CHAPTER 1: Introduction

1.1   Background

In an attempt to derive business value from the data and information at their disposal and increase their competitiveness, South African (SA) banking institutions have made large investments in Information Technology (IT). As a result of these investments, massive data/information stores have been created and are maintained by banking institutions. These data/information stores range from those that support daily banking operations and customer management, to those that support the analysis of market trends and the activities of competitors.

The unlocking of actionable Business Intelligence (BI) for decision-making from both internal and external information sources is proving to be a real challenge for SA banking institutions, as this requires much more than the implementation of IT solutions to produce intelligence output. Although very few would argue against the use of IT to store, retrieve and support the quantitative analysis of data/information, preliminary research conducted in Europe by Ackerman and Wickens (2001) indicated that few banking institutions have adopted and implemented recognised intelligence processes to produce BI output. As in Europe, there seems to be considerable emphasis on the use of IT solutions to provide BI in SA banking institutions, while possibly not enough emphasis is placed on the use of intelligence processes to provide intelligence output that is both accurate and actionable.

The aim of this research was to determine whether SA Banking institutions apply recognised intelligence processes, or components thereof, while conducting BI assignments. In cases the researcher found that such a process was lacking, the researcher proposed practical steps for dealing with BI assignments.

The following aspects are addressed in this chapter:

- Problem statement.
- The value of the research.
- Method of investigation.
- Clarification of terms (abbreviations and definitions).
- Overview of chapters.

1.2   *Problem statement*

The central research problem was focussed on the question as to whether SA banking institutions apply recognised intelligence processes, or components thereof, while conducting BI assignments.

The central research problem was subdivided into the following sub-problems:

- What is meant by the concept 'Business Intelligence'?
- What is meant by the concept 'intelligence process', and which intelligence processes are available and suited to SA banking institutions?
- How important is the intelligence requirements definition stage of the intelligence process to the conduct of BI, where do intelligence requirements originate, and which approaches could be adopted in dealing with BI requirements?
- How does SA banking institutions deal with BI requirements? Which steps should be considered during the intelligence requirements stage of the BI process?

- Have SA banking institutions implemented a BI collection process, and if so, which types of information sources were available and typically used for collection purposes?
- How important is the analysis stage of the BI process, and what are the key steps in the analysis process?
- Which methods and steps are commonly used by SA banking institutions during the analysis stage?
- Which steps should SA banking institutions consider during the analysis stage of the BI process?
- How do SA banking institutions disseminate BI products, and which approaches and methods are typically used?
- In which formats are BI products typically disseminated?
- Which steps should be considered during the dissemination stage of the BI process?

1.3   Value of research

The term BI is often used to describe IT solutions that are used to support decision-making processes in business. Although the conduct of BI is often associated with the use of IT and/or strategic business planning activities, in essence BI is about the conduct of intelligence, which, if properly done, would provide quality intelligence products to decision makers. The conduct of intelligence involves much more than the provision of information or access to knowledge. As indicated in figure 1.1, intelligence involves a process that utilises relevant information, analytics and knowledge to produce actionable intelligence products within a specific business context.
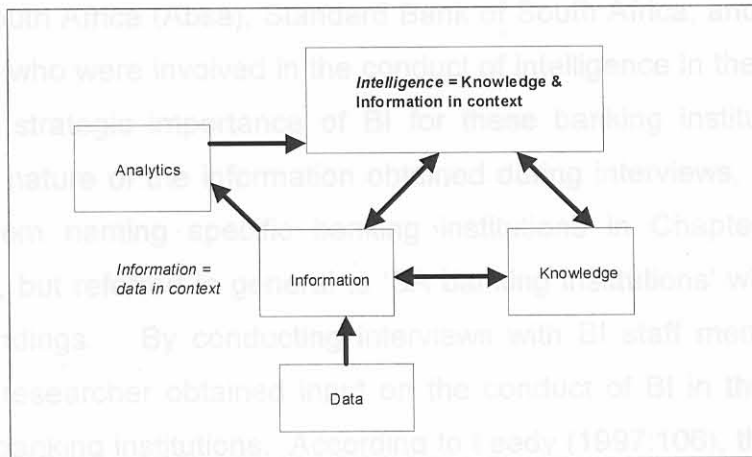
Figure 1.1 Linking intelligence with information, knowledge and analytics

As no specific research on this topic has been done in South Africa (as was confirmed during a search conducted on the Nexus database of the National Research Foundation), this dissertation contributes towards the body of knowledge and fills a gap in the literature on BI. The research is of particular significance for the Information Science discipline as it provides insight into how SA banking institutions process data, information and knowledge in order to produce BI. The findings of this research also provide a framework for SA banking institutions that have no specific processes for the conduct of BI to develop and implement steps suggested for the conduct of intelligence.

1.4   Research methodology

1.4.1 Main research perspective

In this study the main research perspective was of a qualitative nature, since the aim of the research was to describe and explain the BI processes, or components thereof, as applied by SA banking institutions. In this regard

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interviews were conducted with senior BI staff members of the Amalgamated Banks of South Africa (Absa), Standard Bank of South Africa, and First National Bank (FNB) who were involved in the conduct of intelligence in these institutions. Due to the strategic importance of BI for these banking institutions and the confidential nature of the information obtained during interviews, the researcher refrained from naming specific banking institutions in Chapters 2-8 of this dissertation, but referred in general to 'SA banking institutions' when discussing empirical findings.   By conducting interviews with BI staff members of these banks, the researcher obtained input on the conduct of BI in three of the four largest SA banking institutions. According to Leedy (1997:106), the researcher's approach points to a qualitative research approach in that 'Researchers interact with their participants; categories (variables) emerge from the data, leading to 'context-bound' information, patterns and/or the theories that help in explaining the phenomenon'.

This study was also empirical in nature as primary data (numeric and textual) was obtained as input to address the research problem during the interviews conducted with staff at participating banks. Based on the research design map, as discussed by Mouton (2001:161), this study can be classified as a qualitative evaluation research study because the researcher discussed the implementation of BI processes, or the absence thereof, and did not aim to discuss the outcomes/measurement of implemented processes.

1.4.2 Data collection methods

In conducting this study, the first step followed by the researcher was to review existing literature (non-empirical) on the subject of BI, with specific reference to intelligence processes. This provided a theoretical foundation, which was used to define the key concepts and provide background on existing BI approaches and

processes. The literature also provided the foundation for the empirical component of the research.

During the empirical component of the research, emphasis was placed on obtaining the collaboration of BI staff members of SA banking institutions, and interviews were conducted with participants. Due to the confidential nature of the intelligence assignments conducted in SA banking institutions, the institutions that participated in the research did not provide the researcher with any documentary sources.

1.4.3 Subjects of the study

Data was collected from senior staff members who were employed either in managerial or in consulting positions within the BI structures of participating banking institutions.

1.4.4 Assumptions

It was assumed that some banking institutions in SA would not be willing to divulge all the details of their BI processes or disclose limitations and problems experienced with the processes that are currently applied.

1.5   Limitations

It should be noted that this study did not aim to determine the efficiency or effectiveness of the intelligence processes applied in SA banking institutions, nor did the researcher aim to establish why BI was conducted, and on which topics SA banking institutions focused their BI efforts.

1.6   Terminology

1.6.1 Clarification of terms

The following terms that are used throughout the dissertation need to be clarified:

Term	Description
Business Intelligence (BI)	The term BI denotes a process, an organisational function and a product. The process of BI (conduct thereof), which is carried out by individuals or by a formal organisational unit, produces a product named business intelligence (Gilad and Gilad, 1988:1). In this study a clear distinction was made between the process and its output/product by referring to BI processes and BI outputs/products.
Business Intelligence Analyst	A BI staff member that specializes in the analysis, synthesis, interpretation and dissemination of business intelligence.
Business Intelligence Collector	A BI staff member that specializes in the collection of data, information and knowledge for BI assignments.
Business Intelligence Output/Product	Processed information of interest to management about the present and future environment in which the business is/will be operating (Gilad and Gilad, 1988:1).
Competitive intelligence	A process using legal and ethical means for discovering, developing and delivering timely, relevant intelligence needed by decision makers wanting to make their organisation more competitive (Farrell, 2001a).

Term	Description
Customer intelligence	Insights and actionable information about customers' needs and desires (Harvey, 2000).
Intelligence	Information that has been collected, integrated, evaluated, analysed and interpreted (CIA, 2001).
Intelligence analysis	The process of converting information into intelligence products. This includes integrating, evaluating and analysing all available data (CIA, 2001).
Intelligence collection	The process of gathering the information needed to produce intelligence products (CIA, 2001).
Intelligence process/cycle	The process of developing raw information into finished intelligence (CIA, 2001). Intelligence professionals also refer to the execution of the intelligence process as the conduct of intelligence.
Intelligence user	The person, often a decision maker, who has a need for intelligence and, upon receipt of intelligence products, has the option of either utilising or not utilizing the product.
SA banking institution	An institution that is listed by the SA Reserve banking institution as a registered banking institution (locally controlled).

1.6.2 Abbreviations

The following abbreviations were used throughout this dissertation and require further clarification:

Abbreviation	Description
BCG	Boston Consulting Group
BI	Business Intelligence
CEO	Chief Executive Officer

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Abbreviation	Description
CI	Competitive Intelligence
CIA	Central Intelligence Agency of the United States of America
CINT	Customer Intelligence
DFD	Decisions from Data
DOD	Department of Defence of the United States of America
DSS	Decision Support Systems
EIS	Executive Information Systems
ESI	E-Solutions Integrator
IM	Information Management
IT	Information Technology
KIQ	Key Intelligence Question
KIT	Key Intelligence Topic
KM	Knowledge Management
MI	Military Intelligence
MIS	Management Information Systems
MOD	Ministry of Defence of the United Kingdom
OLAP	Online Analytical Processing
OSIF	Open Source Information
SA	South Africa(n)
UK	United Kingdom
USA	United States of America
USN	United States of America Navy
WWII	Second World War

1.7   Chapters of this dissertation

1.7.1   The first two chapters following the introductory chapter of this dissertation focus on clarifying two key concepts, namely 'business intelligence and 'intelligence process'. In these chapters the emphasis is placed on the theory of intelligence and relevant literature was reviewed as follows:

- In Chapter 2 of this dissertation various definitions for the concept of Business Intelligence were analysed and discussed.   The aim of this chapter was to clarify the meaning of the concept and to place it in context with other related terms such as competitive intelligence and customer intelligence, and not to add to the confusion that exists within the business community. A definition for BI was also proposed.

- In Chapter 3, the concept intelligence process was defined. Various recognised intelligence processes/cycles were discussed and the stages/phases of these processes were briefly explained. The CIA intelligence cycle, the Delta competitive intelligence cycle, and a number of other intelligence processes/derivatives of the CIA process were also discussed. A brief discussion of the applicability of military intelligence processes and derivatives thereof in SA banking institutions was also included.

1.7.2   In the following four chapters of this dissertation, the researcher used a generic four stage BI process, as depicted below, to provide a logical structure for this dissertation.
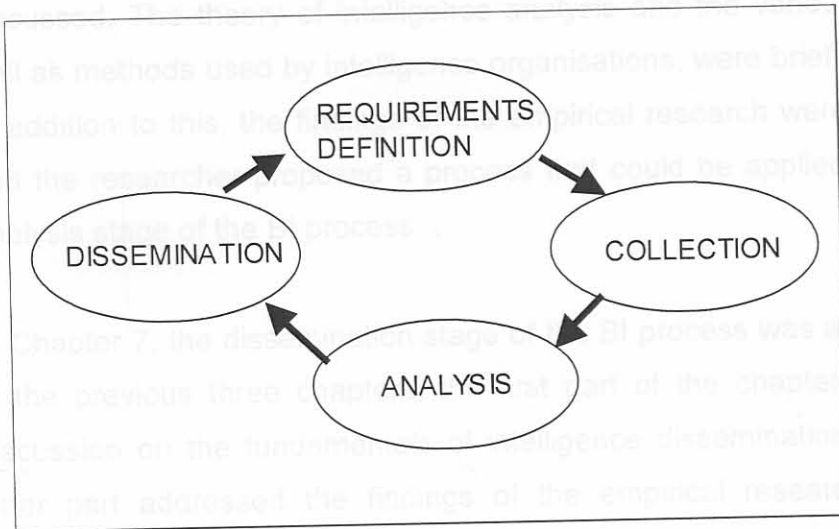
Figure 1.2   A generic intelligence process

One chapter was devoted to each of the four stages of the BI process.

- In the fourth chapter the BI requirements definition stage was discussed in detail. Following a discussion of various theoretical approaches, the approaches used by SA banking institutions were analysed. The researcher also proposed a step-by-step process for use by SA banking institutions when dealing with BI requirements.

- In Chapter 5, the collection stage of the BI process was discussed in detail. Some fundamentals of intelligence collection and the optimal exploitation of intelligence sources were discussed. The findings of the empirical research in SA banking institutions were discussed and the researcher proposed a step-by-step process for the execution of BI collection.

- In the next chapter (Chapter 6), the analysis stage of the BI process was discussed. The theory of intelligence analysis and the various steps, as well as methods used by intelligence organisations, were briefly analysed. In addition to this, the findings of the empirical research were discussed and the researcher proposed a process that could be applied during the analysis stage of the BI process.

- In Chapter 7, the dissemination stage of the BI process was analysed. As in the previous three chapters, the first part of the chapter included a discussion on the fundamentals of intelligence dissemination, whilst the latter part addressed the findings of the empirical research, and the researcher proposed a step-by-step process to deal with BI dissemination.

1.7.3 In the final chapter (Chapter 8), the findings of the research were summarised and evaluated against the original problem statement and the research objectives. In addition to the above, a number of areas in which further research could be conducted were identified.