of Autolab Csi therefore have no benchmark against

which to compare Autolab Csi. It is recommended that Autolab Csi carry out a benchmarking exercise on other IT service providers. Whilst not part of the sugar industry, benchmarking against other similar service providers from other industries would assist Autolab Csi in refining its service characteristics and comparing its rankings on similar service characteristics. Future research into Autolab Csi customer satisfaction can therefore consider a gap analysis between customer expectations and perceptions.

A quantitative study such as the current study provides critical feedback from people involved in the daily operation of service delivery and helps Autolab Csi to improve its implementation processes continuously. It is recommended that this type of qualitative research be continued and that an Autolab Csi customer focus group be selected and used on an annual basis to obtain input and feedback from selected customers. This focus group approach would be useful for Autolab Csi were the quantitative results of this study indicates certain shortcomings for specific service delivery processes. As proposed by Naumann and Giel (1995), focus group discussions can be used for understanding the basis of the quantitative findings and are also a useful source of ideas for improving Autolab Csi service delivery.

The completion of this study of the implementation of ITIL best practice service processes has shown that good progress has been made in all process areas. Where the progress has, comparatively, not been as advanced, the presented survey data suggests that the foundations for improvements are however in place. With focus by Autolab Csi on the areas highlighted in the discussion of the results and the implementation of the recommendations of this study, Autolab Csi should be well placed to improve customer satisfaction and loyalty levels going forward.

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APPENDIX A - Glossary of Terms used in the Study

Availability	The Ability of a component or service to perform its required function at a stated instant or over a stated period of time. It is usually expressed as the availability ratio, i.e. the proportion of time that the service is actually available for use by the Consumers within agreed service hours.
Balanced Scorecard	An aid to organising performance management. It helps focus, not only on the financial targets but also on the internal processes, Consumers and learning and growth issues.
BS15000	A British Standards Institute (BSI) standard for IT service processes that provides an audited assurance that service processes are appropriate, represent Best Practice and are performing well. BS15000 is a formalisation of the key elements of IT Service Management Best Practices expounded in the ITIL framework.
Business Process	A group of business activities undertaken by an organisation in pursuit of a common goal. Typical business processes include receiving order, marketing services, selling products, delivering services, distributing products, invoicing for services and accounting for money received. A business process usually depends upon several business functions for support, e.g. IT and Human Resources. A business process

rarely operates in isolation, i.e. other business processes will depend on it and it will depend on other processes.

Change

The addition, modification or removal of approved, supported or base lined hardware, network, software, application, environment, system, desktop build or associated documentation.

Change Control

The procedure to ensure that all Changes are controlled, including the submission, analysis, decision making, approval, implementation and post-implementation of the change.

Change Management

Process of controlling changes to the infrastructure or any aspect of services, in a controlled manner, enabling approved Changes with minimum disruption.

Configuration Management

The process of identifying and defining the Configuration Items in a system, recording and reporting the status of Configuration Items and Requests for Change, and verifying the completeness and correctness of configuration items.

Consumer

Owner of the service; usually the Consumer has responsibility for the cost of the service, either directly through charging or indirectly in terms of demonstrable business need. It is the Consumer who will define the service requirements.

Incident	Any event which is not part of the standard operation of a service and which causes, or may cause, any interruption to, or a reduction in, the quality of that service.
IT	Information Technology
ITIL	The OGC IT Infrastructure library – a set of guides on the management and provision of operational IT services.
Metric	A measurable element of a service process or function.
OGC	Office of Government Commerce (UK)
Process	A Connected series of actions, activities, Changes etc., performed by agents the intent of satisfying a purpose or achieving a goal.
Request for Change (RFC)	Form, or screen, used to record details of a request for a change to any configuration item within an infrastructure or to procedures and items associated with the infrastructure.
Resources	The It Services sections needs to provide the consumers with the required services. The resources are typically computer and related equipment, software, facilities or organisational (people).

Risk	A measure of the exposure to which an organisation may be subjected. This is a combination of the likelihood of a business disruption occurring and the possible loss that may result from such business disruption.
Service	One or more IT systems that enable a business process.
Service Catalogue	Written statement of IT services, default levels and options.
Service Desk	The single point of contact within the IT organisation for users/consumers of IT services.
Service Level Agreement (SLA)	Written agreement between a service provider and the consumer(s) that documents the agreed Service Levels for a Service.
Service Level Management (SLM)	The process of defining, agreeing, documenting and managing the levels of consumers IT services, that are required and cost justified.
Services	The deliverables of the IT Services organisation as perceived by the Consumer; the services do not consist merely of making computer resources available for Consumers to use.
System	An integrated composite that consists of one or more of the processes, hardware, software, facilities and people, that provides capability to satisfy a stated need or objective.

Underpinning Contract

A contract with an external supplier covering delivery of services that support the IT organisation in their delivery of services.

SOUTH AFRICAN SUGAR ASSOCIATION

AUTOLAB Csi

IT SERVICE MANAGEMENT SURVEY

2004

GUIDELINES FOR QUESTIONNAIRE COMPLETION AND RETURN

On the following pages you will find several statements designed to obtain your perceptions of the Autolab Csi IT Service Management processes. The survey is divided into different sections, each of which has common completion instructions. Please read the statements carefully, but try to respond to them as quickly and spontaneously as possible.

Please respond as honestly and frankly as possible. This is essential, as the information obtained from the survey will be used to help improve current service practices at Autolab Csi.

Please return the completed survey via electronic mail to: Adrian.Coreejes@sasa.org.za as soon as possible, but before 10 May 2004.

Thank you for your participation.

AUTOLAB Csi

IT SERVICE MANAGEMENT SURVEY

PART ONE – SERVICE DESK

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the Service Desk Process.

Write a NUMBER in the box beside each statement, based on the following scale:

1	2	3	4	5
Unsure	Strongly Disagree (No)	Disagree	Agree	Strongly Agree (Yes)

How well, in your opinion, does each of the following statements describe the Service Desk at Autolab Csi?

	1. Is there a Service Desk in place within your organisation (either formal or informal)?
	2. Are new employees to the organisation briefed on the ways to contact the Service Desk and for what type of issues?
	3. Is the Service Desk the known contact point for all IT problems?
	4. Are calls that are taken at the Service Desk recorded in an electronic system?

	5. Does the Service Desk advise end users of upcoming expected outages?
	6. Does the organisation as a whole feel that the Service Desk is a good investment?
	7. Are there easily accessible reports on numbers of calls received, types of calls, etc.?
	8. Does the Service Desk proactively advise users of the status of their calls, when certain time limits are reached?
	9. Is there a user satisfaction survey system in place (either automated for each issue or for instance a quarterly/annual survey)?
	10. Do the number of staff working on the Service Desk change in times of peak load?
	11. Do the Service Desk employees receive adequate training in the use of tools, telephone techniques and general customer support skills?
	12. Is there an escalation process in place for calls that cannot be resolved at first point of contact with the Service Desk?
	13. Is there a regular review of Service Desk performance against expected Key Performance Indicators?
	14. Are multiple changes grouped and then properly scheduled to minimize the impact to the business users?
	15. Is working on the Service Desk seen as a highly demanding role, requiring expert skills in troubleshooting and people management?
	16. Does the Service Desk provide trending information and customer satisfaction rating reports to Management?

AUTOLAB Csi

IT SERVICE MANAGEMENT SURVEY

PART TWO – SECURITY MANAGEMENT

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the Security Management Process.

Write a NUMBER in the box beside each statement, based on the following scale:

1	2	3	4	5
Unsure	Strongly Disagree (No)	Disagree	Agree	Strongly Agree (Yes)

How well, in your opinion, does each of the following statements describe Security Management at Autolab Csi?

	1. Is there a clear understanding in the organisation of whom or which department is responsible for IT security?
	2. Are there physical barriers in place preventing unauthorized access to critical IT equipment?
	3. Have the security needs of the business been documented?
	4. Is there a commitment within the management team to protect the organisations information?

	5. Is there an IT Security Plan in place that is constantly reviewed and updated?
	6. Are there preventative systems in place to protect against electronic attacks (e.g.. Firewalls)?
	7. Are there clear steps in place for handling security breaches?
	8. Do staff in the organisation appreciate the importance of protecting their information and IT Assets?
	9. Is Management provided security reports highlighting areas under attack, with suggested strategies?
	10. Are changes to the security profile of the organisation handled through a formal change management process?
	11. Is the cost of providing security known and balanced against the value of the information being protected?
	12. Are there procedures in place to ensure that the systems protecting the organisation are updated to the latest versions on a known schedule?
	13. Are there regular reviews with suppliers to ensure that their security measures are adequate?
	14. Are there regular reviews with clients/customers to ensure that your security measures do not hamper the smooth operation of the business?
	15. Do the Security Management team and the IT Service Continuity Management team have excellent communication channels between them?
	16. Are contracts/agreements with external security providers reviewed on a regular basis for completeness, reporting and relevance?

AUTOLAB Csi

IT SERVICE MANAGEMENT SURVEY

PART THREE – INCIDENT MANAGEMENT

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the Incident Management Process.

Write a NUMBER in the box beside each statement, based on the following scale:

1	2	3	4	5
Unsure	Strongly Disagree (No)	Disagree	Agree	Strongly Agree (Yes)

How well, in your opinion, does each of the following statements describe Incident Management at Autolab Csi?

	1. Is there a clear understanding by the IT Staff in the organisation of this process?
	2. Is there enough information captured about incidents when they are registered?
	3. Are incidents assigned a classification code that may point to the likely cause of the incident?

	4. Is there a feeling within the business users that reducing the number of incidents will increase overall productivity?
	5. Is there a budget for the provision of incident management tracking tools and the overall Incident reduction?
	6. When closed are incidents assigned a code that points to the actual cause of the incident?
	7. Before effort is put into solving a new incident are there checks to see if the same incident was dealt with in the past?
	8. Is there sufficient time and budget allowed for training staff in this process area?
	9. Are the procedures in place to assess the user satisfaction levels of incident resolution?
	10. Are there suitable reports provided to Management that indicate incidents solved at the Service Desk, first level support, etc.?
	11. Are there regular reviews on performance of this process area against documented Key Performance Indicators (KPI's)?
	12. Are all incidents recorded or is there some informal ways users can bypass the process?
	13. Is there a good flow of information from Incident Management into the Problem Management process?
	14. Is there a list of high priority users that receive preferential treatment when registering incidents?
	15. Is there a procedure in place for dealing with high impact incidents?
	16. Is each incident given it's own unique identifying number?

AUTOLAB Csi

IT SERVICE MANAGEMENT SURVEY

PART FOUR – PROBLEM MANAGEMENT

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the Problem Management Process.

Write a NUMBER in the box beside each statement, based on the following scale:

1	2	3	4	5
Unsure	Strongly Disagree (No)	Disagree	Agree	Strongly Agree (Yes)

How well, in your opinion, does each of the following statements describe Problem Management at Autolab Csi?

	1. Is there a clear understanding by the IT Staff in the organisation of this process?
	2. Is it clear who in the organisation should be assigned problems to be dealt with?
	3. Is there a list of workarounds maintained and used while more detailed analysis is done?
	4. Does the process owner undertake proactive problem management (looking for potential areas of failure, before they occur)?

	5. Is there sufficient time and budget allowed for training staff in this process area?
	6. Does the Process owner analyse incident information to look for incident trends?
	7. Is there management commitment to support staff allocating sufficient time for structural problem solving activities?
	8. Is the organisation committed to reducing the total number of problems and the number of incidents that interrupt the conduct of business?
	9. Are there suitable reports provided to Management that indicate numbers of problems outstanding & resolved, etc.?
	10. Have the responsibilities for problem management been assigned?
	11. Are electronic tools used in this process area well utilized?
	12. Is there a procedure by which potential problems are classified, in terms of category, urgency, priority and impact and assigned for investigation?
	13. Does the Problem Management process have a good line of communication with the Change Management process area?
	14. Is infrastructure monitored after problem resolution?
	15. Are there regular reviews on performance of this process area against documented Key Performance Indicators (KPI's)?
	16. Does this process area exchange information with a variety of other process areas?

AUTOLAB Csi

IT SERVICE MANAGEMENT SURVEY

PART FIVE – CONFIGURATION MANAGEMENT

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the Configuration Management Process.

Write a NUMBER in the box beside each statement, based on the following scale:

1	2	3	4	5
Unsure	Strongly Disagree (No)	Disagree	Agree	Strongly Agree (Yes)

How well, in your opinion, does each of the following statements describe Configuration Management at Autolab Csi?

	1. Is there sufficient time and budget allowed for training staff in this process area?
	2. Is there a published and accepted list of what is considered to be the highest priority components of the infrastructure?
	3. Is there a known and documented naming convention in place for all Configuration items (CI's)?

	4. Are there procedures in place to ensure that the process cannot be bypassed?
	5. Is there a clear understanding by the IT Staff in the organisation of this process?
	6. Is the level of information held matched to the organizational requirements?
	7. Are electronic tools used in this process area well utilized?
	8. Are there a Definitive Software Library and a Definitive Hardware Store within the organisation (physical storage locations for software and hardware)?
	9. Are all relevant components adequately labelled?
	10. Does this process area exchange information with a variety of other process areas?
	11. Are problem CI's identified automatically highlighted by defining rules in the CMDB?
	12. Does the structure of the Configuration Management Database (CMDB) help to prevent duplication of entries?
	13. Is there a regular review of the activities associated with this process?
	14. Is there a good flow of information from Configuration Management into the Release Management area?
	15. Are there regular reviews on performance of this process area against documented Key Performance Indicators (KPI's)?
	16. Is there a schedule of audit activity that is followed to check CMDB accuracy?

AUTOLAB Csi

IT SERVICE MANAGEMENT SURVEY

PART SIX – RELEASE MANAGEMENT

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the Release Management Process.

Write a NUMBER in the box beside each statement, based on the following scale:

1	2	3	4	5
Unsure	Strongly Disagree (No)	Disagree	Agree	Strongly Agree (Yes)

How well, in your opinion, does each of the following statements describe Release Management at Autolab Csi?

	1. Has a release policy been agreed with the business representatives?
	2. Is there a well-defined change management process within the organisation?
	3. Is the master copy software/applications used in the organisation held in a physically secure location (DSL)?
	4. Is there sufficient time and budget allowed for training staff in this process area?

	5. Are electronic tools used in this process area well utilized?
	6. Are test plans and back out plans prepared for each release?
	7. Is there a regular review of the activities associated with this process?
	8. Is the CMDB updated with new details once a release is distributed?
	9. Are there standard set-ups that can be quickly deployed on standard equipment that comes into the organisation?
	10. Is there a schedule maintained of expected releases and their expected release date?
	11. Is there a clear understanding by the IT Staff in the organisation of this process?
	12. Are the release numbers and naming conventions in place?
	13. Is the development environment properly insulated from the production or live environment?
	14. Are post release reviews held as part of a continual improvement program?
	15. Does this process area exchange information with a variety of other process areas?
	16. Are there regular reviews on performance of this process area against documented Key Performance Indicators (KPI's)?

AUTOLAB Csi

IT SERVICE MANAGEMENT SURVEY

PART SEVEN – CHANGE MANAGEMENT

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the Change Management Process.

Write a NUMBER in the box beside each statement, based on the following scale:

1	2	3	4	5
Unsure	Strongly Disagree (No)	Disagree	Agree	Strongly Agree (Yes)

How well, in your opinion, does each of the following statements describe Change Management at Autolab Csi?

	1. Is there a clear understanding by the IT Staff in the organisation of this process?
	2. Are change requests check and verified for completeness prior to their submission?
	3. Is there sufficient time and budget allowed for training staff in this process area?
	4. Are electronic tools used in this process area well utilized?

	5. Has the Change Advisory Board (CAB) been established with appropriate terms of reference (meeting times, authority, etc.)?
	6. Are all changes submitted recorded (even ones that are rejected)?
	7. Is there a procedure in place to handle Emergency Changes?
	8. Does the process area produce a Forward Schedule of Changes (FSC) (expected changes for the future)?
	9. Is there a regular review of the activities associated with this process?
	10. Are business representatives involved with major changes?
	11. Is there a clear distinction between a change request (e.g.. Upgrade application) and a service request (e.g.. Resetting a password)?
	12. Does this process area exchange information with a variety of other process areas?
	13. Are there regular reviews on performance of this process area against documented Key Performance Indicators (KPI's)?
	14. Are multiple changes grouped and then properly scheduled to minimize the impact to the business users?
	15. Are changes categorized according to their impact and urgency?
	16. Are changes assessed on the value they will deliver to the business prior to their approval?

AUTOLAB Csi

IT SERVICE MANAGEMENT SURVEY

PART EIGHT – SERVICE LEVEL MANAGEMENT

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the Service Level Management Process.

Write a NUMBER in the box beside each statement, based on the following scale:

1	2	3	4	5
Unsure	Strongly Disagree (No)	Disagree	Agree	Strongly Agree (Yes)

How well, in your opinion, does each of the following statements describe the Service Level Management at Autolab Csi?

	1. Is there a clear understanding by the IT Staff in the organisation of this process?
	2. Is there a regular review of the activities associated with this process?
	3. Is there Service Level Agreements (SLA) in place that follow a defined structure?

	4. Does this process area exchange information with a variety of other process areas?
	5. Are agreements with external suppliers (Underpinning contracts) documented and reflected in the SLA's?
	6. Is there a Service Catalogue that describes the services offered by the IT organisation?
	7. Is there a good communication channel between the IT Service Level Manager and the customer/business representative?
	8. Have all SLA's been accepted (signed off) by customers/business representatives?
	9. Is there an adequate Service Improvement Plan (SIP) that can be followed when SLA's are seriously breached?
	10. Is there sufficient time and budget allowed for training staff in this process area?
	11. Are electronic tools used in this process area well utilized?
	12. Are there regular reviews on performance of this process area against documented Key Performance Indicators (KPI's)?
	13. Are SLA's written in such a way that changing Service Level Requirements (SLR's) can be easily incorporated and agreed upon?
	14. Are regular service review meetings held to discuss current and future requirements of the IT organisation?
	15. Does the SLA structure include features such as reliability, security, service hours, support, response times, turnaround times, performance criteria?
	16. Can new services be easily incorporated into the Service Level Management process?

AUTOLAB Csi

IT SERVICE MANAGEMENT SURVEY

PART NINE – IT SERVICE CONTINUITY MANAGEMENT

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the IT Service Continuity Management Process.

Write a NUMBER in the box beside each statement, based on the following scale:

1	2	3	4	5
Unsure	Strongly Disagree (No)	Disagree	Agree	Strongly Agree (Yes)

How well, in your opinion, does each of the following statements describe IT Service Continuity at Autolab Csi?

	1. Is there a clear understanding by the IT Staff in the organisation of this process?
	2. Is there a regular review of the activities associated with this process?
	3. Is there a regular Business Impact Analysis (BIA) that reviews the services used by the business and the impact if they are lost?

	4. Is there a documented and known recovery plan in place for each service area, in the event of an unforeseen issue?
	5. Do changes to the IT Service Continuity Plans go through a formal change management process?
	6. Does this process area exchange information with a variety of other process areas?
	7. Are there regular backups of critical data taken and stored securely?
	8. Are electronic tools used in this process area well utilized?
	9. Is the cost of continuity planning balanced against the value to the business?
	10. Is there sufficient time and budget allowed for training staff in this process area?
	11. Is there a continual check to find more effective solutions to incorporate into the ITSCM plan?
	12. Does the IT Service Continuity Management plan form part of the Business Continuity Plan?
	13. Is there a clear understanding of the recovery options available (manual work-around, reciprocal, gradual, intermediate, immediate)?
	14. Is there sufficient testing of the ITSCM plan?
	15. Are critical backups of information tested on a regular basis?
	16. Are there regular reviews on performance of this process area against documented Key Performance Indicators (KPI's)?

AUTOLAB Csi

IT SERVICE MANAGEMENT SURVEY

PART TEN – FINANCIAL MANAGEMENT FOR IT

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the Financial Management for IT Process.

Write a NUMBER in the box beside each statement, based on the following scale:

1	2	3	4	5
Unsure	Strongly Disagree (No)	Disagree	Agree	Strongly Agree (Yes)

How well, in your opinion, does each of the following statements describe Financial Management for IT at Autolab Csi?

	1. Is there a clear understanding by the IT Staff in the organisation of this process?
	2. Is there a regular review of the activities associated with this process?
	3. Do you have a good insight into the costs of running the IT environment?

	4. Can costs of providing current services to the business be demonstrated easily?
	5. Are actual costs compared to budgeted costs on a regular basis?
	6. Are financial audits conducted regularly?
	7. Is there sufficient time and budget allowed for training staff in this process area?
	8. Can variances of actual to budgeted costs be easily traced?
	9. Does this process area exchange information with a variety of other process areas?
	10. Is there clear understanding of operating versus capital costs, indirect versus direct and fixed costs versus variable costs?
	11. Are financial reports simple and easy to understand?
	12. Is it understood whether the IT department operates as a recovery centre, profit centre or simply an accounting centre?
	13. Are electronic tools used in this process area well utilized?
	14. Is the charging model used by the IT organisation defined and understood?
	15. Are there regular reviews on performance of this process area against documented Key Performance Indicators (KPI's)?
	16. Are checks made on the suitability for outsourcing or in sourcing aspects of the IT environment against current known costs?

AUTOLAB Csi

IT SERVICE MANAGEMENT SURVEY

PART ELEVEN – AVAILABILITY MANAGEMENT

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the Availability Management Process.

Write a NUMBER in the box beside each statement, based on the following scale:

1	2	3	4	5
Unsure	Strongly Disagree (No)	Disagree	Agree	Strongly Agree (Yes)

How well, in your opinion, does each of the following statements describe Availability Management at Autolab Csi?

	1. Is there a clear understanding by the IT Staff in the organisation of this process?
	2. Is there a regular review of the activities associated with this process?
	3. Are there regular reviews on performance of this process area against documented Key Performance Indicators (KPI's)?

	4. Are the availability targets set by the organisation SMART (Simple, Measurable, Achievable, Realistic, Time bound)?
	5. Are electronic tools used in this process area well utilized?
	6. Are availability statistics published on a regular basis?
	7. Does this process area exchange information with a variety of other process areas?
	8. Does this process area provide information to the Change Management process area, about the impact of proposed changes?
	9. Is it accepted that high service availability is one of the key factors in high customer satisfaction ratings?
	10. Is there sufficient time and budget allowed for training staff in this process area?
	11. Is there a regular review of current infrastructure against required availability, with a view to optimising equipment (lowering cost)?
	12. Can the cost of system failure be calculated (tangible and intangible)?
	13. Has the cost of high systems availability been analysed alongside the business benefits?
	14. Are any accepted periods of service downtime for maintenance known and accepted by the customer/business representative?
	15. There is an accepted procedure for investigating reasons for high unavailability?
	16. Trend analysis is carried out on availability data, to help identify potential future bottlenecks?

AUTOLAB Csi

IT SERVICE MANAGEMENT SURVEY

PART TWELVE – CAPACITY MANAGEMENT

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the Capacity Management Process.

Write a NUMBER in the box beside each statement, based on the following scale:

1	2	3	4	5
Unsure	Strongly Disagree (No)	Disagree	Agree	Strongly Agree (Yes)

How well, in your opinion, does each of the following statements describe Capacity Management at Autolab Csi?

	1. Is there a clear understanding by the IT Staff in the organisation of this process?
	2. Is there a regular review of the activities associated with this process?
	3. Are there regular reviews on performance of this process area against documented Key Performance Indicators (KPI's)?
	4. Are electronic tools used in this process area well utilized?

	5. Attempts are made to influence the behaviour of users to spread the peak load on services into non-peak times?
	6. Is there sufficient time and budget allowed for training staff in this process area?
	7. Threshold alarms in place for individual services that alert staff about approaching maximum capacity limits?
	8. There is a clear understanding of the differences between Business Capacity, Service Capacity and Resource Capacity Management?
	9. Does this process area exchange information with a variety of other process areas?
	10. Key components (resources) are monitored for capacity load (e.g.. Hard disk, memory, CPU, etc.).
	11. Capacity data is constantly analysed to help in resolution of incidents and problems?
	12. Changes to the capacity of the IT environment are handled through a formal Change Management process?
	13. There is continual review of new products and technologies?
	14. Business capacity requirements are known well in advance - due to regular meetings and discussions about new services and changing requirements?
	15. The process is able to simulate the effects on capacity of new services or changes to existing services?
	16. Data relating to capacity is stored in a Capacity database (CDB) - allowing for powerful analysis and investigation?

Name: _____.

Thank you for taking the time to complete this questionnaire and for sharing your views with me.

Please attach your completed questionnaire to an electronic mail and send to: Adrian.Coreejes@sasa.org.za.

SOUTH AFRICAN SUGAR ASSOCIATION

AUTOLAB Csi

BS15000 COMPLIANCE ASSESSMENT

2004

**GUIDELINES FOR QUESTIONNAIRE COMPLETION AND
RETURN**

On the following pages you will find several statements designed to obtain your perceptions of the Autolab Csi IT Service Management processes. The survey is divided into different sections, each of which has common completion instructions. Please read the statements carefully, but try to respond to them as quickly and spontaneously as possible.

Please respond as honestly and frankly as possible. This is essential, as the information obtained from the survey will be used to help improve current service practices at Autolab Csi.

Please return the completed survey via electronic mail to: Adrian.Coreejas@sasa.org.za as soon as possible, but before 10 May 2004.

Thank you for your participation.

AUTOLAB Csi

BS15000 COMPLIANCE ASSESSMENT

PART ONE – INTRODUCTION

This questionnaire is one of a number of self-assessments of important processes, enabling Autolab Csi to establish the extent to which they have adopted the better practice guidance available from OGC (the Office of Government Commerce).

The self-assessment scheme is composed of a simple questionnaire that enables Autolab Csi to ascertain which areas should be addressed next in order to improve the overall process capability. The assessment is based on a generic framework that recognises that there are a number of structural elements that need to be in place for process management and for it to satisfy the overall intent and meet the needs of the customer.

To establish where Autolab Csi stands in relation to the process capability framework, a variable number of questions should be answered. The questions are weighted, i.e. those that are deemed as having a slightly higher significance are considered mandatory for a 'Yes' answer at each level of capability.

These questions are denoted by a 'M' symbol.

AUTOLAB Csi

BS15000 COMPLIANCE ASSESSMENT

PART TWO – SERVICE CONTINUITY

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the Service Continuity Process.

Write either a 'Y' for Yes or a 'N' for No in the box beside each statement.

	Level 1: Pre-requisites	Yes (Y) / No (N)
M	1. Are at least some IT service continuity activities established within the organisation, e.g. business impact assessment, development of recovery plans?	
	2. Have the minimum operational requirements been determined by the business?	
	3. Has the organisation developed a business continuity strategy?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 1.5: Management Intent	
M	4. Has the purpose and benefits of IT service continuity planning been disseminated within the organisation?	
	5. Has the scope of IT service continuity activity been determined?	

	6. Are the necessary resources being made available for the complete business continuity life-cycle stages through a strategic directive?	
	7. Does the organisation have procedures covering the registration of CI's?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 2: Process Capability	
M	8. Have responsibilities for IT service continuity activities been assigned?	
M	9. Have the minimum business critical requirements been determined through business impact analysis?	
	10. Has a risk assessment been conducted?	
	11. Have the ITSC components for business continuity been identified?	
	12. Is there a formal procedure for testing and reviewing contingency plans?	
	13. Is there an IT risk reduction or mitigation programme to implement mechanisms in order to deliver the continuity requirements?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 2.5: Internal Integration	
M	14. Is ITSC management responsible for the completeness of the IT contingency plans?	
	15. Do business continuity planners inform ITSC management of the required service criticality / priority?	
	16. Are ITSC plans regularly reviewed, and the procedures and processes tested and updated where necessary?	
	17. Are the technical activities necessary in order to invoke the contingency measures fully documented, so that IT personnel can undertake recovery actions?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	

	Level 3: Products	
M	18. Are reports concerning risk assessments and risk mitigation measures produced regularly?	
	19. Does ITSC management produce reports on alternative IT contingency planning options that would provide potentially acceptable service levels for cost consideration?	
	20. Are formal Requests for Change issued in order to amend ITSC arrangements?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 3.5: Quality Control	
M	21. Are the standards and other quality criteria for ITSC made explicit and applied?	
M	22. Are the personnel responsible for ITSC activities suitably trained?	
	23. Does the organisation set and review either targets or objectives for ITSC?	
	24. Does the organisation use any tools or proprietary methods for conducting risk assessments and/or keeping the IT contingency plans up-to-date?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 4: Management Information	
	25. Does ITSC management provide information concerning areas and nature of vulnerability to the continuation of business operations?	
	26. Does ITSC management provide information concerning IT contingency planning options?	
M	27. Does ITSC management provide information concerning the IT contingency plans?	
	28. Does ITSC management provide information concerning changes to the IT contingency plans?	
	29. Does ITSC management provide information concerning verification tests of recovery plans?	

	30. Does ITSC management provide information concerning risk mitigation (source and nature of risk, proportion avoided / reduced)?	
M	31. Does ITSC management provide information concerning effectiveness of business continuity strategy?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 4.5: External Integration	
M	32. Are regular meetings held with business continuity planners?	
M	33. Does ITSC management exchange information with Availability Management for risk mitigation?	
M	34. Does ITSC management exchange information with Availability Management for testing availability management components of the plan, including operating level agreements / support contracts?	
M	35. Does ITSC management exchange information with Change Management for consideration of changes that may affect IT contingency plans?	
M	36. Does ITSC management exchange information with Change Management for assessment of proposed changes and actions necessary to avoid / reduce risks?	
	37. Does ITSC management exchange information with Capacity Management for consideration of capacity / storage risks and implications?	
	38. Does ITSC management exchange information with Capacity Management for specific capacity / storage requirements for recovery plan tests?	
	39. Does ITSC exchange information with Service Level Management for cross-references between SLAs and IT contingency plans, and specific service levels during contingency or recovery situations?	
	40. Does ITSC management exchange information with Configuration Management for contingency requirements and final configuration details, ensuring currency of configuration details used?	
	41. Does ITSC management exchange information with Configuration Management for full relationship between components and services?	
	42. Does ITSC management exchange information with Problem Management for reviewing major incidents?	

	43. Does ITSC management exchange information with Problem Management for discussion of problems where cause / resolution is possibly within the domain of ITSC management?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 2 other answer 'Y'	
	Level 5: Customer Interface	
M	44. Do you check with the customer if the activities performed by ITSC management adequately support their business needs?	
M	45. Are you actively monitoring trends in customer satisfaction?	
M	46. Are you actively monitoring trends in customer satisfaction?	
M	47. Are you feeding customer survey information into the service improvement agenda?	
M	48. Are you monitoring the customers value perception of the services provided to them?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions	

AUTOLAB Csi

BS15000 COMPLIANCE ASSESSMENT

PART THREE – SERVICE LEVEL MANAGEMENT

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the Service Level Management Process.

Write either a 'Y' for Yes or a 'N' for No in the box beside each statement.

	Level 1 - Pre-requisites	Yes (Y) / No (N)
M	1. Are at least some service level management (SLM) activities established within the organisation, e.g. service definition, negotiation of SLA's etc?	
	2. Have you identified the customers for your IT services?	
	3. Are service attributes identified?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 1.5 - Management Intent	
M	4. Has the purpose and benefits of service level management been disseminated within the organisation?	
	5. Has the appropriate data on which to base service levels been determined?	

	6. Are there agreed procedures by which Service Level Agreements are negotiated and reviewed?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 2 - Process Capability	
M	7. Have responsibilities for service level management activities been assigned?	
M	8. Has a catalogue of existing services been compiled?	
M	9. Are there mechanisms for monitoring and reviewing existing service levels?	
	10. Are all customer service requests verified?	
	11. Do you have a procedure for establishing SLAs?	
	12. Do you have a mechanism leading to service improvement?	
	13. Do you have a mechanism for scheduling service implementations?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 2.5 - Internal Integration	
M	14. Do you compare service provision with the agreed service levels?	
	15. Do you have a mechanism for keeping your service catalogue in line with new/changed services?	
	16. Do you use service records to provide management and customers with meaningful information on the quality of service?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 3 - Products	

M	17. Are standard service reports produced regularly?	
	18. Are the services and their components explicitly defined and documented?	
	19. Are service components identified as configuration items (CIs)?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 3.5 - Quality Control	
M	20. Are the standards and other quality criteria for ITSC made explicit and applied?	
M	21. Are the personnel responsible for ITSC activities suitably trained?	
	22. Does the organisation use any tools to support SLM?	
	23. Does the organisation use any tools or proprietary methods for conducting risk assessments and/or keeping the IT contingency plans up-to-date?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 4 - Management Information	
M	24. Do you provide management with information concerning service targets and actual performance?	
M	25. Do you provide management with information concerning trends in service level breaches?	
	26. Do you provide management with information concerning standard service offerings?	
	27. Do you provide management with information concerning number of requests for new/changed services?	
	28. Do you provide management with information concerning trends in service level request?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	

	Level 4.5 - External Integration	
M	29. Do you provide management with information concerning incident records?	
	30. Do you provide management with information concerning operational performance of the Service Desk?	
	31. Do you provide management with information concerning user-training needs?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 5 - Customer Interface	
M	32. Do you check with the customer if the activities performed by Service Level Management adequately support their business needs?	
M	33. Do you check with the customer that they are happy with the services provided?	
M	34. Are you actively monitoring trends in customer satisfaction?	
M	35. Are you feeding customer survey information into the service improvement agenda?	
M	36. Are you monitoring the customers value perception of the services provided to them?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions	

AUTOLAB Csi

BS15000 COMPLIANCE ASSESSMENT

PART FOUR – AVAILABILITY MANAGMENT

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the Availability Management Process.

Write either a 'Y' for Yes or a 'N' for No in the box beside each statement.

	Level 1: Pre-requisites	Yes (Y) / No (N)
M	1. Are at least some availability management activities established within the organisation, e.g. monitoring of service components, analysis of service availability?	
	2. Are availability management activities assigned to specific individuals or functional areas?	
	3. Are there mechanisms in place for identifying service (un)availability and Configuration Item failure?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 1.5: Management Intent	
M	4. Has the purpose and benefits of availability management been disseminated within the organisation?	

	5. Is the organisation committed to the monitoring of third party performance in relation to service targets?	
	6. Is your organisation committed to producing an IT service availability plan periodically?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 2: Process Capability	
M	7. Does the organisation have procedures covering the registration of software CIs irrespective of the source (e.g. COTS or in-house development)?	
M	8. Have responsibilities for various release management activities been assigned?	
M	9. Are there operational procedures for acceptance of new software irrespective of its source?	
	10. Are there operational procedures for software distribution?	
	11. Are explicit guidelines available on how to manage, build and test software releases?	
	12. Are there formal procedures for activating software within the organisation?	
	13. Do you have procedures for monitoring the usage of distributed products?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 2 other answers 'Y'	
	Level 2.5: Internal Integration	
M	14. Are service availability detailed requirements reviewed, registered and used to inform the IT availability plan?	
	15. Are service availability details used to identify trends and to forecast future service availability levels?	
	16. Are proposed changes to improve service availability underpinned with service availability trends and forecasts?	
	17. Are all new/changed configuration items designed and tested to meet the availability criteria?	

	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 3: Products	
M	18. Are standard reports on IT service availability produced on a regular basis?	
	19. Is there an IT service availability plan and is it regularly reviewed?	
	20. Are formal Requests for Change issued to request service availability improvement measures?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 3.5: Quality Control	
M	21. Are the standards and other quality criteria made explicit and applied to availability management activities?	
M	22. Are the personnel responsible for availability management activities suitably trained?	
	23. Does the organisation set and review either targets or objectives for Availability Management?	
	24. Does the organisation use suitable tools to support the availability management process?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 4: Management Information	
M	25. Does Availability Management provide information concerning service availability and component failure?	
M	26. Does Availability Management provide information concerning recommendations / proposed changes for improvements in IT service availability?	
	27. Does Availability Management provide information concerning dependency of IT services on the operational status of their components?	
	28. Does Availability Management provide information concerning evaluation of preventative measures?	

	29. Does Availability Management provide information concerning IT service availability plan?	
	30. Does Availability Management provide information concerning change assessments?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 2 other answers 'Y'	
	Level 4.5: External Integration	
M	31. Do you hold regular meetings with interested parties in which ITSC matters are discussed?	
M	32. Does Availability Management exchange information with Problem Management concerning IT service downtime?	
M	33. Does Availability Management exchange information with Problem Management concerning configuration items which are the root cause of service disruption?	
M	34. Does Availability Management exchange information with Problem Management concerning the need for change or preventative maintenance as proactive problem management measures?	
M	35. Does Availability Management exchange information with Capacity Management for ensuring that the availability plan takes into account trends in system usage?	
	36. Does Availability Management exchange information with Change Management concerning proposed change assessments?	
	37. Does Availability Management exchange information with Change Management concerning changes necessary to improve IT service availability?	
	38. Does Availability Management exchange information with the Service Desk concerning end-user complaints of poor IT service availability?	
	39. Does Availability Management exchange information with Configuration Management to obtain data on configuration items and mean time between failures?	
	40. Does Availability Management exchange information with Development to ensure that IT service availability is considered within the development lifecycle?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 2 other answers 'Y'	
	Level 5: Customer Interface	

M	41. Do you check with the customer if the activities performed by Release Management adequately support the business needs?	
M	42. Do you check with the customer that they are happy with the services provided?	
M	43. Are you actively monitoring trends in customer satisfaction?	
M	44. Are you feeding customer survey information into the service improvement agenda?	
M	45. Are you monitoring the customers value perception of the services provided to them?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions	

AUTOLAB Csi

BS15000 COMPLIANCE ASSESSMENT

PART FIVE – FINANCIAL MANAGEMENT

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the Financial Management Process.

Write either a 'Y' for Yes or a 'N' for No in the box beside each statement.

	Level 1: Pre-requisites	Yes (Y) / No (N)
M	1. Are at least some financial management activities established within the organisation, e.g. cost forecasting, expenditure budgeting, service cost management?	
	2. Are financial management activities assigned to specific individuals or functional areas?	
	3. Has the organisation established a budget for IT Service Delivery?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 1.5: Management Intent	
M	4. Have the purpose and benefits of financial management been disseminated within the organisation?	

	5. Has the scope of financial management activities and any applicable pricing policies been determined?	
	6. Have goals for financial management in relation to IT expenditure and charging (IT cost recovery) been made explicit?	
	7. Are there agreed procedures covering the calculation and registration of IT costs?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 2: Process Capability	
M	8. Have responsibilities for various financial management activities been assigned?	
M	9. Are there explicit procedures for procuring goods and services?	
	10. Are there suitable mechanisms for capturing and allocating incurred costs?	
	11. Are there suitable mechanisms for reviewing the capturing and allocating of incurred costs?	
M	12. Are there regular reporting intervals on expenditure?	
	13. Do you have procedures for forecasting unit costs for resources / services?	
	14. Is there a defined process for managing service costs?	
	15. Have you determined a pricing policy?	
	16. Do you have procedures for planning cost recovery?	
	17. Do you have procedures for determining service charges?	
	18. Do you have procedures for reporting on income?	
	19. Do you have procedures for compiling summaries on income versus expenditure?	

	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 3 other answers 'Y'	
	Level 2.5: Internal Integration	
M	20. Does Financial Management have responsibility for the completeness and correctness of the IT service delivery expenditure and income reports?	
	21. Are charging rates, if any, determined and evaluated on the basis of actual cost information and charging policy?	
	22. Is the cost classification and registration in line with the defined formal cost allocation structure?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 3: Products	
M	23. Are standard reports concerning expenditure and income produced on a regular basis?	
	24. Do you produce invoices for your customers, based on the central cost allocation and cost recovery structure?	
	25. Do you establish formal budgets for each customer?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 3.5: Quality Control	
M	26. Are the standards and other quality criteria applicable to financial management activities explicit and applied?	
M	27. Are the personnel responsible for financial management activities suitably trained?	
	28. Does the organisation set and review either targets or objectives for financial management?	
	29. Does the organisation use suitable tools to support the financial management process?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	

	Level 4: Management Information	
M	30. Does Financial Management provide information concerning forecasts of IT service delivery expenditure?	
M	31. Does Financial Management provide information concerning actual costs of providing resources and services against planned costs?	
	32. Does Financial Management provide information concerning financial targets for cost recovery?	
	33. Does Financial Management provide information concerning estimated amount and cost of resources to be provided or 'sold' during the next financial year?	
	34. Does Financial Management provide information concerning actual income by resource, service and customer against planned income?	
	35. Does Financial Management provide information concerning performance of managing service costs against financial target?	
	36. Does Financial Management provide information concerning actions necessary to achieve financial targets?	
	37. Does Financial Management provide information concerning analysis of deviations from plans?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 2 other answers 'Y'	
	Level 4.5: External Integration	
M	38. Do you hold regular meetings with interested parties in which financial management matters are discussed?	
M	39. Does Financial Management exchange information with Capacity Management to determine pricing policy?	
M	40. Does Financial Management exchange information with Capacity Management to forecast unit costs?	
M	41. Does Financial Management exchange information with Capacity Management for planning cost recovery?	
M	42. Does Financial Management exchange information with Capacity Management to determine service charges?	
	43. Does Financial Management exchange information with Change Management in order to manage service costs (review of service levels, prices charged for resources, etc.)?	

	44. Does Financial Management exchange information with Configuration Management concerning procured items?	
	45. Does Financial Management exchange information with Configuration Management to forecast unit cost?	
	46. Does Financial Management exchange information with Configuration Management for capturing and allocating input costs?	
	47. Does Cost Management exchange information with Service Level Management to access service level agreement information for determining service charges?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 2 other answers 'Y'	
	Level 5: Customer Interface	
M	48. Do you check with the customer if the activities performed by financial management adequately support their business needs?	
M	49. Do you check with the customer if they are happy with the services provided?	
M	50. Are you actively monitoring trends in customer satisfaction?	
M	51. Are you feeding customer survey information into the service improvement agenda?	
M	52. Are you monitoring the customers value perception of the services provided to them?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 2 other answer 'Y'	

AUTOLAB Csi

BS15000 COMPLIANCE ASSESSMENT

PART TWO – CAPACITY MANAGEMENT

Please indicate the extent to which each description describes Autolab Csi in your opinion, by allocating a score in accordance with the scale provided.

Please try to be as objective as you can in deciding how accurately each statement describes your view of the Capacity Management Process.

Write either a 'Y' for Yes or a 'N' for No in the box beside each statement.

	Level 1: Pre-requisites	Yes (Y) / No (N)
M	1. Are at least some capacity management activities established within the organisation, e.g. monitoring of usage and performance, capacity planning, sizing of service elements etc?	
	2. Are capacity management activities assigned to specific individuals or functional areas?	
	3. Are the attributes of key service elements identified, e.g. bandwidth, throughput, space, MIPS etc?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 1.5: Management Intent	
M	4. Have the purpose and benefits of capacity management been disseminated within the organisation?	

	5. Has the scope of capacity management been determined?	
	6. Is the organisation committed to measuring service performance?	
	7. Is the organisation committed to producing a Capacity Plan?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 2: Process Capability	
M	8. Have responsibilities for capacity management activities been assigned?	
M	9. Are there mechanisms for analysing system usage and for reporting on performance?	
M	10. Are service elements both defined and sized for new services?	
	11. Is actual performance against agreed service levels recorded?	
	12. Is future demand predicted based on current workloads?	
	13. Do you model systems behaviour under various workloads?	
	14. Is a Capacity Plan produced for the organisation?	
	15. Do you perform market testing of new and emerging technologies?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 2 other answer 'Y'	
	Level 2.5: Internal Integration	
M	16. Do you have a Capacity Management Database (CMDB)?	
	17. Do you analyse usage and performance data in order to optimise resource utilisation?	

	18. Are required service levels and forecasts used to define and size service elements?	
	19. Do you identify variances, trends and deviations from plans in the utilisation of resources?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 3: Products	
M	20. Do you maintain a Capacity Plan?	
	21. Are standard reports concerning performance produced on a regular basis?	
	22. Are standard reports concerning the use and allocation of key resources produced on a regular basis?	
	23. Do you produce forecasts of new workloads and their resource requirements?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 3.5: Quality Control	
M	24. Are the standards and other quality criteria applicable to capacity management activities explicit and applied?	
M	25. Are the personnel responsible for capacity management activities suitably trained?	
	26. Does the organisation set and review either targets or objectives for capacity management?	
	27. Does the organisation have suitable tools to support capacity management activities?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 1 other answer 'Y'	
	Level 4: Management Information	
M	28. Does Capacity Management provide information concerning resource utilisation?	

M	29. Does Capacity Management provide information concerning infrastructure requirements for maintaining service levels?	
	30. Does Capacity Management provide information concerning performance trends?	
	31. Does Capacity Management provide information concerning utilisation of chargeable resources?	
	32. Does Capacity Management provide information concerning details of proposed new workloads?	
	33. Does Capacity Management provide information concerning recommendations based on technology trends / emerging technology?	
	34. Does Capacity Management provide information concerning variances between planned and actual capacity utilisation?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 2 other answer 'Y'	
	Level 4.5: External Integration	
M	35. Do you hold regular meetings with interested parties in which capacity management matters are discussed?	
M	36. Does Capacity Management exchange information with Service Level Management concerning services and workloads to be monitored?	
M	37. Does Capacity Management exchange information with Service Level Management concerning proposed service levels for new workloads?	
	38. Does Capacity Management exchange information with Cost Management concerning chargeable resource utilisation?	
	39. Does Capacity Management exchange information with Configuration Management to obtain details of IT components and workload deployment across them?	
	40. Does Capacity Management exchange information with Configuration Management for details of any changes proposed to existing workloads and to feed back the results of a performance impact analysis?	
	41. Does Capacity Management exchange information with System Development?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions + 2 other answer 'Y'	

	Level 5: Customer Interface	
M	42. Do you check with the customer if the activities performed by Configuration Management adequately support their business needs?	
M	43. Do you check with the customer if they are happy with the services provided?	
M	44. Are you actively monitoring trends in customer satisfaction?	
M	45. Are you feeding customer survey information into the service improvement agenda?	
M	46. Are you monitoring the customers value perception of the services provided to them?	
	Minimum score to achieve this level: 'Y' for all mandatory ('M') questions	

Name: _____.

Thank you for taking the time to complete this questionnaire and for sharing your views with me.

Please attach your completed questionnaire to an electronic mail and send to: Adrian.Coreejes@sasa.org.za.

APPENDIX D – Service Level Agreement

SYSTEMS MAINTENANCE AND SUPPORT AGREEMENT

Concluded between

SOUTH AFRICAN SUGAR ASSOCIATION - AUTOLAB

(established in terms of the Sugar Act, No 9 of 1978)

(herein after referred to as “Autolab”)

and

xxxxxxxxxxxxxx

(registration number xxxxxxxxx)

(herein after referred to as “MGB – {mill area}”)

Autolab and MGB – {mill area} hereby enter into an agreement for Autolab to maintain and support the following computer based application under the terms and conditions stipulated in this agreement:

SASA LIMS Application – Mill Group Board (MGB) Module

1 DEFINITIONS AND INTERPRETATION

1.1 In this agreement, unless the context otherwise indicates:-

1.1.1 the respective parties are designated as set out in brackets after their respective names in the heading to this agreement;

1.1.2 “24/7” means 24 (twenty four) hours a day, 7 (seven) days a week;

- 1.1.3 “Application” means the coded instructions of computer programmes (the source code) and all associated documentation for the SampleManager system developed by LabSystems;
- 1.1.4 “Enhancement” means the updates, being the incremental enhancement of the Application and upgrades, being the new versions that include new major features and/or significantly improved the functionality of the Application;
- 1.1.5 “SASA LIMS Application” means the coded instructions of computer programmes (the source code) and all associated documentation for the LIMS system developed by Autolab for MGB - {mill area};
- 1.1.6 “Commencement Date” means 1 April 2004;
- 1.1.7 “Intellectual Property” means the materials, the design, the know-how and all the available trade marks and related rights in the materials in respect of the SASA LIMS Application and associated documentation, including (without limitation) any patent, copyright, registered design, trademark or other industrial or intellectual property rights in respect of the SASA LIMS Application whether registered or not and any application for any of the aforementioned;
- 1.1.8 “LIMS” means Laboratory Information Management System;
- 1.1.9 “Normal Working Hours” means Monday to Friday, 08H00 to 16H30 and excludes weekends (Saturday and Sunday) and official public holidays;
- 1.1.10 “Source Code” means the codes either in plain English or in a programming language enabling a programmer to access the SASA LIMS Application or any Enhancement thereof;

- 1.1.11 “Standard Terms Agreement” means the terms described in Annexure D of the purchase agreement signed on 31 July 2000;
- 1.1.12 “LabSystems” means Thermo Fast UK Limited trading as LabSystems whose principal place of business is at 1 St George’s Court, Hanover Business Park, Altrincham, Cheshire, WA14 5TP;
- 1.1.13 “this Agreement” means the terms and conditions set out in this Agreement including any amendment hereof;
- 1.1.14 “Technical Components and Internals” means all the server and weighbridge computer hardware and software used to operate the SASA LIMS Application;
- 1.2 Clause headings in this agreement are for convenience only and shall not be taken into account in the interpretation hereof.
- 1.3 In this agreement, words importing a particular gender shall be deemed to include the other gender, words importing natural persons shall be deemed to include corporate bodies and associations of persons, and words importing the singular shall be deemed to include the plural, and vice versa.
- 1.4 If any provision in these definitions is or contains a substantive provision imposing rights and/or obligations on a party, effect shall be given to such provision as if it were a substantive provision in the body of this agreement.
- 1.5 No indulgence which either party may grant to the other shall prejudice or constitute a waiver of the rights of the grantor, who shall not thereby be precluded from exercising any rights against the grantee which may have arisen in the past or might arise in the future.

- 1.6 Neither party may cede any of its rights or delegate or assign any of its obligations in terms of this agreement, or sub-license to any third party without the prior written consent of the other party.
- 1.7 Any reference to an enactment is to that enactment as at the date of signature hereof and as amended or re-enacted from time to time.
- 1.8 When any number of days is prescribed in this agreement, same shall be reckoned exclusively of the first and inclusively of the last day, unless the last day falls on a Saturday, Sunday or public holiday, in which case, the last day shall be the next succeeding day which is not a Saturday, Sunday, or public holiday. The term "business day" shall mean any day other than a Saturday, Sunday or public holiday.
- 1.9 Where any term is defined within the context of any particular clause in this agreement, the term so defined, unless it is clear from the clause in question that the term so defined has limited application to the relevant clause, shall bear the meaning ascribed to it for all purposes in terms of this agreement, notwithstanding that that term has not been defined in this interpretation clause.
- 1.10 Where either party successfully enforces its rights in terms of this agreement, whether through action, application or arbitration, the successful party shall be entitled to claim its costs on an attorney and own client scale from the unsuccessful parties.

2 BASIS OF AGREEMENT

- 2.1 It is recorded that LabSystems is the owner of the SampleManager Application and its Intellectual Property and has licensed its use to the MGB in terms of LabSystems Standard Terms Agreement.

2.2 Autolab has developed the SASA LIMS Application on behalf of the South African sugar industry and is the owner of the Intellectual Property rights in those developments.

3 CALL CENTRE SERVICE

3.1 Autolab shall provide a call centre service whereby it will receive, log and provide feedback on the SASA LIMS Application problem or service requests from the MGB – {mill area} user.

3.2 The Call Centre shall be open for service on normal working days (excluding recognised public holidays) from Monday to Friday from 8:00am to 4:30pm.

3.3 Additional software or emergency support will be offered outside normal working days and hours (including recognised public holidays) through the standby service thereby effectively providing a 24/7 call centre service. The monthly contract fee covers the standby service.

4 APPLICATION MAINTENANCE AND ENHANCEMENTS

4.1 Autolab will ensure the upkeep of the SASA LIMS Application by attending to reported system problems, assisting users and resolving user queries.

4.2 Autolab shall make recommendations regarding improving the SASA LIMS Application as required, to ensure long-term availability and usability of the SASA LIMS Application.

4.3 Autolab shall provide security access requests to third parties (unauthorised on System User) for the SASA LIMS Application on request and authorisation of the Mill Group Board or a duly authorised designate.

- 4.4 The following services are **excluded** from this contract, however, Autolab shall attend to these requests when required and supplied with a valid purchase order number. All costs will be over and above the contract fee.
- 4.4.1 Business and IT consulting;
 - 4.4.2 Help desk time on non-related Autolab services;
 - 4.4.3 Site specific enhancements;
 - 4.4.4 Site specific reports (other than those agreed during the scope development);
 - 4.4.5 Report writer training;
 - 4.4.6 System training (after initial training has been concluded);
 - 4.4.7 Disaster Recovery (DR) assistance (covered as part of Industry DR solution);
 - 4.4.8 Representation at local meetings;
 - 4.4.9 Travel to site (which will be billed for time spent travelling and the distance covered);
- 4.5 All requests for site specific enhancements and amendments post the project sign-off, excluding any agreed outstanding items at the time of sign-off, will be completed on a quotation or a time and materials basis depending on the nature and complexity of the work required.

5 TECHNICAL SUPPORT

- 5.1 Autolab shall fix problems with the SASA LIMS Application and database per the details of clause 6.6. Support calls during week and month change will receive priority attention due to the critical nature of the information being processed. The same will apply to year-end procedures for the aforementioned system.
- 5.2 Autolab shall monitor the performance of the SASA LIMS application and database on a monthly basis and take corrective action as and when necessary. This may involve major re-organisation and/or refreshing of the SASA LIMS

Application and database from time to time or informing end users of the need to perform routine system maintenance from the LIMS menus.

- 5.3 Autolab shall test and install new versions of the SASA LIMS Application as and when required and as and when new updates are released. Should the database upgrade require changes to the SASA LIMS application, this will be undertaken as part of this contract and its fee structure.
- 5.4 Autolab shall develop, maintain, implement and operate an effective change control process that safeguards the SASA LIMS Application and operational processes. Autolab will be responsible for the distribution of the new SASA LIMS Application to the end-user.
- 5.5 The following services are **excluded** from this contract, however. Autolab shall attend to these requests when required and supplied with a valid purchase order number.
- 5.5.1 PC Hardware upgrades;
 - 5.5.2 Warranty claims on hardware not supplied by Autolab;
 - 5.5.3 Printer upgrades;
 - 5.5.4 Operating system upgrades (licensing);
 - 5.5.5 Travel to site (which will be billed for time spent travelling and the distance covered);

6 DELIVERABLES/SERVICE LEVELS

- 6.1 Autolab shall establish and maintain application and technical support services that facilitate optimum up-time and performance of the SASA LIMS Application.
- 6.2 Autolab shall make available sufficiently skilled staff to resolve urgent problems timeously and effectively. A reasonable amount of work outside normal working hours shall be provided to resolve critically urgent issues or to

prevent down time of the SASA LIMS Application during normal working hours.

- 6.3 Autolab shall make available a sufficient number of skilled staff to ensure that it is capable, each month, of carrying out the work required to honour this agreement.
- 6.4 Autolab shall keep reasonably detailed monthly record of services rendered and will make this available on request.
- 6.5 Autolab shall provide the user with a progress report on the status of outstanding service request on a weekly basis.
- 6.6 The following response and completion times (applicable to NORMAL WORKING HOURS) will apply to each priority level as assigned by Autolab:

Priority	Response	Completion
Information	< 48 working hours after being logged in Call Centre	< 120 working days after being logged in Call Centre
Low	< 24 working hours after being logged in Call Centre	< 25 working days after being logged in Call Centre
Medium	< 8 working hours after being logged in Call Centre	< 10 working days after being logged in Call Centre
High	< 4 working hours after being logged in Call Centre	< 2 working days after being logged in Call Centre

- 6.7 Autolab shall have sole control over the LIMS SYSTEM user and Microsoft Windows ADMINISTRATOR user account including passwords. The nominated user of the module will maintain all other users rights and password restrictions for the particular module.

- 6.8 Autolab shall ensure that the LIMS server and the standby weighbridge computer only is installed and regularly updated with anti-virus software. The cost of the anti-virus software shall be included in the annual equivalent of the monthly service fee.
- 6.9 Autolab shall make 1 (one) site visit per calendar year, the cost of which will be included as part of the annual equivalent of the monthly service fee.

7 MBG – {mill area} OBLIGATIONS

- 7.1 All service requests for the SASA LIMS Application shall be reported via Autolab's Call Centre.
- 7.2 The MGB shall notify the Call Centre of any priority ratings that need to be assigned to service requests. Autolab shall verify the priority rating and assign an internal rating in relation to all outstanding service calls currently in the Call Centre. Autolab shall assign both priorities if the user fails to do so.
- 7.3 The MGB shall make its computer infrastructure available to Autolab as and when required. Autolab shall give the MGB as much notice as possible of the need to use their computer infrastructure.
- 7.4 The MGB shall make available to Autolab the necessary operational technical staff as and when required by Autolab provided that Autolab makes a formal request, and reasonable notice is given.
- 7.5 The MGB shall ensure that only Autolab employees or Autolab authorised persons have access to the technical components and internals of the SASA LIMS Application. All Autolab's obligations in terms of this agreement immediately become null and void if and when unauthorised people are allowed access to the SASA LIMS Application or the technical components.

- 7.6 The MGB shall maintain dial-up access into the LIMS server to enable Autolab to provide support to the SASA LIMS Application.
- 7.7 The MGB shall maintain the accuracy of all grower, farm and field information and where so locally agreed, all estimate and/or allocation information.
- 7.8 The MGB shall maintain a link to mill and/or Cane Testing Service network in order to access the SASA LIMS Application.
- 7.9 The MGB shall maintain recognised virus protection software that is updated at least weekly, on all personal computers and/or thin client terminals that will access the SASA LIMS Application via the network or dial-up.
- 7.10 The MGB shall maintain UPS power to all workstations accessing the SASA LIMS application from the MGB's offices to facilitate a controlled shutdown of the workstation in the event of a power failure.
- 7.11 The MGB shall liaise with Autolab so that the MGB can ensure that all machines accessing the SASA LIMS Application conform to the recommended specification level for the version currently in use.

8 PRICE AND PAYMENT TERMS

- 8.1 The MGB shall pay Autolab a monthly fee as described in Annexure 1 for the services indicated in this agreement. This fee will be reviewed through the SASA budgeting process before the end of a year and implemented on the first day of the new season, which is deemed to always be 1 April.
- 8.2 The fee as detailed in said annexure shall remain fixed for the year.

8.3 The MGB shall make payment within 30 (thirty) days from invoice date. Any amount not paid on the due date for payment shall bear interest at the prime overdraft rate of the Standard Bank of South Africa Limited, as amended from time to time, and be calculated from the due date to date of payment.

8.4 Payments shall be made to Autolab by cheque or by electronic transfer into SASA's bank account.

9 DURATION

9.1 Notwithstanding the date of execution hereof, this agreement shall be deemed to have come into force on the Commencement Date and shall continue in force for an indefinite period unless and until it is terminated by either party giving twelve (12) months written notice to terminate same.

10 INTELLECTUAL PROPERTY RIGHTS

10.1 Autolab and the MGB hereby agree that any Intellectual Property rights attaching to the Application shall vest in LabSystems.

10.2 The MGB hereby agree that an Intellectual Property rights attaching to the SASA LIMS Application shall at all times vest in Autolab.

10.3 The MGB shall procure that the Source Codes to the SASA LIMS Application at all times vest in Autolab. The MGB shall not do, or omit to do, any act, the result of which would deprive Autolab of its rights of ownership to and the control of the Source Codes.

11 CONFIDENTIAL INFORMATION

11.1 The MGB hereby agrees that the use of the SASA LIMS Application and any related Intellectual Property shall be used solely in accordance with this

Agreement and that neither they nor any subsequent user of the SASA LIMS Application or its Enhancement shall either during or after the termination of this Agreement disclose any information relating to the SASA LIMS Application, the Intellectual Property attached to any Enhancement thereof to any third party without Autolab's prior written consent.

- 11.2 Autolab hereby agrees to keep all information, garnered through the process of providing technical support to the MGB for the SASA LIMS Application, pertaining to the operations of the MGB, confidential at all times.

12 AUTOLAB'S LIABILITY

- 12.1 Autolab shall not be liable to the MGB for any loss or damage whatsoever or howsoever caused arising directly or indirectly in connection with this agreement, the use of the SASA LIMS Application or any Enhancements to the SASA LIMS Application. The MGB hereby indemnifies and holds Autolab harmless against all and any loss or damage that any party may suffer as a consequence of this agreement.
- 12.2 Autolab shall however take whatever reasonable and practical remedy is needed to the LIMS Application, on report of the error to the Call Centre, to ensure the desired operation of the SASA LIMS Application in terms of the conditions of this agreement, and in so doing reduce the chance of further loss to the MGB and/or any third party.

13 TERMINATION

- 13.1 If either party shall:
- 13.1.1 commit any breach of any of the terms of this agreement or shall fail to observe any of the terms hereof, all of which are acknowledged to be material and shall not remedy any such breach or failure if capable of remedy within 10 (ten) days of written notice thereof

then, and in any such event, the party not in breach may (notwithstanding that it may on a previous occasion have waived its rights hereunder), on notice in writing to the party in breach, cancel this agreement. Such cancellation shall be made without prejudice to any rights, obligations or liabilities that may have accrued hereunder prior to such determination and in particular such determination shall be without prejudice to its rights to claim damages.

13.2 Upon termination of this agreement from whatever cause, the MGB agrees to the following:

13.2.1 that the provision of this agreement with respect to the confidentiality of the SASA LIMS Application survives any such termination;

13.2.2 that within 10 (ten) days of termination the MGB shall certify in writing to Autolab that it has returned to Autolab or destroyed the original and all copies of the SASA LIMS Application, including parts thereof which have been modified or merged with other software.

13.2.3 The rights and remedies of either party set forth in this agreement are not exclusive and are in addition to any other rights and remedies provided by law.

14 EXCLUSIONS/ASSUMPTIONS/VARIATIONS/EXCEPTIONS

14.1 All MGB authorised travel and accommodation costs incurred by Autolab are excluded and shall be invoiced separately by Autolab. The cost associated with the annual site visit is included in the annual equivalent of the monthly service fee.

14.2 ALL MGB authorised time taken to travel by Autolab is excluded and shall be invoiced at the prevailing hourly rates by Autolab. The cost associated with the annual site visit is included in the annual equivalent of the monthly service fee.

14.3 All financial figures stated in this contract are exclusive of VAT

- 14.4 This contract covers labour costs (man hours) only for the services as stipulated in this agreement and excludes any other costs.
- 14.5 Services other than those specifically state in this agreement are excluded
- 14.6 This contract will be reviewed as and when:
- 14.6.1 The system functionality has changed substantially enough, in the view of either party, to warrant a review;
 - 14.6.2 The number of users exceeds 2 (two);
 - 14.6.3 The number of sites extends beyond the normal offices of the MGB;

15 ENTIRE AGREEMENT

- 15.1 This Agreement, together with all Schedules and other attachments referenced herein, constitutes the entire Agreement between the parties and supersedes all proposals, oral and written, between the parties on this subject.

16 ARBITRATION

- 16.1 Any dispute or difference between the parties in regard to any matter arising out of this agreement, including the implementation, interpretation, rectification, the termination or cancellation of this agreement, or any matter arising out of its cancellation, shall be submitted to and decided by arbitration in accordance with the provisions set out below.
- 16.2 Such arbitration shall be held at Durban and in a summary manner on the basis that it shall not be necessary to observe or carry out the strict rules of evidence or the strict formalities or procedures prescribed under the arbitration laws so that there shall be no written pleadings or evidence or formal discovery of documents, except insofar as required by the arbitrator, but otherwise the

arbitration shall be conducted in accordance with the procedures prescribed by the arbitration laws of the Republic of South Africa.

- 16.3 Such arbitration shall be held as soon as practicably possible and with a view to it being completed within 30 (thirty) business days after it is demanded, having regard to any urgency with respect to the matter in issue.
- 16.4 The arbitrator shall be a senior advocate of at least ten years standing.
- 16.5 The parties to the arbitration shall jointly appoint the arbitrator and, should they fail to agree on a joint appointment, the arbitrator shall be appointed by the President for the time being of the KwaZulu Natal Bar Council.
- 16.6 The arbitrator shall decide the matters submitted to him according to what he considers just and equitable in the circumstances and shall have regard to the desire of the parties to dispose of such dispute expeditiously, economically and confidentially.
- 16.7 The decision of the arbitrator pursuant to the foregoing provisions shall be final and binding.
- 16.8 The foregoing arbitration provisions shall continue to be binding on the parties notwithstanding any termination or cancellation of this agreement.
- 16.9 Either party to this agreement shall be entitled to require that the decision of the arbitrator be made an Order of Court in the Republic of South Africa.

17 VARIATION

- 17.1 No agreement to vary, add to or cancel this Agreement will be of any force and effect unless reduced to writing and signed by the parties to this Agreement.

competent to give notice by telefax or e-mail in addition to a written notice being sent in the prescribed manner.

19.3 Any party may by notice to any other party change the physical address chosen as its domicilium citandi et executandi vis-à-vis that party to another physical address in the Republic of South Africa or its telefax number, provided that the change shall become effective vis-à-vis that addressee on the 7th business day from the deemed receipt of the notice by the addressee.

19.4 Any notice to a party:-

19.4.1 sent by prepaid registered post (by airmail if appropriate) in a correctly addressed envelope to it at its domicilium citandi et executandi shall be deemed to have been received 14 (fourteen) days after it is posted (unless the contrary is proved);

19.4.2 delivered by hand to a responsible person during ordinary business hours at its domicilium citandi et executandi shall be deemed to have been received on the day of delivery; or

19.4.3 sent by telefax or e-mail to its chosen telefax number shall be deemed to have been received on the date of despatch (unless the contrary is proved); or

19.4.4 sent by e-mail to its chosen e-mail address shall be deemed to have received on the date of dispatch (unless the contrary is proved).

19.5 Notwithstanding anything to the contrary herein contained a written notice or communication actually received by a party shall be an adequate written notice or communication to it notwithstanding that it was not sent to or delivered at its chosen domicilium citandi et executandi.

SIGNED at _____ on this ____ day of _____ 2003
herein represented by _____ who by his signature warrants
that he is duly authorised hereto.

For: AUTOLAB

As Witness:

1. _____

2. _____

SIGNED at _____ on this _____ day of _____ 2003
herein represented by _____ who by his signature warrants
that he is duly authorised hereto.

For: MGB – {mill area}

As Witness:

1. _____

2. _____