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The extent to which a financial services institution uses big data: a marketing perspective

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Supervisor: Prof C De Meyer-Heydenrych
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DECLARATION

I, the undersigned, hereby declare that this dissertation entitled, ‘The extent to which a financial services institution uses big data - a marketing perspective’, is my own work and all the sources I have used have been indicated or acknowledged by means of completed references. It is submitted in fulfilment of the requirements for the degree of Master of Commerce at the University of Johannesburg. It has not been submitted before for any degree or examination at this or at any other university.

Cindy Smart

31 October 2015
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ABSTRACT

The financial services industry is known to be a competitive one, and literature suggests that it has an abundance of data, otherwise known as big data (SAS, 2012a). The industry not only makes a large contribution to the national GDP, but also has the most potential to embrace big data in order to have a competitive advantage over the various other industries contributing to the national GDP.

However, in South Africa, this industry is currently perceived not to be leveraging its data optimally, particularly from a marketing perspective, with more than 50% of marketers stating that using data was last on their list of priorities when making decisions (Spenner & Bird, 2012). Literature suggests that South African marketers currently have a very vague formulation of who their customer is. In order for the financial services industry to gain competitive advantage from a marketing perspective, it needs to use data to better profile and understand their customer. This will lead to more personalised relationship with the customer, and will ultimately cement the relationship between the customer and the institution.

The primary objective of this study is therefore to discern the extent to which data is used in a financial services institution from a marketing perspective. First, literature is addressed which introduces an adapted model which was initially developed by Byrom, Bennison, Hernández and Hooper (2001:336), which is used to guide the study. The empirical study is qualitative in nature, using a case study approach in order to meet primary and secondary objectives. A financial services institution was chosen wherein employees working with big data from a marketing perspective were identified through snowball sampling. In-depth personal interviews were conducted with these employees, using a discussion guide which was based on the model mentioned above.

The Morse and Field approach was used to analyse the data whereby when the findings indicated that the institution analysed in this study is using various types of data sources, some more comprehensively than others. The institution identifies the importance of integrating various data sources, however this is not being done to the fullest extent. The institution currently uses big data from a market perspective for better customer profiling. The findings also revealed that the institution was highly dependent on using big data to make decisions at an operational level.
This study assisted the institution to better understand their current big data usage and to identifying the gaps that need to be closed. The study’s findings could be applicable to other institutions within the financial services industry, and with slight adaptation, could be useful to other industries. In order to close the gaps identified, the study discovered that additional human resources are required in the form of analysts with a marketing background, workshops on big data need to be held with current employees to better integrate the institutions’ current data sources as well as embrace new data sources.
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<thead>
<tr>
<th>Terminology</th>
<th>Definition</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>Data can be thought of as observations or “facts on the ground” which become information when communicated, shared or used for a purpose.</td>
<td>Open University (2009)</td>
</tr>
<tr>
<td>Big data</td>
<td>Big data typically refers to the capability to extract value from a collection of data of various volumes, variety and velocity, being structured and unstructured data, and converting it into usable business information, which represents a source for on-going discovery and analysis.</td>
<td>Arthur (2013)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dumbill (2012)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parise, lyer and Vesset (2012:1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A.T. Kearney Analysis (2013)</td>
</tr>
<tr>
<td>Structured data</td>
<td>Structured data is data that fits into neat rows in a traditional database.</td>
<td>Kreitman (2013)</td>
</tr>
<tr>
<td>Unstructured data</td>
<td>Unstructured data comes from information that is not organised or easily interpreted by traditional databases or data models.</td>
<td>Arthur (2013)</td>
</tr>
<tr>
<td>Business intelligence</td>
<td>Business intelligence is getting the right information to the right people at the right time so they can make decisions that ultimately improve enterprise performance.</td>
<td>Bose (2009:156)</td>
</tr>
<tr>
<td>Customer intelligence</td>
<td>Customer intelligence is the collection and analysis of customer data which is focused on understanding customers through historical data, and is used for improving customer relationships.</td>
<td>Plant (2012)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reinartz (2012)</td>
</tr>
<tr>
<td>Analytics</td>
<td>Analytics is the process of obtaining an optimal and realistic decision based on existing data.</td>
<td>Hamel (2011)</td>
</tr>
</tbody>
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CHAPTER 1
STUDY RATIONALE AND OUTLINE

1.1 INTRODUCTION
Data can be thought of as observations or “facts on the ground” which become information when communicated, shared or used for a purpose (Open University, 2009:84). Data on its own cannot create value if it does not lead to insights that a company can use to make decisions. Therefore, data needs to go through a transformation process whereby it becomes information leading to understanding/insight that a company can use to develop strategic initiatives and competitive advantages (Deloitte, 2013; Lee, Lee & Sohn, 2012:1565; SOCAP International, 2013).

In recent years, growth in digital information has been evident, and this has led to new types of data being developed (Foley 2013; Haile, 2013). This abundance of information has required the formulation of the term “big data”, which refers to a company’s capability to extract value from a collection of structured and unstructured data in various forms and to convert it into usable business information. This big data represents a source for companies to discover and analyse their customers on a strategic level (Arthur, 2013; A.T. Kearney Analysis, 2013; Dumbill, 2012; Parise, Iyer & Vesset, 2012:1).

Barton and Court (2012:79) as well as Fox and Do (2013:742) report that big data can transform the way business is conducted by aiding companies to develop a competitive advantage. This is needed specifically in the global financial services industry, which has lost 12% of its revenue as a result of not being able to fully leverage the information it collects from its customers. This lack of adequate information use has led to a lack of insight regarding customers’ behaviour, ultimately leaving companies disconnected from their customers, their main source of revenue (Oracle, 2012a; PWC, 2013a:52).

Big data impacts every function within a company; however, the marketing department stands to gain the most in the usage of big data (Hasan & Dutcher, 2012). Marketers are able to use big data for improved decision-making in terms of
customer acquisition, customer retention and loyalty, customer engagement, market basket analysis and marketing optimisation/performance (Hasan & Dutcher, 2012; Hormozi & Giles, 2004:66; SAS, 2014). Big data will therefore be able to assist marketers to build meaningful relationships with their customers, which have a direct impact on the bottom line (Mackintosh, 2014).

The main aim of the study is therefore to investigate the extent to which a financial services institution in South Africa is using big data from a marketing perspective to better understand its customers, as this is needed for it to gain competitive advantage in a highly competitive industry. The investigation will be aided by using an adapted model (refer to Figure 1.4) of big data which is based on the model developed by Byrom et al. (2001:336) (refer to Figure 1.3). To provide some perspective on the topic a background to this study is provided next.

1.2 BACKGROUND
Correctly utilised information is a source of power for companies due to the fact that it equips managers to make better decisions (Deloitte, 2013; Ferguson & Hlavinka, 2006:295; Ruel, 2008:10). Bose (2009:160) and Russell (2008:27) report however that 90% of a company’s data remains inert, and underutilised. Haile (2013) states that companies using big data will not only add to their triple bottom line, but will also reposition their brands as global leaders and examples of best practice. Deloitte (2013) estimates the size of the big data market to have been about R100 billion in 2012. It is predicted that within the financial services industry alone, big data’s value will appreciate to an estimated R102 billion within the next five years (Duffy, 2014). Companies that have embraced big data are 4% more productive than their peers and have 6% higher profits (McKinsey & Company, 2013a; Skomoroch, 2011).

However, as Liebenson (2012) and Spenner and Bird (2012) assert, companies are not integrating big data within their marketing departments, since more than 50% of marketers have indicated that using data to make decisions was last on their list of priorities. This is concerning as the true value of data is the ability to transform the customer experience, and few companies understand that customer experience is what drives their success (Ferguson & Hlavinka, 2006:295). For this reason,
understanding how to utilise big data from a marketing perspective is vital for companies.

In particular, the financial services industry is struggling in terms of cost of regulations and low interest rates which reduce revenue by 30%-50% (Wallace, P, 2014). In South Africa, the financial services industry is a highly competitive market, and information is seen as the currency of financial services competition (Versace & Massey, 2012). The financial services industry is in the top six industries who are losing a further 12% of revenue as a result of not fully leveraging big data. Examples are unexploited opportunities in sentiment analysis and brand reputation (Oracle, 2012a). According to Pearson and Sundararajan (2013:3), the financial services industry is in the early stages of the exploitation of big data and is yet to fully understand how to leverage this data. The industry considers its weak point – in terms of big data usage – as not having a real-time customer viewpoint of a product and transactions, which could assist it in targeting the right customer at the right time with the right customised service offering (Pearson & Sundararajan, 2013:4).

South Africa is behind many developed countries in terms of big data usage; therefore South African companies need to put big data on their agenda as a key opportunity for competitive advantage (Haile, 2013; Rizzo, 2013). Wright (2013) states that although South African executives are aware of big data and the international trends of its use, they do not understand the positive impact it could have on their companies.

Taking the above into account, the overall objective of this study is to determine the extent to which a financial services institution is using big data and the subsequent marketing insights this yields.

1.3 LITERATURE REVIEW
This section is divided into two parts, the first part will provide insight into the terms of data, information and big data, after which the impact of big data on the financial services industry and marketing will be discussed. The second part of the literature review will discuss the possible impact of big data on marketing intelligence with the aid of an adapted big data model as initially developed by Byrom et al. (2001:336).
1.3.1 Data and information
Data can be thought of as observations or “facts on the ground” which become information when communicated, shared or used for a purpose (Open University, 2009:84). From a marketing perspective, the data cycle is as follows: data when used for a purpose becomes information, information when analysed or manipulated becomes insight/knowledge about the customer which then allows the marketer to create an experience/product or service relevant to the customer. This experience results in the customer converting to the brand and engaging with it, ultimately leading to data being fed back into the company (Mackintosh, 2014; SOCAP International, 2013).

1.3.2 The evolution of data
Data has evolved to what is called big data today. Figure 1.1 represents a model which illustrates the evolution of data.

Figure 1.1: The evolution of data

As can be seen in Figure 1.1, the initial stage of the data evolution began with the data generation and storage phase in the 1970s and 1980s with transactional data. During this stage, millions of transactions were processed daily, stored in a database and analysed, and trends and patterns were searched for over time, which led to the
term ‘data warehousing’ (Castelein, 2012; Parise et al., 2012:1). The transactional data stemmed from one data source, such as electronic-point-of-sale data (EPOS), credit card transactions, direct mail campaigns, or coupon redemption, which was largely operational. The data was used to provide records of the current operational state of a company by providing output of structured data such as market share, the prices customers were paying and what percent of sales were from promotions (Meer, 2013; Pauly, 2012).

In the utilisation and relational stage in the 1990s, transactional data evolved, and a new term, ‘business intelligence’, was generated to designate it. This stage was about getting the right information to the right people at the right time so that they could make decisions that ultimately improved enterprise performance (Bose, 2009:156). The evolution from the relational stage to the third stage encompasses the era called ‘big data’ or the data driven era which is the focus of this study and is discussed in the following section.

1.3.3 Big data
The term ‘big data’ was coined in 2001 by Gartner (Cowen, 2013:49). It refers to the capability to extract value from a collection of data of various volumes, variety and velocity, being structured and unstructured data, and converting it into usable business information which represents a source for ongoing discovery and analysis (Arthur, 2013; A.T. Kearney Analysis, 2013; Dumbill, 2012; Parise et al., 2012:1). SAS (2014) indicates that big data can be used across various departments within a company such as those of marketing, operations and finance, as illustrated in Figure 1.2. From Figure 1.2 it can be seen that within the financial services industry, the marketing department can use big data which is obtained from customers in conjunction with big data from the finance and operational departments to make strategic decisions.
Kreitman (2013) characterises big data as having structured data (data that fits into rows in a traditional database) as well as unstructured data (data that is heterogeneous and variable in nature and comes in many formats; it is information that is not organised or easily interpreted by the traditional database). Structured data sits in neat rows and columns and is typically transactional in nature (Davenport, 2013; Ferguson & Hlavinka, 2006:295). Unstructured data has the ability to reveal customer tendencies and anticipated behaviour, as well as similarities in customer behaviour. This data enables companies to develop closer relationships with their customers, and should have a direct impact on marketing strategies such as customer acquisition, customer retention, customer abandonment and market
basket analysis (Hormozi & Giles, 2004:66; IBM, 2012; Zoldi, 2013). Both structured and unstructured data can be further broken down into internal data (stemming from within the company, like online purchase data, customer complaints and feedback, text messages, email, click-through rates), and external data which is driven by the customer on social media platforms and customers' browsing behaviour (Arthur, 2013; Intel, 2012). Both structured and unstructured data need to have various characteristics in order to be distinguished as big data. These characteristics are known as the seven v's: volume, velocity, variety, veracity, value, visualisation and variability.

With an understanding of the term big data, the next section provides a discussion of big data’s impact on a financial services industry from a marketing perspective by testing a model that has been adapted from Byrom et al. (2001:336).

1.4 BIG DATA’S IMPACT ON MARKETING

Big data can fulfil the marketer’s goals of being able to address not just market segments but individual customers. Marketers can use big data to identify patterns in customer behaviour which help them anticipate customer’s changing needs, and this enables them to react faster than competitors (Logman, 2008:517; Rometty, 2013). Big data has the potential within marketing to better understand customer acquisition, customer retention and loyalty, customer abandonment, customer engagement, market basket analysis and marketing optimisation/performance (Hormozi & Giles, 2004:66; SAS, 2014). Mackintosh (2014) summarises this phenomenon with the equation: big data = relationships = revenue. Markey, Ott and Du Toit (2007:32) state that 81% of executives understand that marketing segmentation through the usage of data is a critical tool for growing profits, but fewer than 25% believe their companies use it effectively.

Byrom et al. (2001:336) developed a model indicating possible types of big data that companies can use (refer to Figure 1.3). Figure 1.3 indicates how the types of big data can be analysed and applied from a company perspective. One downfall of this model is that it does not indicate how big data can be utilised from a marketing perspective within the financial services industry as indicated in Figure 1.2. For this reason, an adapted model, looking at the marketing aspects of big data within the
financial services industry (refer to Figure 1.2) as well as the applications of big data within a company (refer to Figure 1.3), will be utilised for this study, and this can be seen in Figure 1.4.

Figure 1.3: Potential data analytical techniques and applications

<table>
<thead>
<tr>
<th>GEOGRAPHY</th>
<th>DECISION HIERARCHY</th>
<th>ANALYTICAL TECHNIQUES</th>
<th>APPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global</td>
<td>Strategic</td>
<td>Neural Nets</td>
<td>Corporate Planning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data mining</td>
<td>Store portfolio</td>
</tr>
<tr>
<td></td>
<td>Tactical</td>
<td>Propensity modelling</td>
<td>segmentation and</td>
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<tr>
<td></td>
<td></td>
<td>Customer segmentation</td>
<td>planning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Basket analysis</td>
<td>Brand management</td>
</tr>
<tr>
<td>Individual</td>
<td>Operational</td>
<td>Individual profiling</td>
<td>Merchandising</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1-to-1)</td>
<td>Promotional/media</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Customer information</td>
<td>activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>retrieval</td>
<td>Direct marketing</td>
</tr>
</tbody>
</table>

Figure 1.4: The use of big data in the financial service industry from a marketing perspective

Source: Adapted from Byrom et al. (2001:336).
Each aspect of the above model will now be briefly discussed from section 1.4.1 to 1.4.3.

1.4.1 Intelligence from the various data sources
The following discussion tackles how the integration of big data from various sources can be used to gain marketing intelligence about the customer which could be turned into actionable insight within the financial services industry.

This section starts with the first data source, which is transactional data. MasterCard has over 1.9 billion credit cards worldwide which are used to effect over 65 billion transactions per year (Van Rijmenam, 2015). According to Wallace, D (2014), by combining this transactional data with demographic data, the finance industry can vastly improve its direct marketing as well as assist marketers to better understand their customers. Combining these two data sources enables a marketer to create a 360 degree real-time view, based on customer spending.

Intelligence from loyalty card data is the second data source which will be discussed here. According to Dubois (2011), loyalty needs a multi-faceted approach, which can be achieved by combining traditional and new loyalty programs. Companies are currently using digital loyalty cards as a way to encourage customers to interact with the brand. It is the data from this interaction, combined with transactional data, which companies can use to better understand the customer base and how they interact with the brand. This information has direct bearing on what customers go on to purchase. According to Mackintosh (2014), every interaction is an opportunity to collect data and build customer visibility for the brand. Companies use their loyalty programs as a way of collecting data based on customers’ interaction with the brand through social media rather than having the traditional focus of using loyalty cards to increase customer spending through the swiping of the card.

The fourth data source to be discussed is geolocation. According to Marous (2012), geolocation data provides the financial services industry with advantages that few industries have access to. It specifically provides marketers with insight through leveraging precise time geolocation and event-based targeting at point of sale. Ultimately, it provides marketers with the ability to get the right products in front of
the right customer at the right time where they are, and it also provides marketers with the ability to more efficiently integrate online and offline campaigns at the local level (Savitz, 2011).

The fifth data source to be discussed is e-commerce data. Due to the fact that most financial activity by customers occurs online, financial services institutions are increasingly finding themselves in the e-commerce space. Bustos (2014) writes that e-commerce is on the verge of a big shift driven by big data towards a personalised customer journey. According to Kalakota (2011), the changes in customer behaviour and expectations that e-commerce, mobile technologies and social media are causing is significant, and this reinforces the invaluable benefits of combining these data sources to create an experience customised for the customer.

The last data source to be discussed is social media data. DeLoach (2013) mentions that social media can provide companies with insight about customers’ and prospective customers’ preferences, opinions and buying habits. It also provides insight into brand sentiment, which allows companies to identify general attitudes towards their brand/product (Smarty, 2010). Data Science Series (2013) is of the opinion that through combining sentiment data with transactional data, companies will understand how emotions about the brand translate into actual sales, and once again, this illustrates the value behind integrating all data sources for maximum insight. DeLoach (2013) and Levick (2012) state that only 12% of companies using social media believe they are using the insights it provides effectively, and only 14% utilise social media sentiment to measure corporate performance (Russell, 2008:27).

1.4.2 The use of big data in decision-making
Byrom (2001:335) reports that big data has the potential to be used at higher levels of the decision-making hierarchy, and there is therefore a need to move away from operational decision-making and towards strategic decision-making. Big data must be used as a strategic initiative, which is about enhanced personalisation and targeting rather than striving for mass appeal. Bose (2009:155) and IDG Connect (2013) emphasise that what sets companies apart in a highly competitive arena is their ability to make accurate, timely and effective decisions at all levels –
operational, tactical and strategic, however, only 11% of marketers currently use data to make business decisions.

1.4.3 Limitations of big data usage
Possible reasons why companies are not embracing big data and its insights is due to requiring the blend of talent and technology such utilisation demands (Deloitte, 2013). The first challenge is with human resources, and Hauser (2007:40) states that many marketers have not practiced their data mining and statistical skills for years or may never have received training in these areas. A data scientist is required within the company, however due to the job profile of an ideal scientist being quite unique, there is a shortage of these professionals. The second limitation is the lack of technology, and Lee et al. (2012:1565) state that data has not been effectively utilised due to the lack of advanced methods to analyse the large-scale and intricately unstructured data, possibly as a result the high cost implications of such an undertaking. Lastly, big data presents the ethical minefield of privacy and trust, with companies knowing more about customers than ever before, which has led government to implement the Protection of Personal Information act (POPI) to protect the rights of the customer (Fowler, Pitta & Leventhal, 2013:512).

1.5 PROBLEM STATEMENT AND SIGNIFICANCE OF THIS STUDY
Companies that do not invest in big data will not become competitive. The effective implementation of big data will result in companies being 4% more productive, as well as having the potential to have a deeper level of insight into their customer, and this can result in 6% higher profits (McKinsey & Company, 2013a; Nevill, 2012; Rao, 2013).

A problem arises when companies are faced with the challenge of too much data and too little information (Ferguson & Hlavinka, 2006:295; Hair, 2007:303; Lee et al., 2012:1565; Ruel, 2008:10). The literature review amply illustrates this fact, showing that big data has remained inert within companies which are barely scratching the surface of the opportunities inherent in leveraging big data. Some industries are further along than others in terms of big data usage, but opportunities for using big
data in insight-driven decisions exist in almost every industry (Duffy, 2014; Nevill, 2012; Skomoroch, 2011; Wegener & Sinha, 2013).

According to Pearson and Sundarrajan (2013:3), the financial services industry is in the early stages of the exploitation of big data, and has not yet leveraged the benefits of adequately using big data from a marketing perspective. According to SAS (2012a), no industry has more to gain from big data than the financial services industry as it generates the highest volume of data of any industry. This is shown in Figure 1.5, where Gutierrez (2014:10) states that the financial services industry has the highest competitive intensity to adopt big data with a sizable contribution towards the GDP (growth domestic profit). Marous (2012) reports that 62% of financial institutions believe that managing and analysing big data are important to their success but only 29% say that they are currently extracting enough commercial value from it. Only a small proportion (10%-15%) of companies within this industry achieves a high level of big data usage, and this leaves 85% of data unused.
Figure 1.5: Sectors differ in their ability to use big data

Big data remains the greatest untapped marketing asset, specifically within the financial services industry (Duffy, 2014; Ferguson & Hlavinka 2007:316; Hurst, 2013; Marous, 2012; McKinsey & Company, 2013b; Yurcan, 2009:5). The financial services industry is turning to big data for its customer-centric projects, wherein customers and not products or services are the focus (Wagle, 2013). In terms of big data usage, the industry considers its weak point to be the lack of a real-time customer viewpoint of a product and transactions, which could assist it in targeting the right customer at the right time with the right customised service offering (Pearson & Sundarrajan, 2013:4). The financial services industry is among the top six industries who lose 12% of revenue to not fully leveraging big data; using big data for sentiment analysis and brand reputation, for example, have yet to be explored by this industry (Oracle, 2012a). This is concerning as the true value of data is the ability to transform the customer experience, however few companies understand that customer experiences are what drives their success (Ferguson &
Hlavinka, 2006:295). For this reason, understanding how to utilise big data from a marketing perspective becomes important for companies.

Although there are various existing studies which have unpacked the term big data, limited research has been done on big data within a South African context. Existing research is predominantly international, based on the practise of companies functioning in a first world economy where big data is used to inform most leading financial services industries’ marketing practices. Hence this research, based in South Africa, will contribute to the current level of knowledge on the use of big data within this country.

Given the information laid out in the preceding sections of this study, the following problem statement has been formulated:

*Big data has the potential to transform companies, particularly within their marketing departments (Kerwin, 2013), as it provides companies with the opportunity to truly understand their customers, and this in turn results in them being customer-centric, which gives them a competitive advantage (SAS, 2014). However, South African companies are not using data to its full potential, if at all (Harris, 2013). If they continue to be reluctant to adopt data within their marketing departments, they will be left behind with distant relationships with their customers and a loss of competitive advantage in an emerging economy. Globally, the financial services industry has a reputation of embracing the changing structure of data, as well as the capability to adopt big data along with a sizeable contribution towards the national GDP (Gutierrez, 2014:10). However, within South Africa the financial services industry is lagging behind (PWC, 2013b). Testing the adapted Byrom et al. (2001:336) model, (refer to Figure 1.4), will assist the financial services industry to identify areas where data can be utilised and how it can be utilised for better decision-making and marketing strategies.*

Big data enables companies to distinguish themselves in an increasing globalised market (Howarth, 2013). As part of an emerging market, Africa is in a unique position to establish itself as a global hub for big data (McClean, 2013). South Africa in particular is behind in terms of big data usage, however lessons can be learnt from
international best practices, and these can be adopted within a local context through implementing regional strategies that support South African communities (PWC, 2013b; Wronski, 2014).

1.6 RESEARCH OBJECTIVES

Research objectives, according to Wild and Diggines (2013:48), broadly indicate what the research hopes to accomplish. Table 1.1 presents the primary and secondary objectives of this study.

Table 1.1: Primary and secondary research objectives

<table>
<thead>
<tr>
<th>Primary Objective</th>
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<tbody>
<tr>
<td>To investigate the extent to which a financial services institution in South Africa uses big data from a marketing perspective.</td>
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</table>

<table>
<thead>
<tr>
<th>Secondary Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary research objective A: To determine the extent to which big data is used by the financial services institution in business-to-business (B-2-B) marketing.</td>
</tr>
<tr>
<td>Secondary research objective B: To determine the extent to which big data is used by the financial services institution in business-to-consumer (B-2-C) marketing.</td>
</tr>
<tr>
<td>Secondary research objective C: To determine the extent to which the financial services institution uses various data sources.</td>
</tr>
<tr>
<td>Secondary research objective D: To determine the extent to which the financial services institution integrates data sources to better understand the customer.</td>
</tr>
<tr>
<td>Secondary research objective E: To determine the extent to which the financial services institution uses big data for consumer insights.</td>
</tr>
<tr>
<td>Secondary research objective F: To determine the extent to which the financial services institution uses insights for the implementation of marketing activities.</td>
</tr>
<tr>
<td>Secondary research objective G: To determine the extent to which the financial services institution uses big data to be market orientated.</td>
</tr>
<tr>
<td>Secondary research objective H: To determine the extent to which the financial services institution uses big data to make decisions.</td>
</tr>
</tbody>
</table>

1.7 RESEARCH PROPOSITIONS

The research propositions for this study are provided below.

Proposition A: The financial services institution uses big data in its B-2-B marketing.
Proposition B: The financial services institution uses big data in its B-2-C marketing.

Proposition C: The financial services institution uses various data sources.

Proposition D: The financial services institution integrates data sources from the various marketing disciplines to better understand its customers.

Proposition E: The financial services institution uses big data to glean consumer insights.

Proposition F: The financial services institution uses various customer insights within their marketing disciplines/activities.

Proposition G: The financial services institution uses big data from a market orientation.

Proposition H: The financial services institution uses big data to make decisions.

1.8 RESEARCH METHODOLOGY AND DESIGN

An outline has been provided below of the research methodology of this study. It serves as a breakdown, describing the research design, how data for this research is to be collected, as well as an explanation of how the data will be analysed.

1.8.1 Research design

The type of research to be conducted in this study is explorative research which is used to classify problems or opportunities and to acquire insight and understanding rather than it providing conclusive information to determine a course of action (Shiu, Hair, Bush & Ortinau, 2009:61). This research is classified as explorative because it aims to gain insight and a better understanding of what is happening in the South African financial services environment; it will not result in conclusive information, but will rather provide some clarity and a better understanding for financial services institutions.

For the purpose of this research, a specific form of explorative research will be used, namely the case study approach. Cooper and Schindler (2011:182) state that the case study approach is used to perform an intense investigation when the researcher selects a specific company to profile and acquire substantial detail. Such investigations are examples of critical, extreme, or unusual cases. A financial services institution in South Africa has been chosen due to the fact that the industry
is known for gathering a wealth of data from customers. It should be noted that the financial services institution has requested to remain anonymous for this study.

Shiu et al. (2009:172) state that quantitative research places heavy emphasis on using formalised standard questions and predetermined response options in questionnaires or surveys, which are presented to a large number of respondents. Shiu et al. (2009:172) contend that qualitative methods provide researchers with excellent preliminary insights so as to build marketing models, along with a richness of data which can often supplement facts gathered through other data collection methods. This research requires in-depth rich data to uncover details regarding the vague/unexplored topic of the usage of data in a financial services institution within South Africa from a marketing perspective. The insights uncovered from the rich data are to be tested in the form of a model adapted from Byrom et al. (2001:336), as illustrated in Figure 1.4, to determine if and how a financial services institution uses big data for marketing and business strategies.

1.8.2 Data collection methods

Data will mainly be collected by means of in-depth personal interviews. Secondary data, which is information that already exists, will also be used in this study (Wild & Diggines, 2013:74). Incorporating both data sources will assist the researcher in testing the model shown in Figure 1.4.

This research will use secondary data, being information collected for some other problem or issue (Shiu et al., 2009:45), which will consist specifically of international white papers, website articles, published books and conferences, wherein insights have already been generated, and can be used as a benchmark for the financial services industry.

Primary data, which according to Shiu et al. (2009:45) is information collected for a current research problem or opportunity, will as mentioned above, be collected via in-depth personal interviews. This will be discussed in detail in section 1.8.3.
1.8.3 Population and sampling

A population, according to Fox and Bayat (2010:30), comprises the total collection of all the units of analysis about which a researcher aims to reach distinct conclusions. For the purpose of this study, these units of analysis would be all the people within the financial institution working with big data from a marketing perspective.

Cooper and Schindler (2011:182) aver that in a case study approach, participants are invited to relate their experiences. It is important that the participants represent different levels within the same company or different perspectives of the same situation. This research is using sampling elements as employees across various marketing disciplines in various positions (marketing managers, senior brand managers, e-commerce managers, digital managers, brand managers, marketing assistants). The study will also conduct interviews with the I.T. department, who gather and prepare the data (business and systems managers, analysts). Snowball sampling will be used, which according to Shiu et al. (2009:482) involves identifying and qualifying a set of prospective respondents, who can, in turn, help the researcher identify additional people to include in the study. The researcher will start with the employees who attended the conference “Big data reform South Africa transforming marketing” and ask them to recommend other respondents who work with big data. The researcher will ask a screening question first to ensure that all respondents identified through snowball sampling have knowledge pertaining to the research problem at hand.

According to De Vos, Strydom, Fouché and Delport (2005:328), there are no rules for sample size in qualitative research; it is determined by what the researcher wants to know, the purpose of the inquiry, what is at stake, what will be useful, what will have credibility, and what can be done with the available resources. Onwuegbuzie and Leech (2007:116) are of the opinion that sample sizes in qualitative research should not be so small that it is difficult to achieve saturation, and at the same time it should not be so large that it is difficult to undertake a deep case-oriented analysis, hence a suggested sample size is between six and 12 people. Given that there are limited human resources using data as it is still a newly implemented company tool, and due to the case study approach utilised, a sample size of eight people will be interviewed.
As indicated previously, data will be collected through semi-structured in-depth personal interviews. According to Cooper and Schindler (2011:168) and Wild and Diggines (2013:117), this kind of interview takes place in the respondent’s office through a prearranged formal appointment. It starts out with a few specific questions and then follows the individual’s tangents of thoughts with interviewer prompts. The discussion guide (refer to Appendix A) will be based on the same themes mentioned in the model (refer to Figure 1.4). Due to the fact that the research employs a case study approach, the discussion guide needs flexibility and it is for this reason that the interview will be conducted by the researcher, who has a thorough understanding of the topic at hand. The respondents will be required to answer a screening question, which will serve as protocol in order to ensure that the respondents have the appropriate knowledge in order to answer the questions that follow. Each interview will be recorded and transcribed (refer to Appendix B), and sent back to the respondents for confirmation that nothing transcribed was misinterpreted.

1.8.4 Ethics
Fox and Bayat (2010:148) state that ethical research requires informed consent from those who are being interviewed. This study will have to take privacy into consideration; hence a confidentiality agreement (refer to Appendix C) has been signed by both parties. This will guarantee the participants confidentiality, and will assure them that the researcher understands the sensitivity around big data and it forming an essential part of a company’s competitive advantage, and thus information will only be made available to people directly involved in the project. The financial services institution selected for the study has agreed to participate provided that they remain anonymous and their brand name does not appear in the study. For this reason, the study will only make reference to “the financial services institution”.

1.9 DATA ANALYSIS
Upon the completion of the interviews, the data will be analysed, which according to De Vos, Strydom, Fouché and Delport (2002:339) is the process of bringing order, structure and meaning to the mass of collected data. The data will be analysed through content analysis, which according to Shiu et al. (2009:191) and Malhotra and Birks (2007:251) requires the researcher to implement a systematic procedure of taking individual responses and categorising them into larger themed categories or
patterns, simplifying according to rules derived from existing theory. Hence the discussion guide will be structured around themes from the model (refer to Figure 1.4), and ultimately the findings from the study will be incorporated into the groups indicated in the model. These are: type of data, type of insight, type of marketing activity, and levels of decision-making, which were defined in the literature review.

De Vos (1998:338) list five approaches to data analysis, namely those of Lincoln and Guba (1985), Huberman and Miles (1994), Morse and Field (1996), Marshall and Rossman (1989) and Tesch (1990). The approach chosen for this study is that of Morse and Field, due to the fact that it involves a process of fitting data together, making the invisible obvious. As a result of big data having so many facets and due to the fact that various sections within the marketing department are being questioned, this study requires a solid process of fitting the data together.

1.9.1 The Morse and Field approach

The Morse and Field approach consists of four cognitive processes which are integral to all qualitative analysis methods. These are: comprehending, synthesising, theorising and recontextualising (De Vos, 1998:340-341; Morse, 1994:25). Comprehending involves the researcher transcribing, checking, correcting and coding to ensure he/she has enough data to be able to write a complete, detailed, coherent and rich description (Galli, 2009:73). It occurs when the researcher is able to identify stories that are pertinent to the topic and patterns of experience and predict their outcome (De Vos, 1998:341). Synthesising entails doing inter-participant analysis and comparison analysis, which enables the researcher to synthesise, interpret, link, see relationships, speculate and verify findings (Elo & Kyngäs, 2007:112). Theorising includes the process of fitting of alternative models to the data, as well as the process of constructing alternative explanations and holding these against the data until the best fit that explains the data is arrived at (Galli, 2009:74). The last cognitive process is recontextualising, which is the development of the emerging theory so that the theory is applicable to other settings and to other populations (Galli, 2009:74; Morse, 1994:34). The approach suggests that the researcher should be empowered to discover any new/surprising dimensions by generating categories and testing them. The researcher will follow each of these 4 cognitive approaches in analysing the qualitative data collected.
1.9.2 Quality assessment of the research

According to Marshall and Rossman (1995), all research must respond to canons that is questions that stand as criteria against which the trustworthiness of the project can be evaluated; Lincoln and Guba (1985) refer to these questions as establishing the project’s truth value (cited in De Vos, Strydom, Fouché and Delport, 2011:351). The truth value can be measured according to the following constructs: credibility/authenticity, transferability, dependability and confirmability (De Vos et al., 2011:420; Elo, Kääriäinen, Kanste, Pölkki, Utriainen & Kyngäs, 2014:2).

Credibility (involving the researcher asking him/herself whether there is a match between research participants’ views and the researcher’s reconstruction and representation of them), can be achieved through a triangulation of observers (Elo et al., 2014:2). Triangulation can be achieved through the combining of data from a variety of observers to yield a more complete picture of the setting. The need for triangulation is the reason why the researcher is interviewing a variety of people within the various marketing disciplines to get a holistic view.

Transferability refers to whether the findings of the research can be transferred from a specific situation or case to another. To test this, the researcher can refer back to the original theoretical framework and see how the data collection and analysis will be guided by models (De Vos et al., 2011:420; Elo et al., 2014:2). For this study, the researcher will test a model that has been created by the researcher, which is based on the model by Byrom et al. (2001:336) (refer to Figure 1.4).

Dependability is based on whether the research process is logical, well documented and audited (De Vos et al., 2011:420; Elo et al., 2014:2). Lastly, confirmability of a study depends on whether the findings of the study could be confirmed by another. The research findings and report will be sent back to the company for approval that the data captured corresponds with the findings presented in the report (Elo et al., 2014:2).
1.10 OUTLINE OF THE STUDY

This section covers the planned flow of the research in terms of what will be discussed in each chapter (refer to Table 1.2).

Table 1.2: Outline of the study

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 1: Study rational and outline</td>
<td>Background to the study, problem statement, research objectives and propositions, research methodology and design</td>
</tr>
<tr>
<td>Chapter 2: The South African finance services industry</td>
<td>Financial services industry from a global and South African perspective</td>
</tr>
<tr>
<td>Chapter 3: Big data within the financial services industry</td>
<td>Big data from a marketing perspective, with the big data model introduced and explained in detail</td>
</tr>
<tr>
<td>Chapter 4: Research methodology and design</td>
<td>Qualitative research using a case study approach and the Morse and Field approach to analyse</td>
</tr>
<tr>
<td>Chapter 5: Empirical research results</td>
<td>Results from the in-depth interviews</td>
</tr>
<tr>
<td>Chapter 6: Conclusions and recommendations</td>
<td>Conclusions and recommendations provided for each research objective</td>
</tr>
</tbody>
</table>

1.11 CONCLUSION

This chapter provides an overall summary of the study by presenting the research objectives, problem statements, literature and the research methodology to be used. The study will use in-depth interviews to answer the secondary objectives, which in turn will address the primary objective of the study, namely the extent to which a financial services institution in South Africa uses big data from a marketing perspective.

Chapter 2 provides a detailed explanation of the South African financial services industry as it currently stands, along with the challenges presented by regulations it is faced with. The chapter then provides a thorough breakdown of the structure and character of the industry, and concludes with a scan of some current trends that are evident in the industry.
CHAPTER 2
THE SOUTH AFRICAN FINANCIAL SERVICES INDUSTRY

2.1 INTRODUCTION
The purpose of this chapter is to provide a background of the South African financial services industry, beginning with a definition of the term ‘financial services’. This is followed by a brief history of the industry from a global perspective and where it is today. The chapter will then provide a detailed classification of the South African financial services industry, which includes banking and insurance, and this is followed by a brief description of the key players in South Africa within each of these classifications. This chapter concludes with a description of key trends within the financial services industry.

2.2 THE FINANCIAL SERVICES INDUSTRY
Africa Institute of Financial Markets and Risk Management (AIFMRM) defines the term ‘financial services’ as “the economic activities which fundamentally encompass the access to funding/finance or the creation of wealth for consumption purposes or further economic productivity” (AIFMRM, 2014:19).

It is stated by AIFMRM (2014:19) that the financial services industry consists of “all entities that manage money in some way or form”. AIFMRM (2014:19) and WTO (2014) proceed to explain the financial services industry as one that is typically made up of the following institutions: “banks, insurers, asset managers, stock brokerages, credit unions, micro-financers and any other private or public sector companies capable of extending credit or other financing activities”. A brief history of the financial services industry will now be given, which will provide an understanding of the progress of the industry, both globally and locally, as well as where it is today.

2.2.1 A brief history of the financial services industry
Banking was initially practiced in the ancient empires of Babylon, Assyria and Judea (among others), with the first modern bank being the Bank of Venice, which was founded in 1157 (Schepers, 2014). The insurance sector began in 1751 when Benjamin Franklin formed the Philadelphia Contributionship, which was the first company to provide fire insurance (Allstate, 2014). Prior to the 1980s, the financial
services industry was seen as an environment where banks provided cheque accounts, overdrafts and loans, along with savings accounts for savers, building societies provided mortgages for home buyers, and insurance companies provided insurance products (Open University, 2014). This changed in the 1990s with the implementation of the Gramm-Leach Bliley Act, which allows banks to offer investment, commercial banking and insurance services (Global Edge, 2014). Over the years, through acquisitions and consolidations, the financial service industry has now become a one-stop-shop, with the ability to provide mortgages, as well as insurance and loans, all under one company (Oracle, 2011:2). This is illustrated by banks and insurance companies merging, which has resulted in the term ‘bancassurance’ being coined (PWC, 2014f:20).

According to Economy Watch (2010), the financial services industry is seen as volatile. It has seen events like the “Great Depression” in 1929, “Black Monday” in 1987, the “Asian Financial Crises” in the 1990s, “Stock Market Turndown” in 2002, and the “Sub-prime crises” in 2007. The most recent hit to the industry was the “European Debt Crisis” in 2012, which has left the economy in recovery mode (PWC, 2012:3; PWC, 2014a:3). Regulations have been put in place to avoid such crises which will be discussed in section 2.2.3.

A brief history regarding the South African financial services industry specifically will now be presented. The first bank in South Africa opened its doors in Cape Town on 23 April 1793, and was known as Lombaard Bank (SARB, 2014d). In 1921, it was decided that a governing bank, called the South African Reserve Bank, would be opened, which is now the oldest bank in Africa (SARB, 2014d). According to AIFMRM (2014:21) and Young (2013), the South African financial services industry is highly regarded internationally because of its strong regulatory and legal framework. The Southern African financial services industry is among the best in the world, and is rated 3rd out of 144 countries in terms of competitiveness in the category of financial market development, and has over R6 trillion in assets (AIFMRM, 2014:31; BASA, 2013).
2.2.2 Contribution to the global economy

It is important to note the vast size of the financial services industry, ranking the highest in South Africa in terms of earnings (R204 billion in June 2010) (AIFMRM, 2014:19). Referring to Figure 2.1, it is evident that the contribution of the financial services industry (otherwise known as the finance, real estate and business services sector) to the Gross Domestic Production (GDP) has steadily increased from 10% in 1960 to 15.1% in 1993, while in 2012, the same industry contributed 21.1% to the total nominal South African GDP (AIFMRM, 2014:19; PWC, 2014c:8).

Figure 2.1: Percentage sector contribution to South Africa's GDP from 1993 to 2012

![Nominal Quarterly GDP - Percentage Sector Contribution](image)

Source: Adapted from AIFMRM (2014:20).

Over time, the industry has evolved in terms of having more complex regulations to avoid the crises mentioned earlier, and these regulations (of both the banking and insurance industry) in the South African context will be discussed below.
2.2.3 Regulations

PWC (2014d:4) states that regulation is seen as the biggest policy threat for growth in the financial services industry. Referring to Table 2.1, it is clear that there are numerous regulations imbedded in the financial services industry, the objectives of which are to increase access to financial services for the previously excluded majority and avoid financial crises.

Table 2.1: Summary of the financial services industry’s regulations

<table>
<thead>
<tr>
<th>Act</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Banks Act</td>
<td>“To provide for the regulation and supervision of the business of public companies taking deposits from the public; and to provide for matters connected therewith” SAICA (2015).</td>
</tr>
<tr>
<td>National Payment Systems Act</td>
<td>“To provide for the management, administration, operation, regulation and supervision of payment, clearing and settlement systems in the Republic of South Africa; and to provide for connected matters” SAFLII (2014:2).</td>
</tr>
<tr>
<td>Financial Intelligence Centre Act (FICA)</td>
<td>“To combat money laundering, which is the abuse of financial systems in order to hide and/or disguise the proceeds of crime” FNB (2015).</td>
</tr>
<tr>
<td>Financial Advisory &amp; Intermediary Services Act</td>
<td>&quot;Affects the way in which a Financial Services Provider (FSP) conducts business and interacts with consumers, and guides consumers in their daily dealings with their chosen product provider” SARB (2014d).</td>
</tr>
<tr>
<td>The National Credit Act</td>
<td>“To promote and advance the social and economic welfare of South Africans, promote a fair, transparent, competitive, sustainable, responsible, efficient, effective and accessible credit market and industry, and to protect consumers” SARB (2014b).</td>
</tr>
<tr>
<td>The Consumer Protection Act</td>
<td>“Promote fairness, openness and good business practices between suppliers of goods and services and Consumers of these goods and services” SARB (2014c).</td>
</tr>
<tr>
<td>Home Loan and Mortgage Disclosure Act</td>
<td>“To promote fair lending practices, which require disclosure by financial institutions of information regarding the provision of home loans; to establish an Office of Disclosure; and to provide for matters connected therewith” DHS (2014).</td>
</tr>
</tbody>
</table>
Table 2.1: Summary of the financial services industry’s regulations (continued)

<table>
<thead>
<tr>
<th>Act</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitions Act</td>
<td>“The purpose of the Competition Act is to promote and maintain competition in the Republic” Competition Tribunal (2014).</td>
</tr>
<tr>
<td>Micro-Insurance Regulation Act</td>
<td>“The purpose is to lower the barriers of entry to encourage broader participation in this market, introduce formalised insurance requirements for the currently informal providers as well as to enhance consumer confidence and protection within this market segment” Actuarial Society of South Africa (2014).</td>
</tr>
<tr>
<td>National Health Insurance (NHI)</td>
<td>“Ensures that everyone has access to appropriate, efficient and quality health services” HST (2014).</td>
</tr>
<tr>
<td>Treating Customers Fairly (TCF)</td>
<td>“To raise standards in the way firms carry on their business by introducing changes that will benefit consumers and increase their confidence in the financial services industry” TCFinfo (2014).</td>
</tr>
</tbody>
</table>


There are two newly implemented regulations that will impact the financial services industry, these being Basel III and Twin Peaks, which will briefly be discussed below.

Basel III presents tougher capital standards by requiring banks to hold more capital of higher quality and have enough liquid assets to cover the overflow of funds (PWC, 2013a; SARB, 2014a). It will be implemented in a staggered fashion between 2015 and 2019 (BASA, 2013:8). According to AIFMRM (2014:37) South Africa was one of seven countries to implement the Basel III in January 2013, with the focus of enhancing the stability and safety of financial systems as a whole.

The objective of Twin Peaks, according to PWC (2013a:62), is to equip institutions to deal with system-wide macro prudential risks. Its aims to separate the market conduct regulations (which determine the way firms conduct business, design, price
of the products and treating the customer) from the prudential regulation (regulation of solvency and liquidity) (KPMG, 2014c:28). Banks are weary of implementing it due to the fact that it impacts on their capacity for innovation, as the act requires that all new products be approved by the Market Conductor Regulator (AIFMRM, 2014:37). According to PWC (2014c:11), regulations are hindering innovation, however over 60% of CEOs within the financial services industry believe regulations are helping improve quality of product and service delivery.

With an understanding of the history of the financial services industry and its important contribution to the South African economy, this chapter will now provide a detailed description of how the industry can be classified.

2.3 CLASSIFICATION OF THE FINANCIAL SERVICES INDUSTRY

AIFMRM (2014:21) suggests that there are various ways such a vast industry can be broken down. Referring to Figure 2.2, the first way is through using Standard Industrial Classification (SIC) codes to break the financial services industry down into the following divisions:

- Banking (banks, mutual banks, credit unions, microfinance industry etc.)
- Insurance (long-term and short-term insurers)
- Investment and related services (exchanges, security broking companies and asset management)
The WTO (2014) breaks down the financial services industry into insurance and insurance-related services, and secondly, banking and other financial services. These two sectors are interconnected such that ‘bancassurance’ has evolved and it is now common for an insurer to partner with a bank to distribute products to banking clients (PWC, 2014f:20). For the purpose of this study, the financial services industry will be broken down into its banking and insurance sectors. This is due to the fact that these two sectors are known to have big data, which will be elaborated on in the next section.
2.4 THE BANKING SECTOR IN SOUTH AFRICA

The South African banking system is a well-developed and effectively regulated sector, comprising a central bank and governing body, namely the South African Reserve Bank, who are responsible for overseeing a few large, financially strong banks and investment institutions, as well as a number of smaller banks (Young, 2013).

According to AIFMRM (2014:31), in South Africa there are currently 10 locally controlled banks, six foreign controlled banks, 13 branches of foreign banks, 41 foreign bank representatives, three mutual banks and two banks in liquidation (Islamic Bank Limited and Regal Treasury Private Bank Limited), which brings the total to 75 banks. In 2011, there were 17 locally controlled banks, showing that the overall number of banks have diminished in recent years (BASA, 2013). The decrease could be attributed to the financial crisis where companies were forced to undergo mergers and acquisitions to create economies of scale.

The banking industry in South Africa is divided into 2 tiers, firstly Tier 1 known as capital (consists of shareholders equity and disclosed reserves) and secondly Tier 2 known as being supplementary capital (comprising of undisclosed reserves) (EY, 2015). Tier 1 banks make up approximately 90% of the total industry assets, whereas Tier 2 banks represent a sizeable share of the market, however Tier 1 outperforms Tier 2 on earnings (EY, 2015). It is for this reason that this study will incorporate both Tier 1 and Tier 2 banks.

AIFMRM (2014:30) contends that the banking sector can be further segmented into retail banking, business (commercial) banking, corporate banking, private banking, investment banking, mutual banking and development banking. There are currently four banks that dominate the South African banking sector that play across all the before mentioned segments. These are: ABSA Bank Limited, FirstRand Bank Limited, Nedbank Limited and The Standard Bank of South Africa Limited. According to BASA (2013), total banking assets amounted to R3.5 trillion at the end of June 2012, with the four major banks representing 84% of this total. Collectively, these banks represented an increase of 13.1% in headline earnings to R27.8 billion in 2014 (PWC, 2014b:2). The ranking of these banks according to pre-tax profits are
shown in Table 2.2, illustrating that these dominant players rank not only as the top four banks in South Africa, but on the African continent in its entirety.

Table 2.2: Top 10 African banks by pre-tax profits

<table>
<thead>
<tr>
<th>RANK</th>
<th>BANK</th>
<th>COUNTRY</th>
<th>CONSILDATION</th>
<th>PRE-TAX PROFITS $m</th>
<th>PRE-TAX PROFITS % CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Standard Bank Group (Stanbank)</td>
<td>South Africa</td>
<td>BHC</td>
<td>3260.2</td>
<td>16.02</td>
</tr>
<tr>
<td>2.</td>
<td>FirstRand</td>
<td>South Africa</td>
<td>BHC</td>
<td>2113.50</td>
<td>-8.05</td>
</tr>
<tr>
<td>3.</td>
<td>Absa Group</td>
<td>South Africa</td>
<td>FOS</td>
<td>1425.50</td>
<td>-18.31</td>
</tr>
<tr>
<td>4.</td>
<td>Nedbank Group</td>
<td>South Africa</td>
<td>BHC</td>
<td>1323.0</td>
<td>17.33</td>
</tr>
<tr>
<td>5.</td>
<td>National Bank of Egypt</td>
<td>Egypt</td>
<td>BHC</td>
<td>1011.6</td>
<td>44.48</td>
</tr>
<tr>
<td>6.</td>
<td>Attijariwafa Bank</td>
<td>Morocco</td>
<td>BHC</td>
<td>969.1</td>
<td>4.59</td>
</tr>
<tr>
<td>7.</td>
<td>Guaranty Trust Bank</td>
<td>Nigeria</td>
<td>BHC</td>
<td>663.50</td>
<td>69.16</td>
</tr>
<tr>
<td>8.</td>
<td>Zenity Bank</td>
<td>Nigeria</td>
<td>BHC</td>
<td>657.6</td>
<td>71.46</td>
</tr>
<tr>
<td>9.</td>
<td>Groupe Banques Populaire</td>
<td>Morocco</td>
<td>BHC</td>
<td>579.1</td>
<td>8.04</td>
</tr>
<tr>
<td>10.</td>
<td>First Bank Nigeria</td>
<td>Nigeria</td>
<td>BHC</td>
<td>563.4</td>
<td>69.57</td>
</tr>
</tbody>
</table>

Source: Adapted from Wallace, P (2014).

Due to the fact that this study is only being conducted in South Africa, this research will only focus on the South African banks in Table 2.2. The following section provides a brief background of the four major players in the South African banking industry based on their market share (pre-tax profits) from highest to lowest. Subsequently, the section will assess the emerging bank Capitec as well as the stokvel system. The reason for the discussion of Capitec is they have recently shown promising growth that could be considered a challenge to the top four. Stokvel needs to be discussed because there is a significant trend of people using informal banking sectors in the South African market.
2.4.1 Standard Bank

The Standard Bank Group started in the Eastern Cape in 1862 as Standard Bank of British South Africa Limited (Standard Bank, 2014a). Today, the group has over 48,000 staff members operating in 20 countries on the African continent. According to Standard Bank (2014b), the group is listed on the JSE stock exchange as well as the Namibian stock exchange, and the largest bank in the world, ICBC, has 20.1% shares in it.

According to Standard Bank (2014c:2) the group headline earnings as of June 2014 increased by 2% to R8 306 million. Personal and business banking increased by 13% to R4 193 million, and corporate and investment banking delivered earnings of R3 853 showing an increase of 1%. Return on equity (ROE) has decreased from 13.8% to 12.7% whilst currently having the interim dividend of 259 cents (Standard Bank, 2014c:5).

2.4.2 FirstRand Bank (FNB - First National Bank)

First National Bank, which started in 1838 in Grahamstown under the name of Easter Province Bank, is the oldest bank in South Africa (FNB, 2014). Today it trades as a division of FirstRand Bank Limited. FirstRand was listed on the JSE in 1998 as having the following divisions: FNB, Wesbank and RMB (FNB, 2014). FNB operates beyond the borders of South Africa, and is found in Botswana, Lesotho, Namibia, Swaziland, Tanzania and Zambia (FNB, 2014).

FirstRand produced good results in June 2014, with earnings of R18 663 million showing an increase of 21% year on year (FirstRand, 2014:5). FNB had an 18% growth in normalised earnings with a 51% share within FirstRand; similarly RMB showed 22% growth in normalised earnings with a 29% share of FirstRand and Wesbank showed 2% growth in normalised earnings with a 15% share of the group FirstRand (FirstRand, 2014:5). FNB produced a return on equity (ROE) of 37.4% with an interim dividend of 174 cents.

2.4.3 ABSA (Amalgamated Banks of South Africa)

ABSA entered the African market in 1964 through acquiring the Colonial Bank, the Angola Egyptian Bank and the National Bank of South Africa to form Barclays Bank
Dominion, Colonial and overseas (ABSA, 2014a). In 1991, the Amalgamated Banks of South Africa Limited was created through the unification of Allied, United, Sage, Volkskas, and Bankorp (including Trustbank, Senbank and Bankfin) (ABSA, 2014a). In 2005, Barclays Bank acquired 55% of the bank and today, ABSA Bank Limited is a wholly-owned subsidiary of the Barclays Africa Group. ABSA serves the markets of South Africa and Namibia, along with 14 other countries (ABSA, 2014b).

ABSA experienced an increase of 2% in its headline earnings for 2014, with the retail and banking earnings growing by 6% to R3.3 billion. Corporate and investment headline earnings increased by 6% to R1.2 billion (ABSA, 2014c:51). ABSA Bank Limited declared an interim and special dividend of 1231.7 cents and a return on equity (ROE) sitting at 15.6% in 2014 (ABSA, 2014c:51).

2.4.4 Nedbank

Nedbank started in 1831 and was then known as the Cape of Good Hope Bank (Nedbank, 2014a). Today it is seen as a top 40 company and has had its shares listed on the JSE since 1969. It has also been listed on the Namibian stock exchange since 2007 (Nedbank, 2014b). Old Mutual is Nedbank’s biggest investor, having 52% of its shares. Nedbank has subsidiary banks which are located in Namibia, Swaziland, Malawi, Mozambique, Lesotho, Zimbabwe, Isle of Man, Guernsey and Jersey (Nedbank, 2014b).

For the year 2014, the Nedbank group showed headline earnings of R45 999 million which revealed an increase of 17.5%. It showed interim dividend shares of 460 cents and had an increase of 16.5% for return on equity (ROE) (Nedbank, 2014c).

2.4.5 Capitec Bank

Capitec Bank has become an important player in the market due to its financial figures showing an increase in market share from 7.9% to 10.8% in 2012. This is a result of their client base increasing drastically by 26% to 4.7 million active users in 2012 (Ashton, 2013). Although the bank is not acknowledged as one of the four main players, Capitec is a significant new entrant into the market. It was established on 1 March 2001, listed on the JSE in 2002, and has approximately 9491 employees (Capitec, 2014a). Capitec bank is owned by a range of shareholders, the biggest one
being PSG Group Limited (Capitec, 2014b). In 2014, Capitec had headline earnings of R2017 million with 663 cents dividend per share (Capitec, 2014b).

2.4.6 Informal banking sector
The South African banking environment is unique in that it has a sizable informal saving sector comprising stokvels. Ultimately, the banking sector would want to attract the consumers who make use of stokvels to increase their market share. To do this, they have to better understand them as a niche market entering into the formal financial sector. According to Ensor (2014), stokvels are estimated at R25 billion, consisting of 8.6 million members with approximately 421 000 stokvels, which represents 23% of the adult population. Currently there is no formal relationship established between banking and stokvels, but with the size of the stokvels, it is definitely a player the banking sector needs to familiarise itself with.

With a comprehensive understanding of the banking sector, a discussion on the other half of the financial service industry will now be presented.

2.5 THE INSURANCE SECTOR IN SOUTH AFRICA
Due to the fact that the definition of a financial services institution consists of banking and insurance, the discussion will continue by providing a detailed background of the insurance part of the financial services industry.

AIFMRM (2014:44) defines insurance as “a form of risk management, which is available to all who wish to transfer the cost of a potential loss onto another entity, in exchange for a periodic monetary contribution, commonly referred to as an insurance premium”. South Africa is the leading insurance market in Africa and ranks as one of the world’s top 20 markets for both life and non-life insurance (AIFMRM, 2014:47). South Africa accounts for 73% of the continent’s income in the insurance industry (KMPG, 2013:62). According to TNS (2013), the number of people entering into insurance has increased from 6.2 million to 7.8 million in 2013 both stemming from asset insurance and life insurance, with new business growing by 12% to R5.3 billion in 2013 (PWC, 2014f:2).
AIFMRM (2014:47) and Young (2013) state that the insurance sector is governed by the Financial Services Board (FSB) which is the statutory independent organisation constituted to regulate and supervise the non-banking financial services industry. The Financial Services Board (FSB) has 193 registered insurers in South Africa, 87 of which are long-term insurers and 106 being short-term insurers. These two groups of insurance providers will be discussed below.

2.5.1 Long-term insurance
Long-term insurance, according to AIFMRM (2014:46), deals with life insurance, annuities and pension products. PWC (2014f:5) states that on the JSE, the all index share in terms of insurance was 20% higher in 2013 than it was in 2012. This growth is attributed towards the industry having the capability to manage market risk exposures within a predetermined range (PWC, 2014f:5). Referring to Table 2.3, it is evident in the market share that there are four key players within the long-term insurance sector. These are Liberty Group Limited, MMI Group Limited, Old Mutual Life Assurance Company, and Sanlam Life Insurance Limited. These four key players have R1.7 trillion worth of combined assets and had combined group IFRS earnings of R24.4 billion in 2013 (KPMG, 2014c:82).

2.5.2 Short-term insurance
Short-term insurance, according to AIFMRM (2014:46), deals with general types of insurance/risk management such as vehicle, property, casualty and liability insurance. The short-term insurance industry has experienced a decrease of 12% in earnings and the claims ratio (claims payable versus income) has increased for the third consecutive year to 68% in 2013. This is a result of a tough 2013, which brought adverse weather conditions such as hail storms in Gauteng and floods in Limpopo and the Western Cape (PWC, 2014f:3,11). There is fierce competition in the short-term insurance sector and the four major players are Santam (22%), Mutual and Federal (11%), Hollard (9%), Zurich Insurance Company (8%) and OUTsurance Holdings (6%) (Clark, 2012, PWC, 2014c) (refer to Table 2.3).
<table>
<thead>
<tr>
<th>Company</th>
<th>Market Share</th>
<th>Company</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santam</td>
<td>23%</td>
<td>Old Mutual Life Assurance</td>
<td>32%</td>
</tr>
<tr>
<td>Mutual &amp; Federal</td>
<td>11%</td>
<td>Sanlam Life Insurance Limited</td>
<td>24%</td>
</tr>
<tr>
<td>Hollard</td>
<td>8%</td>
<td>Liberty Group Limited</td>
<td>18%</td>
</tr>
<tr>
<td>OUTsurance</td>
<td>7%</td>
<td>MMI Group Limited</td>
<td>18%</td>
</tr>
<tr>
<td>Guardrisk</td>
<td>6%</td>
<td>Other</td>
<td>8%</td>
</tr>
<tr>
<td>Telesure</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zurich</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABSA</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>29%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Adapted from KPMG (2014c:58,82).

With an understanding of the long-term and short-term insurance markets, a discussion on the key industry players from the insurance sector will follow.

2.5.3 Old Mutual (Mutual and Federal)

Old Mutual was founded in 1845 as Mutual Life Association of the Cape of Good Hope (Old Mutual, 2014a). Old Mutual Group South Africa has two subsidiary companies which are Nedbank and Mutual and Federal (Old Mutual, 2014b). According to AIFMRM (2014:48), Old Mutual holds 55% of Nedbank and its South African operations include Nedgroup Life, NGIB, and Mutual & Federal Insurance. Old Mutual had a group return of equity of 13.2% in 2014 with an increase of 16% in earnings per share from 2013 (Old Mutual, 2014c). The group offers insurance in Africa, Europe, America and Asia, with over 16 million customers and approximately 57000 employees (Old Mutual, 2014d).

2.5.4 Liberty Holdings (Liberty Group)

Liberty Holdings was founded in 1957 by Sir Donald Gordan (Liberty, 2014a). AIFMRM (2014:48) reports that Liberty Holdings is the holding company for Liberty Group, which is owned by Standard Bank. Liberty has been around for 60 years and
boasts a presence in 14 African countries with assets of R566 billion and it employs over 6000 people (Liberty, 2014a, Liberty 2014b). Liberty joined the JSE in 1962, listing assets exceeding R1 million, and 35 years after opening it is ranked as the 5th largest company in South Africa in terms of capitalisation on the JSE (Liberty, 2014c).

2.5.5 MMI Holdings (Momentum)
In 2010, Metropolitan and Momentum merged to form MMI Holdings, which is in a strategic relationship with FirstRand Group (AIFMRM, 2014:48). Momentum is South Africa’s third-largest life insurance group with a 122-year history (Momentum, 2014). MMI Holdings was established on the JSE in 2010 having an embedded value of R39 675 million in 2014, with approximately 14 000 employees in South Africa (MMI Holdings, 2014a, MMI Holdings, 2014b:17). The MMI Holdings Group operates in 12 African countries as well as several international countries (MMI Holdings, 2014b:7).

2.5.6 Santam and Sanlam
Santam opened its doors in 1918 under the name of South African National Trust and Assurance Company Limited (Santam, 2014a). Within months, the South African Life Assurance Company (Sanlam) was established as a subsidiary of Santam, having the focus of life assurance, leaving Santam with a focus on short-term insurance (Santam, 2014a). Santam is known as South Africa’s leading insurance company for non-life insurance with a market share of 22% (AIFMRM, 2014:48). In 2014, Santam has had an interim dividend of 262 cents with a net insurance income of R850 million (Santam, 2014b). Sanlam has shifted its focus over the years from life insurance to providing a broader range of financial products and services and has a presence in more than 10 African countries, India, Malaysia, Philippines, UK/Ireland, US, Switzerland and Australia (Sanlam, 2014a). Sanlam Group’s discretionary capital was R3.2 billion by the end of October 2014, with new business increasing by 17%.

It can be seen from the preceding sections that companies in the financial services industry are moving towards the bancassurance model. This chapter will continue with a discussion on observable trends within the industry.
2.6 TRENDS IN THE FINANCIAL SERVICES INDUSTRY

McKinsey and Company (2013c:2) state that the turmoil that disrupted financial markets in 2008 forced banks around the globe to shift their focus from long-term growth to short-term survival. PWC (2014d:4) states that CEOs within the financial services industry see technology, demographic changes, and shifts in global economic power as the trends that are most likely to transform the industry in the next five years.

2.6.1 Technology

The financial services industry should use technology investments in four ways: creating more seamless customer experience across delivery channels, improving security to upgrade data collection, preventing cyber threats, and improving analysis for regulatory and growth initiatives (Deloitte, 2014:15). Technology is clearly impacting the financial services industry from various angles.

2.6.2 Demographic changes

South Africa has a population of 51.7 billion people, with a significant percentage being under the age of 30. This, along with fertility and mortality rates converging, is contributing to a disrupted traditional family model (KPMG, 2013:6). The financial services industry needs to meet the demands of a younger wealthier youth market that requires smarter market segmentation and product delivery (PWC, 2014e:6). The financial services industry has to understand the consumer who’s needs are constantly changing, whereby according to Stokes (2009) consumers are forced to change their savings behaviour in response to market shocks, life expectancy, poor financial decisions and significant shifts in the pension industry. Due to the rise of the black middle class, consumers are now buying houses, cars, assets and insurance protection, and this rise has resulted in the number of customers entering the insurance industry to increase from 6.2 million in 2012 to 7.8 million in 2013 (Bizcommunity, 2013). There is therefore an overall increase in those who are formally serviced financially from 72% to 79% (Bizcommunity, 2013). This statistic leaves 21% of the population financially excluded, meaning they have no bank account or access to formal financial services, leaving a huge untapped market.
Change in society and relationship patterns means that there will be changes in consumer preferences, which has direct bearing on how financial services need to reach out to their customers and relate to them (Cano, 2010). Customer expectations will increase and they will begin to demand more from their banks and insurers (KPMG, 2014a:6). Clark (2012) states that 120 million new customers are expected to enter into the system over the next three to five years, all of whom are looking to establish relationships with their financial providers.

2.6.3 Globalisation
There is a rise in interconnectivity amongst emerging markets (PWC, 2013a). This is evident with the South African financial services industry looking for growth through geographic diversification by targeting Africa more broadly, through new acquisitions, joint ventures or bancassurance arrangements (KPMG, 2013:61; PWC, 2012:23; PWC, 2014d:18). In achieving growth in this manner, the South African financial services industry is exposed to significantly more risks than in the past, hence the need for regulations. South Africa will however remain the entry point for any company wishing to venture into the African continent (National Treasury, 2011:3).

2.7 CONCLUSION
The chapter commenced with a definition of the financial services industry followed by a brief scan of its history. It then continued to provide a detailed explanation of how the industry can be classified, and for the purposes of this research, the financial services industry will be broken down into the banking segment and the insurance segment. Key players within each of these segments were briefly introduced, and this was followed by an examination of key industry trends.

One of the trends highlighted was the use of technology by the financial services industry to better leverage its data. In doing this they will better understand their customer in order to create a customised customer experience to shift the negative perception of the industry not being trustworthy. The use of big data from a marketing perspective will be discussed in Chapter 3.
CHAPTER 3
BIG DATA WITHIN THE FINANCIAL SERVICES INDUSTRY

3.1 INTRODUCTION
In Chapter 2, the challenges that face the financial services industry were summarised. Big data can assist companies to overcome some of these challenges. This chapter will commence by discussing the term ‘data’ and how it has evolved to the term ‘big data’. It will then examine usage of big data and the competitive advantage it can provide, and then look at how it can be used from a marketing perspective. This is followed by an in-depth discussion of how big data can be used in the financial services industry. Thereafter, a model adapted from Byrom et al. (2001:336) showing the various aspects of big data, will be introduced and considered in detail. The chapter will conclude with a brief discussion of successful implementation of big data.

3.2 DATA AND INFORMATION
The foundational theme of this research is that data has value when it is transformed into insights that companies can use to make decisions. There are various steps data has to go through in order to be used to generate insights and information. These are illustrated in Figure 3.1.

Data can be thought of as observations or “facts on the ground” which become information when communicated, shared or used for a purpose (Open University, 2009:84), from a marketing perspective, these “facts on the ground” comprise data that is collected from the customer. Data itself contains no meaning, whereas information is data with meaning (Hey, 2004:12). Information is data with labels or definitions, or data that has structure. The next transition is from information to knowledge, which is processed information for a purpose. It is information that is collected, combined and organised to create meaning, for example, insights about the customer (Eisenberg, 2012). Companies want to take actions and base decisions on knowledge, and not just information and data. Finally, over time, knowledge becomes wisdom, which is knowledge without thinking (Eisenberg, 2012). Wisdom from a marketing perspective is wisdom about the customer, the ability ultimately to
be able to predict the customer’s behaviour, which provides the company with a competitive advantage.

**Figure 3.1: Knowledge management pyramid**

![Knowledge Management Pyramid](image)

Source: Adapted from Rajpathak and Narsingpurkar (2013:5).

The model in Figure 3.1 explains the transformation of data into wisdom, however it must be emphasised that data itself has evolved over the years. A detailed discussion will follow on the evolution of data and the definition of big data and its characteristics.

### 3.2.1 The evolution of data

It is stated by Dennis, Marsland and Cockett (2001:368) that since the 1980s, there has been increasing recognition that data is a fundamental contributor to a company’s success. Figure 3.2 presents the evolution of data, which was looked at briefly in Chapter 1 of this study, however it will be explored in more detail here.
As can be seen in Figure 3.2, the initial stage of the data evolution began with the data generation and storage phase in the 1970s and 1980s with transactional data. During this stage, millions of transactions were processed daily, stored in a database and analysed, and trends and patterns were searched for over time, which led to the term ‘data warehousing’ (Castelein, 2012; Parise et al., 2012:1). The transactional data stemmed from one data source, such as electronic-point-of-sale data (EPOS), credit card transactions, direct mail campaigns, or coupon redemption, which was largely operational. The data was used to provide records of the current operational state of a company by providing output of structured data such as market share, the prices customers were paying and what percent of sales from deals (Meer, 2013; Pauly, 2012).

In the 1990s, in what is known as the utilisation and relational stage, transactional data evolved into a new term called ‘business intelligence’. This stage was about getting the right information to the right people at the right time so they could make decisions which ultimately improved enterprise performance (Bose, 2009:156). The evolution from the relational stage to the third stage encompasses the era called big data or the data-driven era. Big data will be discussed in the following section.
3.2.2 Definition of big data

The term called big data was first coined in 2001 by Gartner (Cowen, 2013:49). It refers to the capability to extract value from a collection of data in various volumes, variety and velocity being structured and unstructured data, and converting it into usable business information which represents a source for ongoing discovery and analysis (Arthur 2013; A.T. Kearney Analysis, 2013; Dumbill, 2012; Parise et al., 2012:1).

Referring back to Figure 3.1, it is important to note that big data has changed the dynamics of the model developed by Rajpathak and Narsingpurkar (2013:5). Big data has caused an overload of information, and we need to be able to somehow extract value from it. Big data is resulting in the movement from information-to-knowledge to be far more challenging than the movement from data-to-information (Weinberger, 2010). The term big data will now be discussed in detail, beginning with a discussion of its characteristics.

There are seven characteristics of big data, which will be listed here:

- **Volume**: About 2.5 exabytes of data are created each day and the number is doubling every forty months. The amount of data has increased in average by 86% in the last two years and by 2020, companies will have fifty times more than they had in 2011 (McAfee & Brynjolfsson, 2012:62; Oracle, 2012a; Van Rijmenam, 2013a).

- **Velocity**: Velocity is the speed at which the data is created, stored, analysed and rendered useful in making real-time decisions (Van Rijmenam, 2013a).

- **Variety**: Variety implies that the sources of data are diverse and do not fall into neat relational structures. Data is pulled from multiple internal and external sources (Dumbill, 2012; Goyal, Hatami & Herrin, 2012).

- **Veracity**: This term refers to need to identify and manage the uncertainties caused by the unreliability of some types of data (ARC, 2013).

- **Value**: Value is a characteristic of data that reaches the relevant decision makers on time so that high quality decisions informed by relevant data are executed when they are relevant (Hunter, 2013:59).
• **Visualisation**: Visualisation is the ability to produce graphs that can include many variables of data while still remaining understandable and readable (Van Rijmenam, 2013a).

• **Variability**: speaks to the concept that the meaning of data is constantly and rapidly changing. This characteristic differs from variety, which involves there being a lot of different sources of data (Van Rijmenam, 2013a).

Another aspect of big data to keep in mind is that it can be structured or unstructured, and that these two forms can be combined, which will be explained below.

**3.2.3 Structured vs. unstructured big data**

Kreitman (2013) states that big data consists of both structured data (data that fits into rows in a traditional database) and unstructured data (which is heterogeneous and variable in nature and comes in many formats; it is information that is not organised or easily interpreted by the traditional database). This is shown in Figure 3.3. Structured data is typically transactional in nature (Davenport, 2013; Ferguson & Hlavinka, 2006:295). This is something that was seen in traditional databases in the early history of data, such as demographic profiles and website browsing activities. Structured data is organised into records identified by unique keys/codes, and each record has the same number of attributes recorded in the same order (Oracle, 2012b:5).

Big data generated the need for a new term, ‘unstructured data’. Unstructured data has the ability to reveal customer tendencies and anticipated behaviour, as well as uncover similarities in customer behaviour and lifestyle information. Examples of unstructured data are call centre logs, customer correspondence/feedback, blogs, news feeds, photos, videos, and social media interactions (Marr, 2014). Unstructured data can be further broken down into internal data, which stems from within the company, for example, online purchase data, customer complaints and feedback, text messages, email, click-through rates, and external data which is driven by the customer on social media platforms, as well as customers’ browsing behaviour (Arthur, 2013; Intel, 2012).
3.2.4 Integrating structured and unstructured data

It is stated by Oracle (2012b:1) that technologies which enable businesses to marry structured and unstructured data present a significant opportunity for improving business insight for financial services. According to Biederman (2013), due to the fact that data resides with multiple parties, collaboration is one of the keys to big data management. Kerwin (2013) notes that the most value out of big data stems from finding points of overlap which give you a more complete view. By blending different types of research data, the information collected becomes more useful (Breur, 2011:96). The blending of this data will be continuously addressed in the discussion around the big data model further on in this research.
Having defined and explained big data in detail, the study will continue by discussing big data’s global impact versus its local impact, and will also identify how big data has impacted various industries, particularly the financial services industry.

### 3.3 BIG DATA USAGE: GLOBAL VS. AFRICA

McKinsey Global Institute (2011:4) asserts that big data has reached every sector in the global economy. The U.S. has an estimated 200 terabytes of stored data, and Europe only has the storage capacity to accommodate 70% of that amount. It is stated by Martin (2014) that while the U.S. and Europe are surging ahead in terms of big data investment, the Middle East and Africa are not far behind. McKinsey Global Institute (2011:4) state that there is great potential for leveraging big data in developing economies. Developed countries are all seeking out trends such as emerging technologies, features, applications and practices of big data; a popular trend in 2015 is in the advancement in the collection and usage of big data in developing countries (De Luna, 2015). This is due to the fact that developing countries are dealing with social challenges greater than those of developed countries. These are challenges into which big data could provide insight. Jacobs (2014) reveals that while African businesses are tapping into big data, the region has lagged behind the global trend with 40% of African companies still in the planning stages of big data utilisation, as opposed to the global average of 51%.

Looking at South Africa specifically, 38% of corporations across all industries have achieved a competitive advantage through using big data (Seetheram, 2014). Companies operating in South Africa and Africa need to approach big data differently to the rest of the world because the technological and infrastructural environment is different from that of other continents (Haile, 2013). Despite these challenges, South Africa has tremendous potential and even has advantages over first world countries, particularly within small businesses sector, which seem to be adopting big data far quicker than medium-sized firms (Jacobs, 2014).

Even though South Africa’s technological offering is not yet at the level of that of more developed countries, it is evolving and growing. It is stated by Rizzo (2013) that South African consumers are more connected to the web than ever before, with increased broadband and mobile operations, as well as reduced connectivity prices.
South African internet users have increased in number from 6.8 million in 2010 to 8.5 million in 2011, showing a 25% growth in one year (Rizzo, 2013). Developing countries have the advantage of using the lessons learnt by the U.S. and Europe, who have already explored big data and undergone the trial and error that distils the most effective approach (De Luna, 2015). Below is a list of the many ways that data can lead to a competitive advantage. According to HP (2013), Jacobs (2014), Kotler and Keller (2012:167), PWC (2013b), SAS (2014), Sexsmith (2013) and Yurcan (2009), big data can:

- identify threats, risk management, regulatory management and prevent fraud,
- gain customer insight,
- help the company exercise good governance, risk and legal compliance,
- optimise customer engagement and services,
- optimise pricing,
- improve operational efficiency and reduce costs,
- dramatically increase operating margins,
- more easily identify and process lead generation prospects,
- reduce overall company risk,
- better support management decisions,
- build customer relationships,
- innovate product design through product bundling,
- optimise distribution channels,
- lead to better customer service,
- identify and develop new products and services,
- enhance customer experience with more personalised information,
- guide more relevant marketing campaigns,
- deepen customer loyalty,
- identify prospective customers,
- reactivate dormant customers to purchase,
- yield more robust customer profiles from improved customer segmentation,
- guide more effective front-office engagement,
- provide a 360 degree view of the customer,
• provide understanding of customer intent and loyalty and boost customer retention,
• guide sentiment analysis and brand reputation,
• meet delivery preferences, and
• enhance time-to-market with new offerings.

It is stated by SOCAP International (2013) that technology innovation will continue to fuel the growth of big data. Mayer-Schonberger and Cukier (2013:5) report that data is now seen as a raw material of business: a vital economic input used to create a new form of economic value. To compete in a consumer-powered economy, it is increasingly important for the financial services industry to leverage their information assets (data) to gain understanding of markets, customers, channels, products, suppliers and employees (IBM, 2013). The next section will cover how big data can be used from a marketing perspective, specifically.

3.4 BIG DATA: A MARKETING PERSPECTIVE
The role of the marketing department within a company has changed drastically because of big data (Kerwin, 2013). Big data is impacting the business and consumer environment, in that it changes the ways in which marketers must work, as well as the skills a marketer requires (Ntsubane, 2014:39). It is stated by Kumar, Chattaraman, Neghina, Skiera, Aksoy, Buoye, and Henseler (2013:330) that the biggest challenge for marketers is establishing their credibility in the boardroom, however making use of data can shift the perception of marketing as a cost centre to that of a value-generating centre. Hochhauser (2004:228) asserts that sophisticated marketers across all industries find that strategically applied data results in better return on investment, upgraded customer service, improved retention, and expanded market share.

3.4.1 A customer-centric approach
Companies need to become customer-centric rather than transaction-focused, as it will provide the best opportunity for them to thrive (SAS, 2014). Strydom (2014:6) defines a customer-centric organisation is one which creates meaningful value for customers, leading to sustained competitive advantage for both short and long-term organisational success. According to PWC (2013a:52), being a customer-centric
organisation requires anticipating customers’ needs, responding to enquiries and problems in real time, and pricing only for the services a customer values. Customer-centric objectives include delivering new customer-centric products and services to seize market opportunities quickly (IBM, 2013). Big data can play a pivotal role in enabling customer centricity and achieving these objectives (Oracle, 2012b:3).

It is stated by Sussman (2014) that in an information-centric market, the customer is now in a position to direct and influence companies, and not the other way around, as was traditionally the case. Yuhanna and Gualtieri (2013) argue that in the age of the customer, the only sustainable competitive advantage a company can have is fuelled by the degree to which they know and engage with the individual customer. Big data can assist in better understanding the consumer, which in turn assists in delivering a unique and distinctive experience for each customer.

3.4.2 The customer experience
Jacobs (2014) writes that companies investing in big data recognise that competitive advantage in a crowded market place can be created through more positive customer experiences. The financial services industry needs a transformation focused on customer experience, which big data drives through creating favourable experiences at every customer touch point. Zagorsky (2014) maintains that big data assists with creating the optimal customer journey by providing marketers with an in-depth understanding of how the customer interacts with the organisation through a variety of channels. Ensuring that all of these interactions are positive leads to the customer increasing their interaction with the brand, and this in turn results in the consumer generating huge amounts of additional data (McKinsey & Company, 2013a). It is evident that a strategy focused on customer experience will pay bigger dividends than one that relies merely on old standbys, namely cost and efficiency (SAS, 2013).

3.4.3 Channel management
A key issue discussed so far in this chapter is the importance of the variety of channels through which consumers interact with a company. Consumers are currently faced with various channel options and their preferred channels are as follows: digital channels, i.e. smart phones, tablets and laptops (58%), face-to-face
interaction (24%) and telephone banking (18%) (CGI, 2014:9). According to Davenport (2014:47), there is a challenge in the financial services industry to understand multichannel customer relationships, due to the fact that there are so many channels available through which a customer can interact with the company. CGI (2014:15) claim that channel integration is key to providing a personalised and consistent customer experience that builds brand value. CGI (2014:9) also asserts that consumers are seeking consistent omni-channel delivery; it therefore critical to provide a consistent customer experience across the various channels. An example of how big data can be used across channels to create a positive customer experience is making it possible for customers to view their personal loyalty programmes from any channel and any device. The programme should be regularly updated to reflect change in their financial status and habits (CGI, 2014:15). The question still remains as to who, precisely, the customer is.

3.4.4 A 360-degree view of the customer
Hochhauser (2004:228) suggests that only with a focused 360 degree view of a customer (consisting of their needs, wants, preferences, behaviours and attitudes) can true relationship management and ROI be achieved. It is therefore essential to employ big data when generating a marketing strategy. Yuhanna and Gualtieri (2013) have established that a multidimensional view of the customer is “a view of the customer that uses all of the available information about them – including information pertaining to psychographics, behaviours, social networks, smart devices, geolocation and internet usage – to deliver individualised and contextual product, services and experiences”. Having established a foundational understanding of how data can add competitive advantage and how it is used from a marketing perspective, the discussion will continue by providing a background of how data is used in the financial services industry in particular.

3.5 THE FINANCIAL SERVICES INDUSTRY
Entire business sectors are being reshaped by big data, however some industries have a more established method of using big data than others, these being telecom, retail, media, healthcare, insurance, financial services and logistics (DNV.GL, 2014:10; Mayer-Schonberger & Cukier 2013:3). Martin (2014) observes that globally financial services are taking the lead.
Due to the way information is generated within different industries, some industries are more prone to gaining competitive advantage from big data and using it than others (McKinsey Global Institute, 2011:12). According to SAS (2012a), no industry has more to gain from big data than the financial services industry, as it generates the highest volume of data of any industry. Figure 3.4 illustrates that the financial services industry has the most potential in terms of big data usage, however at the same time it is characterised as an industry having a high degree of difficulty in terms of using big data (Gutierrez, 2014:10).

McMullin (2013) states that if big data is exploited properly, it has the power to transform the financial services industry, as it provides players with data-driven insights never before available, as well as provides opportunities for value creation and competitive advantage.

**Figure 3.4: Sectors differ in their ability to use big data**

![Figure 3.4: Sectors differ in their ability to use big data](source=Adapted from Gutierrez (2014:10)).
According to EIU (2011:16), HP (2013) and Wallace, D (2014), big data is crucial for financial service companies as they generate the highest volume of data of any industry, due to the fact they are massively transactional. With no physical products to manufacture, data is arguably the most important asset in the financial services industry; data forms the currency for competitive advantage (IBM, 2013; Versace & Massey, 2012).

Strategic Direction (2012:22) argue that there has been an increase in the amount of data created as there is an increase in interactions between consumers and brands via mobile devices, a surge in machine-to-machine communications, and a trend of organisations creating ever greater levels of information with their own processes.

All this growth has contributed to the massive amounts of data available to the financial services industry within South Africa and can be represented through the following figures (Oracle, 2012a: SAS, 2012b):

- 57 million customers.
- 29 million customers employing online platforms to transact.
- 10 million customers using mobile platforms to transact.
- Billions of customer interactions each week.
- The global volume of electronic transactions is about 260 billion and in 2012 is growing by between 15% and 22% in developing countries.

According to Patel (2012), the financial services industry has more data on their consumers than companies such as Google and Amazon, who have revolutionised consumer intelligence and one-to-one targeting. It is evident that big data is used by a financial services institution and can bridge the gaps between marketing, finance and operations. This is explicated in Figure 3.5, which is briefly discussed below.

- **Finance**: From a finance perspective big data helps manage liquidity, credit, default, enterprise, counterparty, reputational and other risks (Kumar, 2014; Pramanick, 2013). Big data enables centralised risk management by creating real-time individual risk profiles for customers based on their social networking
activities, purchase behaviours and transaction data, as well as looking for inconsistencies, reducing potential financial and reputational risk (Kumar, 2014; Leaper, 2015).

- **Operational:** Kumar (2014) states that with the financial services industry having gone through mergers and acquisitions, managing operations has proven to be a challenging task, however with new core infrastructure solutions enabled by big data, the financial services industry can now streamline operations. According to Pramanick (2013), the financial services industry is using big data to reduce duplicative systems, as well as manual reconciliation tasks and information technology tasks.

- **Marketing:** Big data has been discussed from a marketing perspective in preceding sections, and will be discussed from a financial services perspective in section 3.6.

Figure 3.5: A breakdown of the term big data within the financial services industry

Source: Adapted from HP (2013).

Figure 3.6 exhibits some areas within in the financial services industry which have more focus and better capabilities than those of other industries. Risk management seems to be taking a leading role, and the marketing side of big data shows a lack of capability and is resultantly seen as a low priority (Capgemini Consulting, 2014:6). This is concerning as the biggest increase of variety and volume of big data was in customer information, operations, sales and marketing (Oracle, 2012a).
According to Palmer (2013b), customer-centric goals with regard to big data are the focus for the financial services industry. Marketing has the most to gain from big data as 55% of the financial industry respondents of a big data study said customer-centric projects are seen as their top priority. This reinforces that customers, and not products, are the main focus for big data (Palmer, 2013b; Wagle, 2013). Martin (2014) writes that globally, 48% of companies are using big data to unlock insights from customer behaviour data. Section 3.4 provides a discussion of the impact of big data from a marketing perspective, and this will also be explored in detail in section 3.6. Below is a brief discussion of the typical financial services customer.

### 3.5.1 The financial services customer

Many financial services customers do not know what they want with respect to managing their financial life, and the financial services industry therefore needs to use data in order to understand and anticipate their customers’ needs (Vijayaraghavan, 2014). The current needs of the financial services customer are seeking tailored, value-added services that support their spending and wealth...
According to CGI (2014:13), trust is a fundamental component to any industry, and this is compounded for the financial services industry as they are guardians of people’s money and personal information. In particular, the financial services industry needs to be cautious with their data usage as 20% of consumers would switch financial services institutions for incorrect data usage as it generates an impression that the company is not trustworthy (CGI, 2014:13). Currently, the financial services industry lacks an emotional connection with their consumers, and vitally, this is what drives trust and loyalty (SAS, 2013). PWC (2011:12) suggests that companies in the financial services industry should focus on gaining their customers’ trust by identifying and addressing customers’ overall financial goals, and should then deliver products and services to help achieve those goals. According to Jain (2014), financial services companies should further position themselves to offer financial guidance and advice. Figure 3.7 represents the top five things a consumer wants from their financial services institution.

It is evident that from Figure 3.7 that with regard to the top five consumer wants, that the majority of them can be delivered digitally. Not only is digital delivery a consumer want, it also benefits the financial services institutions, as moving the consumer ‘from bricks to clicks’ improves operational efficiency (CGI, 2014:10). This also results in more data being created from the consumer experience that can be used by the financial services institution.

**Figure 3.7: Top five consumer wants**

Source: Adapted from CGI (2014:10).
3.5.2 Big data: New trend or old?

It is evident here that the financial services industry is one of those in the forefront in terms of potential and ability to use big data. However Figure 3.8 depicts a slightly different picture in terms of the level of adoption of big data within the financial service industry. It appears that the majority of companies are still in the early stages, or the exploration phase (Capgemini Consulting, 2014:3; Pearson & Sundararajan, 2013:3). This is supported by the fact by that only 37% of companies in the financial services industry have practical experience using big data (Seetheram, 2014).

Figure 3.8: Big data adoption level in the financial services industry

In 1999, Limehouse (1999:100) identified that the financial services industry had extensive technology in the background as well as large processing systems, but they were failing to exploit the information they had running in the front of the office. Kumar et al. (2013:332) state that using data to make business decisions is not a new trend, it’s been around since as early as 1996, with Kotler instigating discussions around it. It is apparent that the financial services industry have not been leveraging big data adequately for some time and a lack of technology cannot be put forward as the reason for this. Seetheram (2014) writes that while 63% of companies in the financial services industry recognise the competitive advantage big data can
provide, only 9% can actually capitalise on it by employing the right skills set. This, along with many other challenges which will be discussed in section 3.13, could be reasons why big data adoption has slowed down. According to SAS (2012a), the financial services industry will need to move outside their comfort zone by thinking differently about business and open up to the possibilities big data can create. Section 3.6 of this chapter will discuss the model of big data that will be used to better understand the extent to which a financial services institution uses big data from a marketing perspective.

3.6 BIG DATA MODEL

Big data has introduced the term ‘database marketing’ to marketers. Database marketing is the process of building, maintaining and using customer databases and other databases (products, suppliers, resellers) to contact, transact and build customer relationships (Kotler & Keller, 2012:165). Kumar et al. (2013:332) define data-driven marketing as “the use of data to inform and optimise the ways through which marketing activities are carried out”. Hence the focus of this thesis is to take the model developed by Byrom et al. (2001:336), which is illustrated in Figure 3.9, and update it in terms of incorporating big data and new sources of data (see Figure 3.10).

**Figure 3.9: Potential data analytical techniques and applications of data**

<table>
<thead>
<tr>
<th>GEOGRAPHY</th>
<th>DECISION HIERARCHY</th>
<th>ANALYTICAL TECHNIQUES</th>
<th>APPLICATIONS</th>
</tr>
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<tbody>
<tr>
<td>Global</td>
<td>Strategic</td>
<td>Neural Nets</td>
<td>Corporate Planning</td>
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<td>Data mining</td>
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<td>Tactical</td>
<td>Propensity modelling</td>
<td>Store portfolio</td>
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<td>Customer segmentation</td>
<td>segmentation and planning</td>
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<td>Basket analysis</td>
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<td>Individual profiling</td>
<td>Brand management</td>
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<td>(1-to-1)</td>
<td>Merchandising</td>
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<td>Customer information</td>
<td>Promotional/media activity</td>
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<td>retrieval</td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>Operational</td>
<td></td>
<td>Direct marketing (mail/telephone)</td>
</tr>
</tbody>
</table>

Figure 3.10: The use of big data in the financial service industry from a marketing perspective.

Source: Adapted from Byrom et al. (2001:336).
Both Figures 3.9 and 3.10 indicate the various sources of data, their uses and their contribution to marketing strategy. It is important to note that the model in Figure 3.9 was based on the retail industry, and due to the fact it was developed in 2001, it fails to incorporate big data and its impact on marketing. Therefore, for the purposes of this study, the model in Figure 3.10 will be utilised, which has been adapted to the financial services industry as well as to incorporate big data.

This section will commence by discussing the different data sources, and revealing the true value that can be generated when data from various sources is integrated. The chapter will then discuss the importance of big data in customer segmentation. In having a better understanding of who the customer is, a marketer would be able to direct all data findings towards customised marketing activities which aid various types of decision-making.

3.7 DATA SOURCES
Data comes in the form of structured and unstructured data, and the most value can be distilled when the two are integrated. However Palmer (2013a) states that the financial services industry lags behind other industries in terms of using more varied types of data sources. Narayanan (2014:6) asserts that big data can improve the quality of a company’s decision-making, through leveraging new and unused data sources.

Below is a discussion of the various data sources used in the financial services industry, as seen in Figure 3.10. The discussion of each data source will include a brief definition of the source followed by a discussion on how each source can be used/integrated with other data sources within the financial services industry from a marketing perspective.

3.7.1 Transactional data (credit/debit card data)
The first element of Figure 3.10 is transactional data. It is stated by Prater (2009) that every time one makes a purchase on a credit card or debit card, a record of that transaction is logged into a database of information collected by the card issuer. In the financial services industry, this generates transactional data.
Parahoo (2012:4) and Prater (2009) report that card issuers have been analysing transactional data since credit cards were introduced into the market in the 1950s, and that it is therefore not a new thing. More often than not, transaction data is not used as there are just too many transactions to extract useful information from them (Profit Insight, 2014). This stems from the fact that there are an estimated 70 million credit cards which are held by 31.6 million card holders (Parahoo, 2012:4). Not only is the volume of transactional data increasing, the data points/variety of data stored for each transaction are expanding too (Oracle, 2012b:4).

Traditionally, marketers looking for a place to start using data start by using transactional data (Poyser, 2014). It is therefore the first data source shown at the bottom of Figure 3.10. Transactional data has always been seen as valuable as it provides a snapshot of momentary customer behaviour (Poyser, 2014). Prater (2009) observes that, depending on how consumers use their cards, companies have a very clear picture of an individual, not only in terms of their retail behaviour, but their online behaviour too; hence card use can provide a complete picture of consumers’ spending habits. With the financial services industry being intimately involved with payments, they are able to have a unique understanding of how, when and where customers are spending money (Duffy, 2014).

Patel (2012) states that it is possible to collect information from transactional data, as well as identify segments and base information on these segments. Marketers are now able to customise their offerings, from the different types of products offered, to the specific ways a company can communicate with their customers (Profit Insight, 2014:2). This means a company is able to directly communicate with their customer using a message that relates to them in a manner they appreciate, at the most appropriate time.

However, with this in mind, transaction data represents the floor of a company’s marketing potential rather than the ceiling (Poyser, 2014). As mentioned before, it is a good starting point, however to gain competitive advantage, a marketer needs to integrate it with data from other sources, a few of which will be discussed next.
3.7.2 Loyalty card data

Parahoo (2012:6) defines customer loyalty as a customer’s intention or predisposition to purchase from the same company again. Meyer-Waarden (2008:89) defines a loyalty card program as an integrated system of marketing actions that aims to make customers more loyal by developing personalised relationships with them.

In the financial services industry, credit cards and debit cards are used as loyalty cards and although data stemming from these two sources can be seen as separate. For the purposes of this study they will be treated as interchangeable and will be discussed alongside each other.

Loyalty card data was spoken about as far back as 1999, and it is not considered a new venture for the financial services industry. It was recognised back then that loyalty card programs were not designed only to offer customers discounts or rewards, and that the biggest benefit of loyalty cards was in the data and knowledge companies obtain from them (Lacey & Sneath, 2006:461; Limehouse, 1999:100). Schumarzo (2012) reinforces this, stating that companies have been capturing customer loyalty data for over a decade but have done little to leverage the data to improve their customers’ experience.

With loyalty in the financial services industry declining over the past few years, it is clear that loyalty card programs are not yet achieving their goal of retaining loyal customers. The number of customers who state that they will definitely not switch financial services institutions in the next 12 months has fallen from 46% in 2007 to 34% in 2010 (PWC, 2011:11). A main aim of the financial services industry is to attract more consumption from wealthier card holders and obtain data from them (Lui, 2009:404). This is echoed by CGI (2014:15), who state that the payback of loyalty schemes are not only designed to create more loyal customers, it also generates new income streams as well as new sources for acquiring even more customer data. Companies that have embraced loyalty card data have been at the forefront of using data and insight to deepen customer relationships (Poyser, 2014).
Marketers now have the ability to reward customers based on current and potential value they would add to the business (Poyser, 2014). Parahoo (2012:5) writes that rewards and benefits are allocated to customers in such a way that the higher the expenditure a customer incurs using a specific credit card, the more related benefits they earn.

As previously mentioned, there is merit in overlaying data, and marketers can combine transactional and loyalty card data to provide cash backs to card holders based on where they have made payments in the past (Capgemini Consulting, 2014:9). Hochhauser (2004:230) asserts that at the heart of loyalty is segmenting and profiling, which will be discussed shortly.

3.7.3 Internal data
The earliest big data efforts targeted sourcing and analysing internal data, with more than 50% of financial services institutions reporting that internal data was their primary source of big data (Palmer, 2013a). Today, there is still tremendous untapped value locked away in these internal systems (Palmer, 2013a). Capgemini Consulting (2014:7) and KPMG (2014c:20) report that the current focus is not towards internally generated information in search of a deeper understanding of the customer, and that companies can now complement internal data with external data sources.

It is stated by KPMG (2013) that call centre conversations between customers and call centre agents are analysed in real-time for key phrases, voice modulations and questions. In doing this, marketers can identify when new opportunities are presented or when intervention is required to address a problem.

As previously mentioned, combining data sources is beneficial to marketers, who can combine robust call centre data with transactional data to reduce customer churn, enhance up-selling and cross-selling and enable proactive alerts (Kumar, 2014). In linking transaction data with the internal enrolment data, marketers are able to see if it affects disenrollment, this will assist with customer retention strategies and customer churn (Bharal & Halfon, 2013:8).
3.7.4 External data
According to KPMG (2014c:14) and Zagorsky (2014), with the amount of data growing exponentially in the financial services industry, there is also more and more external data available, and the industry should take advantage of it. External data sources consist of government data, industry data or third-party data. The value lies in combining real-time insights from the operational side with external information regarding the industry and the economy (KPMG, 2014c:15). However, PWC (2013b:9) is of the opinion that rather than focusing solely on external data, companies should combining third party as well as internal rich data. Ultimately, a company would get the most value out of combining internal and external data sources (KPMG, 2014c:20).

3.7.5 E-commerce data
Kotler and Keller (2012:460) aver that e-commerce data is any data stemming from a website which is used to transact or facilitate the sale of products and services online. Kumar et al. (2013:333) state that digital data is considered to have the highest volume of data since it is considered to have the largest number of individual interactions that can be tracked from the internet. This is due to the fact that consumers spend vast amounts of time on the internet and they leave a vast trail of information about who they are and what they seek (Hazan & Banfi, 2013). CGI (2014:4) reports that more and more consumers search web portals and comparison websites before they talk to their financial advisor. With customers doing business through online channels, their behaviour has changed, and they are now choosing the most convenient and inexpensive online offering available over having a relationship with their local service provider. This contributes to the vast amount of customer data now available (Gutierrez, 2014:9). It is asserted by EFMA and WIPRO (2013:4) that with increased use of digital channels, the marketing efforts of the financial services industry need to evolve from broad-based brand and branch and focus campaigns to include more effective digital marketing. Big data can be used from a marketing perspective in various ways which will now be discussed.

E-commerce data can be used to customise and better manage advertising. Big data facilitates advertising by being able to measure an audience’s response to a change in ad concepts or art concepts. By monitoring click rates, it is possible to determine a
customer’s preferences (Hazan & Banfi, 2013). Hazan and Banfi (2013) write that companies are now able to do profiling based on web history using cookies, as well as customise digital advertising as needed. Therefore, marketers should use data to manipulate content to appeal to segments they are attempting to persuade to buy (Breur, 2011:101).

Big data can also reveal customers’ buying behaviour. It is stated by Hazan and Banfi (2013) that with online marketing in particular, a marketer is able to analyse specific purchasing behaviour of certain products and analyse it to see sales conversion rates. Data from websites shows what customers are searching for and where they click online, showing hidden correlations of interest and clues to where customers are in the buying cycle (Salkowitz, 2014:10). The financial services industry can use data-driven insights to refine website content and increase customer engagement (Capgemini Consulting, 2014:6).

This study has now established that there is merit in overlaying data sources. Poyser (2014) states that by connecting web search and online shopping behaviour to transaction data, marketers are now able to customise the web experience to the individual. Another example of the benefits of overlaying data is that marketers can monitor customer tendencies from online browsing and link it to call centre logs to investigate if customers took action on the internet after calling (Bharal & Halfon, 2013:8).

3.7.6 Mobile commerce data
According to Petrova (2002), mobile commerce is the use of wireless devices and data connections to conduct transactions, which results in the transfer of value in exchange for information, goods or services. Mobile data is any data that is generated from a mobile device or personal digital assistants (PDAs). In the financial services industry, the ability of the customer to conduct their financial business via a mobile device or mobile terminal has driven the large amount of data created (Petrova, 2002). Zhang and Chng (2014) assert that within the next decade, companies will see vast amounts of big data generated from this source.
Petrova (2002) argues that mobile banking has emerged as a promising new application of the next generation of e-commerce, that is, m-commerce. The increase in data is supported by the trend of a cashless society, which is gaining popularity as it is easier to use a smart phone than to find a branch (Oanda, 2013). Hence it is important that marketers in financial services institutions embrace mobile technology as a channel to reap the rewards it has in terms of generating data (SAS, 2013). It is stated by Salkowitz (2014:10) that data stemming from mobile phones is rich and unstructured and includes location, travel patterns, and a context of ideal times to reach consumers with messages and offers. M-commerce data is also seen as more beneficial than e-commerce data as it is more personal, due to the fact that mobile phones are not carried by another party, they are carried by the owner (Petrova, 2002).

According to Poyser (2014), when a marketer encourages mobile engagement with their brand through a reward program application, they will uncover data such as location. In doing this, companies are able to accrue response and in-store behavioural data which can enhance the company’s ability to build a relationship through mobile devices (Poyser, 2014).

3.7.7 Social media data
Social media marketing is seen as the perfect platform for customer relationship management in the financial services industry as it reflects personal opinion, thoughts and behaviour (Chikandiwa & Contoglannis, 2013:365; Kalampokis, Tambouris & Tarabanis, 2013:554). Ward (2010:87) defines social media as “a type of online media that expedites conversation as opposed to traditional media, which delivers content but doesn’t allow readers/viewers/listeners to participate in the creation or development of the content”. A few examples of these channels are Twitter, Facebook, MySpace, YouTube and LinkedIn. Mejova (2012:6) informs us that social media commands over 22% of the world’s total time spent online, and that 65% of adult users use some kind of social networking. Data from these platforms are able to show social connections, influence and brand sentiment (Salkowitz, 2014:10).
KPMG (2014c:43) reports that within the financial services industry, the banking sector is light years ahead of the insurance sector when it comes to using social media data. This is due to the fact that insurance relies on external service providers to manage their social media, and this creates an information gap. CGI (2014:5) states that although 79% of financial service providers have taken the first steps in social web, they have not yet employed it efficiently.

From a marketing perspective, analysing customers’ conversations through social media helps determine brand sentiment, identify product improvements, solve public relations crises, and understand evolving needs and perceptions (McKee, 2012). Van Rijmenam (2013b) argues that marketers can use social media data to find the most important influencers and understand what they think about new products or services. According to Miljana and Kapoulas (2012:670), social media creates opportunities for marketers with regard to niche targeting and market segmentation.

It is important that financial services institutions integrate social media with traditional marketing as South Africans consume both media (Chikandiwa & Contoglannis, 2013:379). Poyser (2014) states that by encouraging customers to connect their social media platform to loyalty program memberships, marketers are able to understand how social media engagement influences purchase decisions.

Due to the rapid growth of big data, the model used for this study will need to be adapted in future as there are new sources of data that are creating interest but haven’t been fully exploited that would ultimately need to be added to the model with time. These are biometric devices (digital health and fitness devices), personal recognition devices, as well as data coming from analysing smart spaces (Salkowitz, 2014:14). All the sources that have been discussed generate different kinds of data, which will be discussed below.

3.8 DATA TYPES
Each of the data sources mentioned in Figure 3.10 generates different types of data, specifically geospatial data, text data or speech data amongst others. Each of these have varied structure, and they can either be structured, unstructured or a
combination of both. For the purposes of this study, the dominant three types, namely geospatial, text and speech data, will be focused on.

3.8.1 Geospatial data
Geospatial data is any data that has a geographic component to it, meaning it has location information in the form of coordinates, address, city or zip code (Morais, 2014). This data is taking the financial services industry by storm, both in insurance and banking. Posthumus (2008:71) reports that the prevailing view is that South Africa is lagging behind in terms of the trend of using geospatial data, as only a small percentage of companies in the logistics industry are using it. Posthumus (2008:74) goes on to contradict this view, stating that the financial services industry has been using geospatial data for many years as a tool to inform business decisions.

It is stated by Posthumus (2008:71) that location is a critical component in almost every business transaction. It is stated by HP (2013) that with the advancement of GPS technology embedded in mobile devices, insurance companies can now optimise their travel insurance products by being equipped to send out context-aware promotional offerings. This can be done by offering baggage loss insurance at the airport or emergency contact information to a customer particular to the city they just arrived in. PitneyBowes (2015) states that financial services institutions are able to electronically send their cardholders special offers when they are at or near a specific store based on their geographical data. Financial services institutions are using geospatial data to detect fraud, and being better informed using this data can help them avoid flagging charges as potential fraud unnecessarily (PitneyBowes, 2015). Zhang and Chng (2014) assert that insurance companies are benefiting by geospatial data by installing vehicle monitoring systems. As a result, companies will easily understand drivers’ behavioural patterns, which will enable the marketer to determine more accurate pricing and claims.

3.8.2 Text data
Text and sentiment analysis, which will be discussed in section 3.9.3, is the process of deriving information from text sources (Badenhorst & Fitzgerald, 2013). Social media relies heavily on mining text along with transactional and m-commerce data (Breur, 2011:101). Koslowsky (2010) maintains that the source of text comes from
the use of keywords and phrases in free form text fields provided by prospects, partners and customers, as well as their frequency and proximity of use in relation to each other. It is stated by Revels and Nussbaumer (2013:69) that although textual data represents the most common and abundant source of data in an organisation, it is rarely used in decision-making due to the fact that it is the least structured data and I.T. infrastructures struggle to support the amount of textual data. Companies in South Africa are slow-moving in adopting this approach to data mining.

Koslowsky (2010) writes that marketers use text mining for two reasons, namely, to classify data subjects by segment, and to predict customer behaviour. Breur (2011:103) is of the opinion that text mining presents a few challenges as taxonomies for slang evolve quickly, and as a result, new words are being introduced, existing words acquire new meanings and the relation between words changes rapidly.

Koslowsky (2010) argues that by combining customer service logs with transaction data, companies can easily identify customers’ intent to switch to a different service provider and to proactive precautionary measures in order to retain a valuable customer. It is stated by Koslowsky (2010) that product managers could use text mining to mine blogs and social media sites to learn about stakeholders’ opinions and identify communities of interest.

3.8.3 Speech data
Speech analytics was originally termed ‘audio mining’ and involved audio files being converted to text to enable searches of specific words or phrases (Van Vreede, 2014). Speech analytics involves in-depth searches based on phonetics and includes the ability to detect certain emotions expressed on a call as well as trends within a call such as hold times and silent patches. (Van Vreede, 2014).

Both Patel (2012) and Van Vreede (2014) state that speech analytics offers the ability to create meaningful voice data and detect interaction trends to help companies improve services, reduce costs, grow revenue, identify promotion opportunities as well as identify ways to shorten calls. Bharal and Halfon (2013:8) state that by using speech data to analyse incoming calls, marketers can perform
sentiment analysis and identify negative conversations. These negative conversations could stem from customers who are terminating their account, for example, and marketers can identify key phrases which help them identify other at-risk customers (McKee, 2012). Other ways in which speech analytics is used is by insurance companies who are now sending voice recording files through to the customer as part of the contract management process in order to restore customer confidence and trust in the brand (Dimension Data, 2012:4). Narayanan (2014:2) reports that analysis of speech data in a real-time environment presents new opportunities to convert the call centre from a cost centre to an investment centre. Contact centres can better cross-sell offerings depending upon actual words used in conversations with customers (Koslowsky, 2010).

3.9 SEGMENTATION INSIGHTS
Marketing segmentation is the most widely used marketing tool and plays a crucial role in identifying and managing differences among customers (Marous, 2013). Strydom (2014:118) defines segmentation as “dividing the entire potential market into smaller (more manageable and accessible) groups of consumers who share similar needs and behaviours”. The goal of segmenting is to target those most likely to continue to purchase your goods and services, to target those who are likely to become profitable customers, and to tailor offers that meet individual needs of each type of customer (Hochhauser, 2004:230). Below are a few insights that the financial services industry can glean from using big data.

3.9.1 Demographic segmentation insights
Traditionally, companies would segment according to data based on demographics. Within the financial services industry specifically, this was done based on age, income, gender, family life stage, occupation, education and race (Marous, 2013). While using demographics for segmentation can explain broad behaviours, they play a weak role in explaining brand preferences, product purchasing, innovation adoption, channel use and technology uptake (Marous, 2013). Changes in product delivery, communication channels and competition have made a demographic-based targeting approach much less effective (Marous, 2013). There has therefore been a shift to using big data for segmentation, as it can provide insights to develop
segmentation strategies based on transactional, behavioural and even social profiles (Marous, 2012).

3.9.2 360 Degree segmentation insights and profiling

Mayer-Schonberger and Cukier (2013:13) write that big data provides a marketer with a clear view of the ‘granular’, that is, sub-categories and sub-markets. Big data allows the financial services industry to target specific micro customer segments by combining various data points such as past buying behaviour, demographics, sentiment analysis from social media along with customer relationship data (Capgemini Consulting, 2014:7). Companies using big data can now segment according to what their customers expect and value in terms of products and services (Camhi, 2013).

Baumann, Elliott and Burton (2012:152) are of the opinion that in times of increased cost pressures and financial turmoil, it is crucial for the financial services industry to better profile customers in order to improve customer satisfaction, relationship management and loyalty. Marous (2013) asserts that financial services institutions can use customers’ financial activities to distinguish between segments, and this provides insights into their purchase behaviour, likelihood of referrals, interest in deals, revenue potential and risk of attrition. According to Patel (2012), segmenting your database will help you improve conversion rates as it helps you focus your promotions on a tight, highly-interested market. Targeted driven services leads to increased revenues, decreased customer churn and increased customer engagement (Oracle, 2012b: 17).

Strategic Direction (2012:23) reports that with real-time targeting, along with leveraging loyalty card data, companies will be able to increase purchases of higher margin products by their most valuable customers. In using big data to segment, marketers are able to provide personalised products and services. If this is done correctly, they can create a personalised experience for the consumer. Big data will assist with improving the customer engagement experience and loyalty, leading to an increase in sales and profitability (Capgemini Consulting, 2014:7).
3.9.3 Sentiment insights
Sentiment analysis is done by assigning a quantitative score of high (for good) or low (for bad) to adverbs, negators, emotional loading and contextual descriptors (Badenhorst & Fitzgerald, 2013). According to Oracle (2012b:18), although keyword analysis and entity extraction have been around for a while, social media sources are new environments for the application of these methods. Sentiment analysis started with product reviews, then moved onto blogs, web pages, news articles and then shifted into the social media space with the first channel being Twitter (Mejova, 2012:9). Sentiment analysis aims to extract emotions and opinions from text and social media (Mejova, 2012:1). It allows an organisation to assess whether the comments about its brands and products in blogs, tweets, and Facebook pages are generally positive or negative (Davenport, 2014:46).

Sentiment insights can be used by a marketing department in various ways. Krishnamurthy (2013) contends that sentiment tools capture customers’ feedback from social media platforms, customer service interactions and other platforms, and this assists the financial services industry to evaluate the potential impact of their decisions. Sentiment tools also play a role in loyalty and reward programs; through examining consumer confidence indices, financial institutions are able to judge the mood of the market and decide how best to reward consumers (Krishnamurthy, 2013). Zhang (2013:21) predicts that marketers can use deep semantics to improve browsing and item recommendation experiences online, as well as uncover similarities between branded and unbranded items.

However, there is one thing to keep in mind about using sentiment analysis within the insurance sector of the financial services industry. Due to the fact that insurance is not a product with customer praise, analysing online word of mouth for sentiment is a limited approach (Majtánová & Brokešová, 2012:57).

3.10 MARKETING ACTIVITIES DEPENDENT ON BIG DATA
It is stated by StackIQ (2012:6) that the usage of big data in the financial services industry can impact marketing activities such as advertising and campaign management, customer value management, customer sentiment analysis, as well as loyalty management, all of which enhance marketing, branding, sales and
operations. These are discussed in detail in the following section. It is important to note that some marketing activities are more data reliant than others, which will now be discussed.

3.10.1 Sales
Ostrow (2014) contends that big data tends to be focused on forecast sales, and makes use of predictive analytics to understand which deals are more likely to close, which are at risk and which ones to walk away from. Patel (2012) asserts that data could help a sales person look at the number of customers in their area and predict how many of them will buy. According to Salkowitz (2014:12), marketers can now use data to replicate a sales person in terms of anticipating behaviour, short-circuiting objections and meeting unspoken customer needs.

From a marketing perspective, big data’s greatest potential is in identifying the most valuable customers as well as finding opportunities to cross-sell products and services (Olavsrud, 2013). StackIQ (2012:5) reports that when marketers collect data across channels such as website, click stream, social media account information, they are able to suggest additional products to customers, and this ultimately leads to up-selling and cross-selling. Big data has the ability to link and provide context to what people are saying with what a business is experiencing in terms of sales (Liebenson, 2012). Big data impacts across the marketing mix, and affects some elements more than others. The elements most impacted by big data will be discussed below.

3.10.2 Marketing communications – direct marketing
The marketing communication mix consists of advertising, sales promotions, public relations, direct marketing and personal selling (Strydom, 2014:217). Big data can assist across all of these, however it is known to transform direct marketing the most. Direct marketing is defined as any communication using mail, telephone, fax, e-mail, or internet to communicate directly with or solicit a response or dialogue from specific customers and prospects (Kotler & Keller, 2012:500).

In the past all direct marketing strategies used a database which could identify high value/frequent buyers, their profile, credit-worthiness and scoring mechanism to
decide what other products they wanted to buy (Lisa & Patterson, 1995:18). However, over time, the financial services industry in particular became unhappy with their direct marketing campaigns as costs were high and the uptake on new product offerings was poor (Biesdorf, Court & Willmott, 2013). This is due to the fact that marketers were sending multiple offers across the entire base of customers, regardless of individuals’ financial profile or preferences (Biesdorf et al., 2013). As mentioned before, with big data assisting with micro-segmentation, marketers are now able to use direct marketing more effectively.

As a result of big data, direct marketing has evolved over time into a complex science. It involves collecting data on customers, storing transactional and behavioural information in a database, and analysing it to ensure maximum return-on-investment (ROI) (Harridge-March, 2008:193). According to Breur (2011:99), direct marketing is popular today because of the internet and because of its ability to enable exact measurement of ROI for marketing campaigns. Using big data for direct marketing has a huge capacity to nurture customer relationships as it records interactions with your customers and shows them how you remembered their preferences (Breur, 2011:99).

3.10.3 Pricing
Big data is used to enable a marketer to make more granular pricing decisions (PWC, 2013a:54). Davenport (2014:48) maintains that, traditionally, pricing optimisation was done with internal structured data based on goods historically being sold at a certain price, however companies are now able to incorporate external, less structured data to inform pricing decisions.

In the financial services industry, banks traditionally assumed that everyone wanted free services, however data has revealed the trend that many consumers wanted à la carte pricing, and these consumers were typically heavier users of digital channels (Camhi, 2013). This has happened in recent times with customers using mobile platforms. The financial services industry has assumed that their consumers want mobile services for free, however results show that the majority of consumers are willing to pay for them (Camhi, 2013). The financial services industry needs to be aware of the fact that consumers have different expectations of their financial service
providers and are willing to pay for different services when they are best suited to them (Camhi, 2013).

Within the insurance sector, data is able to provide a company with the ability to better reflect the risk profile of the policy holder when determining the pricing of an insurance premium. This inevitably differentiates between a profit or a loss for the insurance company (HP, 2013). Actuaries in the insurance industry use data to determine risk exposure of people and set rates accordingly (McColgin, 2013).

3.10.4 Product design/development
According to Zagorsky (2014), financial services institutions need to introduce new products and develop innovative solutions to achieve greater customer centricity. It is stated by Oracle (2012b:17) that financial services customers are more likely to be attracted and retained with personalised products. StackIQ (2012:4) contends that big data provides the marketer with the ability to rationalise new product lines from mergers and acquisitions, which is, as mentioned before, exactly what the financial service industry has been experiencing. Big data is helping companies innovate by enabling them to market new products quicker (Strategic Direction, 2012:23). This holds true for the financial services industry, where it is important to be the brand that launches a new product into the market first (Oracle, 2012b:17).

Rajpathak and Narsingpurkar (2013:1) assert that companies have realised the importance of exploring data within the various phases of the new product development process. By doing so, they has huge potential to improve product performance, bring about efficiency in the development process, contain costs and enhance the customer experience.

Patel (2012) suggests that in uncovering customers’ pain points within a database companies are able to produce a new product in a way that no other company thinks of, companies are spotting gaps that customers wish to be filled. Big data assists in deepening our understanding of human behaviour, interaction and preferences, and this understanding assists in making designs better and predicting the outcome of the design work (McColgin, 2013).
3.10.5 Market research
Marketing research is defined by Kotler and Keller (2012:120) as the systematic design, collection analysis and reporting of data and findings relevant to a specific marketing situation facing a company. It is stated by Kumar et al. (2013:334) that there are three sources of data created in marketing research. These are traditional, digital and neurophysiological data. Traditional data is customer data gathered through surveys, focus groups, experiments, interviews and observations (Kumar et al., 2013:333). Digital data is produced through human interaction with services provided on the internet as well as human interaction with others on the internet. Lastly, neurophysiological data is data generated by getting inside the customer’s head in order to know what they are thinking (Kumar et al., 2013:336).

There is a huge debate in the marketing industry around whether big data is replacing marketing research. It is stated by Fromen (2014) that big data can reveal what users are doing but it cannot tell why. Wharton (2014) argues that the science of psychology, which reveals why people are doing what they are doing, is a great complement to what can be measured by big data, and market research can therefore be productively coupled with big data. Big data and market research can come together, with big data finding patterns, and market research testing hypotheses (Wharton, 2014).

3.10.6 Customer service
CGI (2014:7) reports that, on average, one out of every two financial consumers are satisfied with their financial services institution. Gutierrez (2014:5) is of the opinion that service quality is one of the most prominent reasons why customers are switching financial service providers. When consumers find services they like and value, satisfaction with old services drops quickly, allowing competitors to capture market and wallet share (CGI, 2014:7). Consumers are demanding services that go beyond merely meeting basic needs; they are demanding services that enhance their lives, such as advice of building wealth, budgeting, saving and paying off debt (CGI, 2014:6).

According to Zagorsky (2014), the financial services industry can integrate the various sources of big data from a number of customer channels in order to provide
call centre staff with access to a holistic view of each customer. As a result, call centre agents can address a customer's query more effectively and service the customer better (Zagorsky, 2014). Van Rijmenam (2013b) suggests that customers feel more appreciated if when they call into the call centre, the agent on the other end knows all their details due to the fact that internal systems are aligned and connected.

3.10.7 Customer relationship management

Hochhauser (2004:227) defines relationship management as a “business philosophy that allows companies to enhance their relationships with customers, (or create new relationships with prospects) by understanding and responding to individual customer needs in a profitable manner”. Hochhauser (2004:228) goes on to state that in order to implement relationship management successfully, companies must identify touch points that they have with their customer. These touch points can range from direct mail, telemarketing, billing questions, e-mail, webpages, to Facebook pages and public relations (Hochhauser, 2004:228). Each touch point creates an opportunity to use data to build on their current relationship, and this illustrates the importance of marketing strategy and technology coming together (Hochhauser, 2004:228). Through using data from customer profiling and accumulation of touch points, marketers have the ability to create an experience for the customer which is personalised.

The financial services industry is using big data to understand the customer’s journey through the clutter of websites, call centres, and tellers. This will assist them in understanding the path their consumer follows through the organisation, and will provide them with insight on how those particular paths affect attrition or purchasing of specific financial services (Davenport, 2014:47). This then enables companies to identify common journeys, attach segment names and ensure that these interactions are positive (Davenport, 2014:47). It is this high quality interaction at each touch point that contributes to an unforgettable experience. Arthur (2013) argues that companies can use the insights they gather from each touch point to improve customer engagement strategies. Hence the financial services industry needs to continuously adapt and create unforgettable experiences. More specifically, the financial services industry should use data to allow its customers a personalised
lending experience that is easy and intuitive (Armstrong, 2014). Zagorsky (2014) asserts that personalisation is critical to acquiring new customers as well as deepening the relationship with existing customers to maximise their lifetime value.

It is stated by Hochhauser (2004:231) that companies that understand and utilise customer and prospect data effectively will ultimately be able to drive the right message to the right audience at the right time through the right channel. The insight that informs this is a critical component of any customer acquisition and retention strategy. This forms the basis and foundation of a true customer relationship management strategy (Hochhauser, 2004:231). It is stated by Zagorsky (2014) that big data assists the financial services industry by being able to predict churn by understanding its early signs as well as design effective personalised offers to prevent customers from defecting.

3.10.8 Branding strategies
Van Rijmenam (2013b) states that the industry has lost a lot of trust since the crisis of 2008. McMullin (2013:10) is of the opinion that trust is the very foundation of the financial services industry. Customers want assurance that their financial information is in safe hands. Therefore, companies within the financial services industry need to promote themselves as a trusted financial service provider (McMullin, 2013:10). It is stated by Sosna (2015) that a solution to building trust can be provided by big data, as it enables a company to focus on someone’s individual needs in order to create a valuable interaction, which is ultimately what creates trust. Krajicek (2013:9) reminds companies that big data is made up of a series of little interactions with individuals touching a brand through various direct and indirect activities.

Salkowitz (2014:12) writes that there are many uses for big data within marketing, some of which are insight into action (enabling quantitative measurement of complex processes throughout the marketing discipline), personalisation at scale, blending of sales and marketing as well as providing a 360 degree view of the customer (a far more nuanced picture of the customer). Sosna (2015) states that what is needed is a shift in mindset and for companies to move away from using big data merely to sell and move towards using big data to guide and build trust.
3.11 MARKET ORIENTATIONS
Referring back to the model in Figure 3.10, this part of the chapter will focus on the market orientations section of the diagram. It is stated by Kotler and Keller (2012:40) that marketing has evolved over time from being a production concept towards what is known today as a holistic marketing concept. Strydom (2014:3) asserts that the production orientation would see the market as homogenous and assume that it would be satisfied by the basic functions of the product. Moving onwards, the sales orientation involved a focus on the seller so as to sell more rather than on the needs of the consumers (Strydom, 2014:3). The marketing concept is based on achieving organisational goals more effectively than competitors by creating, delivering and communicating superior customer value to target markets (Kotler & Keller, 2012:40).

The trend of the 21st century however is the holistic marketing concept, which acknowledges that everything matters in marketing, and it recognises internal marketing, performance marketing, relationship marketing and integrated marketing (Kotler & Keller, 2012:41).

The financial services industry was traditionally seen as product-orientated; they developed and offered products and services that they thought clients would want (Strydom, 2014:3). After this they adopted a sales orientation in the 1970s, and appointed consultants to convince clients that they needed these products and services. In the 1990s, the industry would determine what their clients’ needs were and then develop products and services that would appeal to these needs (Strydom, 2014:4). They needed to become customer-centric rather than transaction-focused, as this orientation would provide the best opportunity for them to thrive (SAS, 2014). Marketing has the most to benefit from big data as 55% of the financial industry said customer-centric projects (refer to section 3.4.1) are their top priority. This proves that customers and not products are the main focus for big data (Wagle, 2013).

Marketers in the financial services industry find themselves operating in the 21st century, and they therefore need to incorporate holistic marketing concept and use big data to establish customer centricity.

3.12 DECISION-MAKING
Referring back to the model in Figure 3.10, this section discusses the decision making leg of the model. It is stated by DNV.GL (2014:4) that there is a strong trend
across all industries and sectors to move towards using big data to assist with fact-based decision-making. It is stated by Bose (2009:158) that business leaders are transitioning from operational business intelligence to analytical business intelligence.

Analytical business intelligence focuses on customers, resources and abilities to use data to drive new decisions every day. Meer (2013) suggests that there is a paradigm shift towards data-driven decision-making, which should occupy the centre of all business decision-making. According to Bose (2009:155), the insight gained from big data should be used to direct, optimise and automate a company’s decision-making. Historically, marketers have operated on instinct, in that they would see a marketing opportunity and pounce. The challenge with big data is marketers need to learn to trust their instinctive judgment less (Satell, 2014). Big data is driving a shift away from gut-based decision-making based on hunches and instinct (EFMA & WIPRO, 2013; Spenner & Bird, 2012). This is reinforced by Libert (2013), who states that business leaders need to be open to having instinct overruled by data as a change in an organisation’s decision-making culture starts from the top.

However Howarth (2013) states that what is important is the speed at which the insight becomes available to the relevant decision makers. Writer (2013) argues that due to the increase in competition in the financial services industry, companies have to analyse trends and make decisions far faster than they had to in the past. It is stated by Bose (2009:155) that the only thing that differentiates companies in today’s highly competitive environment is the ability to make accurate, timely and effective decisions at all levels, that is, operational, tactical and strategic. Goller and Hoffman (2013:34), as well as Narayanan (2014:6), state that real-time data allows users to collect, manage, analyse and act on information in the moments of truth (at the point of impact) thus enabling real-time decision-making. It is beneficial to give decision makers at all levels near-real-time feedback (Ross, Beath & Quaadgras, 2013:92). The fifth biggest complaint by executives regarding big data is that 24% of them say that information is no longer timely by the time it makes its way to business managers (Acker, 2013).
It is important for companies to use Figure 3.10 to determine where they are on the big data curve and to make their way up the curve as quickly as possible. Ross et al. (2013:92) suggests that once companies have made the cultural change towards embracing data, they never return to their old operations. The improvements place these companies leagues beyond their competitors, and provide them with a competitive advantage.

3.13 SUCCESSFUL IMPLEMENTATION OF BIG DATA

Unfortunately, many professionals in many industries do not see the relationship between data and profit (SAS, 2012). Without an injection of big data, the financial services industry will become increasingly irrelevant, customers will lose interest and trust and firms will lose revenue (Deloitte, 2012:5). Patel (2012) states that not gaining insights from the goldmine of data means financial services institutions are allowing their competition to identify critical business trends and act on those before they can. According to Letter (2013), by reviewing the relevant processes, technology and the access employees have to data, financial service institutions will position themselves to become more agile and competitive as they progress into the digital era.

Companies also need to come to the understanding that this is something that cannot be done overnight, it takes three to four years of strategic planning to achieve (Yurcan, 2009). Few marketing managers/departments know how to use data or have the resources to understand the value it creates for their shareholders (Sexsmith, 2013). With the right technology solutions in place, more than 60% of Africans could have access to financial services by 2025 (McKinsey & Company, 2013c).

Wegener and Sinha (2013) argue that in order for a company to successfully implement big data, they need to invest in four important areas. These are: data-savvy people, quality data, state-of-the-art tools and processes and initiatives that support analytical decision-making (see Figure 3.11). A third of all companies researched globally have not invested in any of these areas, with the remaining companies only excelling in one or two areas.
3.14 CONCLUSION

This chapter has provided a comprehensive background on the definition of big data, and its usage from a marketing perspective. It has also provided an understanding of how data can be used in the financial services industry specifically. A big data model was introduced and discussed in detail. This model will be used as a tool for interviewing in Chapter 5 and answering the primary research objective in Chapter 6. Lastly, this chapter provided a discussion of the successful implementation of big data. The next chapter, Chapter 4, will discuss the research methodology in detail.
CHAPTER 4
RESEARCH METHODOLOGY AND DESIGN

4.1 INTRODUCTION
This chapter provides a breakdown of the research objectives and proposition set out for this study. The chapter then provides a discussion of the research design, of how data for this research will be collected, as well as an explanation of how the data will be analysed. The final part of the chapter discusses the various measures the researcher will use to test the truth value of the qualitative design. There will also be a brief exploration of the ethical issues that needed to be considered when undertaking the study.

4.2 RESEARCH OBJECTIVES
It is stated by Wild and Diggines (2013:48) that research objectives indicate broadly what the research hopes to accomplish as it informs what the researcher wants to attain through the study. Research objectives are broken into primary objectives, which is an overall statement of the thrust of the study, and secondary objectives, which are the specific aspects of the topic that the researcher wants to investigate within the main framework of the research project (Wild & Diggines, 2013:48). The primary and secondary research objectives for this study are laid out in Table 4.1 below.

Table 4.1: Primary and secondary research objectives

<table>
<thead>
<tr>
<th>Primary Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>To investigate the extent to which a financial services institution in South Africa uses big data from a marketing perspective.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary research objective A: To determine the extent to which big data is used by the financial services institution in business-to-business (B-2-B) marketing.</td>
</tr>
<tr>
<td>Secondary research objective B: To determine the extent to which big data is used by the financial services institution in business-to-consumer (B-2-C) marketing.</td>
</tr>
<tr>
<td>Secondary research objective C: To determine the extent to which the financial services institution uses various data sources.</td>
</tr>
</tbody>
</table>
4.3 RESEARCH PROPOSITIONS

It is stated by Clay (2015) that propositions are similar to hypotheses but their main purpose is to suggest a link in qualitative research between two concepts in a situation where the link cannot be verified by way of experiment. Propositions therefore rely heavily on prior research, reasonable assumptions and existing correlative evidence (Clay, 2015). Research propositions, according to Baxter and Jack (2008:552), come from literature, personal/professional experience, theories or generalisations based on empirical data, each having distinct focus and purpose. Propositions are sometimes also referred to as hypotheses, however propositions are more commonly used to describe qualitative research, as is in this case study approach (Zikmund & Babin, 2010:55). These propositions later guide the data collection and discussion (Baxter & Jack, 2008:552).

In order to reach the primary and secondary objectives, the following propositions are set:

**Proposition A:** The financial services institution uses big data in its B-2-B marketing.

**Proposition B:** The financial services institution uses big data in its B-2-C marketing.

**Proposition C:** The financial services institution uses various data sources.

<table>
<thead>
<tr>
<th>Secondary Objectives</th>
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</thead>
<tbody>
<tr>
<td>Secondary research objective D: To determine the extent to which the financial services institution integrates data sources to better understand the customer.</td>
</tr>
<tr>
<td>Secondary research objective E: To determine the extent to which the financial services institution uses big data for consumer insights.</td>
</tr>
<tr>
<td>Secondary research objective F: To determine the extent to which the financial services institution uses insights for the implementation of marketing activities.</td>
</tr>
<tr>
<td>Secondary research objective G: To determine the extent to which the financial services institution uses big data to be market orientated.</td>
</tr>
<tr>
<td>Secondary research objective H: To determine the extent to which the financial services institution uses big data to make decisions.</td>
</tr>
</tbody>
</table>
Proposition D: The financial services institution integrates data sources from the various marketing disciplines to better understand its customers.

Proposition E: The financial services institution uses big data to glean consumer insights.

Proposition F: The financial services institution uses various customer insights within the various marketing disciplines/activities.

Proposition G: The financial services institution uses big data from a market orientation.

Proposition H: The financial services institution uses big data to make decisions.

4.4 RESEARCH DESIGN

It is stated by Berndt and Petzer (2011:31) and Wild and Diggines (2013:54) that research design is the outline, framework or plan for the research project, and that it ensures the researcher reaches their research objectives. It is a statement of the essential elements of the study that provide the basic guideline for the details of the project (Wild & Diggines, 2013:54). It is stated by Shiu et al. (2009:61) that the research design serves as the master plan of methods used to collect and analyse the data. There are various aspects of research design such as sources of data, types of information and data collection methods which will now be discussed.

4.4.1 Sources of data

Data can be collected using methods that result in both primary data and secondary data. Primary data is information collected for a current research problem or opportunity; it is collected from scratch by means of surveys, observations or experimentation (Shiu et al., 2009:45; Wild & Diggines, 2013:74). Secondary data, which is information that already exists, is gathered for some other purpose and not for the purpose of the specific study (Shiu et al., 2009:45; Wild & Diggines, 2013:74). According to Berndt and Petzer (2011:31), the researcher must determine if the research has been done before and whether they don’t need to collect information, or if it hasn’t been done before they need to go ahead and gather information. For the purpose of this study, both primary and secondary data will be used, as there is existing information, but not necessarily specific to the South African environment.
4.4.2 Types of information

The two types of research design are exploratory research design and conclusive research design (Wild & Diggines, 2013:56). Explorative research is used when information is required about a problem, opportunity or phenomenon, whereby you would collect data that can contribute to more meaningful research questions. Conclusive research, otherwise known as explanatory research, assists the researcher to study the research problem in a conclusive form, after which they would then choose a course of action from the various alternatives presented (McGivern, 2013:46; Wild & Diggines, 2013:57).

Conclusive research can be further broken down into descriptive or causal research. Causal research is aimed at showing causality between variables and occurrences; it is used to reveal cause and effect relationships and develop causal explanations (Kolb, 2010:27; McGivern, 2013:47; Wild & Diggines, 2013:57). Descriptive research uses a set of scientific methods and procedures to collect raw data and create data structures that describe the existing characteristics (Kolb, 2010:25; McGivern, 2013:47; Shiu et al., 2009:61-62). McGivern (2013:47) and Wild and Diggines (2013:57) refer to descriptive research as identifying patterns or trends in the information, as well as answering clearly defined research questions.

This study is explorative research which is used to classify problems or opportunities and to acquire insight and understanding rather than it providing conclusive information to determine a course of action (Shiu et al., 2009:61). It is stated by Wild and Diggines (2013:56) that the best guarantee of a good exploratory research is based on the researcher’s willingness to investigate new ideas and suggestions. This research is classified as explorative as it requires insight and a better understanding as to what is happening in the South African environment. It will not result in conclusive information; it will rather provide some clarity and a better understanding for financial services institutions.

Methods for conducting exploratory research include the following: secondary data analysis (a survey of existing relevant literature), experience research (a survey among people with practical experience of the problem), case studies (an analysis of examples that stimulate insight) and pilot studies (information collected from the
actual subjects of the research project which will serve as a guide for a larger study) (Wild & Diggines, 2013:56). For the purposes of this research, a case study approach will be used.

Cooper and Schindler (2011:182) state that the case study approach is used as a form of intense investigation when the researcher selects a specific company to profile to acquire substantial detail as the company portrays an example of critical, extreme, or an unusual case. A financial services institution in South Africa has been chosen due to the fact that it is part of the industry known for gathering a wealth of data from customers. The particular institution was chosen because it is known to be innovative, using data to better connect with its customers. As mentioned before, the specific financial services institution has requested to remain anonymous for this study and reference will only be made to “the financial services institution”.

It is stated by Berndt and Petzer (2011:32) that exploratory research is typically linked to qualitative methods. The various research designs can be qualitative or quantitative in nature (Wild & Diggines, 2013:59). Quantitative research aims to determine the relationship between one thing and another in a population by means of statistical, mathematical or computational techniques. This type of research places heavy emphasis on using formalised standard questions and predetermined response options in questionnaires or surveys aimed at a large number of respondents (Shiu et al., 2009: 172; Wild & Diggines, 2013:59). Qualitative research involves exploring issues, understanding underlying reasons and motivations. This type of research provides excellent preliminary insights into building marketing models (Shiu et al, 2009:172; Wild & Diggines, 2013:59). For the purposes of this study, qualitative research will be used, which will be explained in detail in section 4.5.

4.4.3 Data collection method
Data collection methods varies depending on if the study is a qualitative or quantitative study. Due to the fact that this is a quantitative study and a case study specifically, data collection methods will be narrowed down to the following: in-depth interviewing, focus groups, observation techniques and projective techniques (Berndt & Petzer, 2011:91).
To break it down even further, according to Henning (2013:48) there are different methods for the genre of case studies for qualitative research. These are: observation, interviewing, documents and artefacts and recording naturally occurring interaction. Kolb (2010:30) is of the opinion that interviews can be broken down further into the following categories: in-depth, intercept and expert. In-depth interviews are used to obtain information on how a participant feels about an issue. Intercept interviews are often referred to as “person-on-the-street” interviews, which are short and are limited to a specific topic. Lastly, expert interviews are not current or potential customers but rather individuals who have specific knowledge (Kolb, 2010:31).

Shiu et al. (2009:210) is of the opinion that specifically within in-depth interviews there are four types. These include: the executive interview, experience interview, protocol interview and articulate interview, each of which will now be briefly explained.

An executive interview is a personal exchange with a business executive which takes place in the executive’s office. An experience interview is about gathering opinions and insights informally from people who seem to be knowledgeable on the issues associated with the research problem. Protocol interviews place a person in a specified decision-making situation and ask them to verbally discuss the process and activities they would focus on. Lastly, an articulate interview focuses on listening and identifying conflicts in a person’s orientation towards a product, service or concept (Shiu et al., 2009:211).

Berndt and Petzer (2011:32) are of the opinion that there are three main groups of data collection methods: human, mechanical/electronic or self-administered collection. Human collection methods involve the use of people in the form of interviews to gather the information, electronic methods involve using online surveys or machines to collect the data and lastly, in self-administered methods, the respondent is provided with instructions to complete without the assistance of anyone (Berndt & Petzer, 2011:32). For the purposes of this research, executive human interviews will be used, which will be described in detail in section 4.5.2.2.
4.5 QUALITATIVE RESEARCH DESIGN

Due to the fact that this study is an example of qualitative research, the following section starts with a discussion of the various reasons for having chosen this research design for this particular study, followed by the various research methods and sample plans

4.5.1 Motivation for choosing qualitative research

This study will take the form of qualitative research, due to the fact that the richness of the qualitative data collected can often supplement facts gathered through other data collection methods (Shiu et al., 2009:172). It is stated by Shiu et al. (2009:173) that there are various guidelines/reasons for choosing qualitative research, one of which is being able to build theories and models to explain market place behaviours or relationships between two or more marketing constructs. Wild and Diggines (2013:90) support this by saying it is best to use qualitative research to explore new markets, countries or ideas, as it assists in gathering insights into markets or areas where there is little information. It is best used when conducting exploratory studies in order to define a more complex problem (Wild & Diggines, 2013:89). Henning (2013:3) suggests that when using qualitative research, the variables are uncontrolled, unlike in quantitative research, and it is this freedom that the researcher wants to capture, they want to understand, explain, without pre-emptively placing that understanding in boundaries. According to Wild and Diggines (2013:87) qualitative research relies on detailed descriptions by participants to gain insight into a particular problem.

Kolb (2010:29) states that qualitative research is sometimes chosen because participants belong to a distinct segment. It is stated by Berndt and Petzer (2011:84) that in doing qualitative studies you aren’t selecting randomly chosen participants. It requires developing a relationship with them that meets particular criteria.

In motivation for selecting qualitative research as the most appropriate selection for this study, advantages and disadvantages of the method will now be discussed.
Advantages of qualitative data are mentioned below.

- **Costs and time:** It is both economical and timely due to the fact that the sample size is smaller, that is, there are fewer participants (Kolb, 2010:29; McGivern, 2013:53; Shiu *et al.*, 2009:174).

- **Richness of the data:** It allows the researcher to gather in-depth information regarding the participants’ perceptions, attitudes, emotions and beliefs (McGivern, 2013:52; Shiu *et al.*, 2009:174; Wild & Diggines, 2013:90).

- **Building models and scale measurements:** Some qualitative studies provide excellent insight into building models and scale measurement (Shiu *et al.*, 2009:174).

- **Flexibility:** it allows the researcher the freedom to explore new ideas (McGivern, 2013:53).

There are also various challenges that a researcher could encounter when using qualitative research, which have been described below.

- **Lack of generalisability:** Due to the small sample size, the information can’t be generalised or representative of larger groups/populations (Kolb, 2010:29; McGivern, 2013:53; Shiu *et al.*, 2009:174; Wild & Diggines, 2013:89).

- **Inability to distinguish small differences:** Researchers using qualitative are forced to analyse the data at an aggregated level, which eliminates the ability to find small differences (Shiu *et al.*, 2009:175).

- **Difficult to establish reliability and validity:** With quantitative research there are well-developed procedures to assess reliability and validity, the procedures for qualitative research aren’t as well defined, making the task a bit more difficult (Shiu *et al.*, 2009:175).

- **Finding well trained interviewers:** Qualitative research requires informal unstructured method of obtaining information that requires extensive training (Kolb, 2010:29; Shiu *et al.*, 2009:174).

The research has taken these advantages and disadvantages into consideration, and the deliberation involved will be explained later in this chapter.
This research requires in-depth rich data to uncover the vague topic of the usage of data in a financial services institution within South Africa from a marketing perspective. The insights uncovered from the rich data are to be tested in the form of a model adapted from Byrom et al. (2001:336), as illustrated in Figure 3.10, to determine if and how a financial services institution uses big data for marketing and business strategies. The respondents required for the interview are narrowed down specifically to people making use of big data in the financial services institution. In summary, the researcher used qualitative research to determine the extent to which big data is being used in a financial services institution from a marketing perspective.

4.5.2 Data collection

As previously mentioned, there is primary and/or secondary data that needs to be collected for a research study. For the purposes of this study, both primary and secondary data will be used. The secondary data used in this study will consist of international white papers, website articles, published books and conferences, where the usage of insights from data has already been practiced to its full potential, and can be used as a benchmark for the financial industry. The collection of primary data is through in-depth interviews, that is, semi-structured executive interviews, which will now be explained in detail.

The two aspects that need to be addressed with data collection are: firstly from whom is the researcher collecting the data from, and secondly how is the researcher going to go about doing it. Both of these will be explained next.

4.5.2.1 Population and sample design

This section provides a complete breakdown of who will be chosen to be interviewed, and the factors of selection are summarised in Table 4.2. A population, according to Fox and Bayat (2010:30) and Wild and Diggines (2013:183), comprises the total collection of all the units of analysis about which a researcher requires to reach distinct conclusions. It is stated by Kolb (2010:180) that it is important to clearly define the target population in order for the correct individuals for the sample frame to be chosen. A sample frame consist of a list of all eligible sampling units (Shiu et al., 2009:451). A sample unit, as stated by Wild and Diggines (2013:183) is
a selection of the elements of the populations. A sampling element is a person from the target population from which information is sought (Shiu et al., 2009:450).

A sampling method is the way the sample units are selected (Berndt & Petzer, 2011:173). The researcher has the option of choosing between two main types of sampling methods, those being probability or non-probability sampling. Probability sampling is where every element has a known chance of being selected and non-probability sampling is where every element has an unknown chance of being selected (Berndt & Petzer, 2011:172; Shiu et al., 2009:470). Probability sampling methods include simple random sampling, cluster sampling, stratified sampling and systematic sampling (Berndt & Petzer, 2011:189; Fox & Bayat, 2010:54; Kolb, 2010:183; Shiu et al., 2009:471). Non-probability sampling methods include convenience sampling, judgment sampling, snowball sampling and quota sampling (Berndt & Petzer, 2011:189; Fox & Bayat, 2010:58; Shiu et al., 2009:480).

**Table 4.2: Sampling plan**

<table>
<thead>
<tr>
<th>Elements</th>
<th>Application to study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target population</td>
<td>All South African companies making use of data from a marketing perspective</td>
</tr>
<tr>
<td>Sampling frame</td>
<td>The list of attendees from various companies of the Big Data Reform conference held in Parktown, Johannesburg</td>
</tr>
<tr>
<td>Sampling unit</td>
<td>Case study approach: A selected company in the financial services industry</td>
</tr>
<tr>
<td>Sampling element</td>
<td>Business and Systems Manager or Marketing Manager</td>
</tr>
<tr>
<td>Sampling method</td>
<td>Non-probability sampling: snowball sampling, personal interviews</td>
</tr>
<tr>
<td>Sample size</td>
<td>Until saturation is reached (eight respondents chosen)</td>
</tr>
<tr>
<td>Time frame</td>
<td>June-July 2015</td>
</tr>
</tbody>
</table>

Source: Researcher’s own construct.

The target population was South African companies that use big data from a marketing perspective. The researcher defined the sampling frame as a list of all the delegates who attended the Big Data Reform conference. This ensured that the participants would qualify in terms of having enough knowledge of the term big data. Due to the fact it was a case study approach, the chosen company was selected on
the basis of them being open to being interviewed on a topic that added competitive advantage, on the premise that a confidentiality agreement was in place.

Cooper and Schindler (2011:182) argue that in a case study approach, participants are invited to tell stories of their experiences with those chosen representing different levels within the same company or different perspectives of the same situation. This research is using the sampling elements of employees across marketing disciplines (loyalty cards, social media, customer relation manager, ecommerce) in various positions (marketing managers, senior brand managers, e-commerce managers, digital managers, brand managers, marketing assistants), and will also employ interviews with the I.T. department, who gather and prepare the data (business and systems managers, analysts). Non-probability snowball sampling will be used, which according to Shiu et al. (2009:482) involves identifying and qualifying a set of initial prospective respondents, who can, in turn, help the researcher identify additional people to include in the study. The researcher will start with the employees who attended the conference and probe these employees to discover other respondents to interview who work with big data.

According to De Vos et al. (2005:328), there are no rules for sample size in qualitative research. This is determined by what you want to know, the purpose of the inquiry, what is at stake, what will be useful, what will have credibility and what can be done with the available resources. Onwuegbuzie and Leech (2007:116) suggest that sample sizes in qualitative research should not be too small because it is difficult to achieve saturation. They also state that at the same time sample sizes should not be too large because this makes it difficult to undertake a deep case-oriented analysis. There are six factors one can employ to determine appropriate sample size of a case study, stated by ESRC (2012:18).

- Saturation: A researcher continues to sample relevant cases until no new theoretical insights are being gleaned from the data (ESRC, 2012:18; Marshall, Cardon, Poddar & Fontenot, 2013:11; Mason, 2010). In such situations the researcher can’t possibly know how many cases they will have to collect data from.
• Minimum requirements: There are various opinions regarding what is believed to be the minimum requirements for sample size, some say a sample size should be between 20 and 30, others believe it can range between one and 95, whilst others believe it can be between five and 30 (ESRC, 2012:18).

• Style or theoretical underpinnings: Life story research is likely to entail a much smaller sample size because of its fine-grained analysis that is involved (ESRC, 2012:18).

• Heterogeneity of population: For some research questions, the sample population may be quite heterogeneous with a good deal of sub-group variability, and the researcher will continue sampling to reach some of this variability (ESRC, 2012:18; Mason, 2010).

• Breadth and scope of research questions: Some research questions have a narrow research focus, and in these cases, smaller sample sizes are required (ESRC, 2012:18; Marshall et al., 2013:14; Mason, 2010).

• Expertise in the chosen topic can reduce the number of respondents needed in a qualitative study (Marshall et al., 2013:14; Mason, 2010).

Mason (2010) notes that if the researcher abides by the principles of qualitative research, sample size in the majority of qualitative studies should follow the concept of saturation. Therefore, for the purposes of this research, sample size will be based on saturation, when the researcher identifies topics/themes constantly being brought up across the range of respondents. However, the last factor is also considered for this study, as only respondents who use big data in their capacity can contribute meaningfully. Due to the fact that it is a relatively new term, respondent numbers are small. A limited number of people are currently working with big data.

As mentioned before, when employing the point of saturation to determine sample size, it is difficult for the researcher to pre-emptively provide an approximate sample size. Marshall et al. (2013:13) state that particularly for case studies, which are the most difficult, the rule of thumb is to have at least six interviews. Based on the fact that there are limited human resources using data and based on the fact this is a case study approach, a sample size of eight people will be interviewed. The personal
interviews have been set up with the prospective participants, with meeting requests sent to them during the months of June and July, 2015.

4.5.2.2 Data collection method: In-depth interviews
There are various methods that can be used for qualitative research, which were previously listed in section 4.4.3 as focus group interviews, in-depth interviews, observation and projective techniques. Henning (2013:91) opines that interviews are useful and a productive data collection technique most suited for qualitative research. For this study the researcher believed the best suited technique to address the research problem and meet the research objectives would be in-depth personal interviews.

An interview is a discussion between two people that focuses on a specific topic (Berndt & Petzer, 2011:91). An in-depth interview, according to Wild and Diggines (2013:95), is a relatively unstructured, extensive interview in which the interviewer asks many questions and probes for in-depth answers. A unique aspect of this data collection method is that the interviewer uses probing questions as a technique to get more data on the topic from the respondent (Shiu et al., 2009:206). Shiu et al. (2009:206) state that interviewing allows the researcher to capture both attitudinal and behavioural data from the respondents, which spans all time frames (past, present and future).

Berndt and Petzer (2011:91) are of the opinion that in qualitative studies, interviews are rarely structured and they are either in-depth or semi-structured. It is stated by Shiu et al. (2009:205) that in-depth interviews represent a process in which a trained interviewer asks a subject a set of predetermined and probing questions, usually in a face-to-face setting. Wild and Diggines (2013:96) are of the opinion that in-depth interviews are suitable for occasions where a complex situation exists and the main objective is to gain insight rather than to measure. Such interviews will assist the researcher to achieve their objective of finding more insight into the usage of big data within the company.
There are strengths and weaknesses to in-depth interviews as a technique, and these need to be clarified before this chapter continues with the study's methodology.

Strengths of conduction in-depth interviews are:

- Rich insight: Deeper insight can be gained because more time can be spent with the respondent. This extra time enables the researcher to probe a particular issue for more detail (Kolb, 2010:30; McGivern, 2013:163; Wild & Diggines, 2013:97).
- The effect of peer pressure can be eliminated (Wild & Diggines, 2013:97).
- Ease of scheduling: An in-depth interview is easier to schedule than a group interview (Wild & Diggines, 2013:97).
- The interviewer can build trust, which assists them when probing for more detailed information, and makes the respondent more relaxed when discussing confidential information (Wild & Diggines, 2013:97).
- Recording: The interviewer can observe and record the interview whilst taking notes (Wild & Diggines, 2013:97).
- The interviewer has a chance to explore a respondent’s initial answer with additional probing and follow-up questions (Kolb, 2010:30; Shiu et al., 2009:208; Wild & Diggines, 2013:97).
- Enables the interviewer to get the same level of knowledge and understanding as the participants (Henning, 2013:75).

There are also some weaknesses in conducting in-depth interviews which are described below:

- Time and cost: They can be quite lengthy, hence it is important to state the required time up front, it also means fewer interviews can be conducted. They can also be costly, in terms of petrol getting to interviews as well as the purchasing of small gifts as gestures to show appreciation (Kolb, 2010:30; Wild & Diggines, 2013:97).
- The in-depth nature of the information collected makes analysis more time consuming, (McGivern, 2013:162; Shiu et al., 2009:208; Wild & Diggines, 2013:97).
• Difficulty in analysing: Highly skilled or qualified interviewers are required to conduct the interview (Wild & Diggines, 2013:97).
• Using an interviewer introduces the element of subjectivity (Wild & Diggines, 2013:97).
• Interviewer fatigue: The length of time taken to do an interview can result in interviewer fatigue, whereby the interviewer may begin to lose their initial drive for the duration of these interviews (Henning, 2013:75; Wild & Diggines, 2013:97).
• Errors: Errors can occur in transcription, where the interviewer could misinterpret what the respondent has said. Malfunctions of machinery could also happen and the recording of the interview may be lost (Shiu et al., 2009:208; Wild & Diggines, 2013:97).

The researcher has taken these strengths and weaknesses into account when planning the interviews, which will all be described in detail next.

The interviews took between 40 and 50 minutes, to prevent interview fatigue. The interviewer ensured they stuck to the allotted time frame and also that no more than two interviews were scheduled on one day. The researcher performed executive in-depth interviews, which involve an interview with a business executive that usually takes place in the executive’s office. This required well-trained and experienced interviewers because the topics were often sensitive and highly technical (Shiu et al., 2009:210). According to Cooper and Schindler (2011:168) and Wild and Diggines (2013:117), this is an interview in the respondent’s office through a prearranged formal appointment, sent in the form of a meeting request to their calendars. However, as a result of the working environment being quite busy, the respondent was given the option of the interview being conducted via another medium, like Skype or the telephone, whichever medium best suited the participant.

As previously mentioned, probing is an important characteristic of an in-depth interview. The interviewer used probing, which is the technique used to turn the response into a question, encouraging the respondent to further explain the first response (Shiu et al., 2009:206). There were probing questions as an extension to
each question, so when the interviewer felt that the respondent had exhausted all they could to say on the topic, they could use these probing guidelines as a way to get a more in-depth understanding. The general idea is the more the subject speaks about a subject, the more likely they are to reveal underlying attitudes, emotions, motives or behaviours (Shiu et al., 2009:206). When it comes to analysing the data, the researcher can then differentiate the difference between top-of-mind knowledge and knowledge gained through probing.

RWJF (2008) states that the interview will be a semi-structured interview whereby it is still a formal interview, however the interviewer uses an interview guide or discussion guide. This discussion guide lists the range of topics that need to be discussed during the interview (RWJF, 2008). The interviewer is allowed to veer from the guide when the conversation goes on a tangent that the interviewer feels is appropriate and generative of information. The guide includes various probing questions to be used at the interviewer’s discretion (RWJF, 2008).

The discussion guide will be constructed based on the same themes mentioned in the model. The discussion guide (refer to Appendix A) is constructed against the following research objectives.

- **Section A:** Introduction to the study (2 minutes) – the respondent will be thanked for their time and the importance of confidentiality will be explained. The interviewer will inform to the respondent that transcriptions of the interview will be sent through to them once completed for them to ensure they are happy that what has been transcribed is an accurate representation of what they said in the interview. This section is also used to obtain permission to record the interview. After this, recording will commence.

- **Section B:** Definition of the term big data (3 minutes) – section B is to be used as a screening question to see if the respondent qualifies to partake in the interview. The probing questions are based around the characteristics of the “seven V’s” of big data. Due to the fact that the topic is so specialised, the research requires that all potential respondents answer this question to ensure they are knowledgeable/experienced enough on the topic of big data to partake in the study (Shiu et al., 2009:362). Snowball sampling should also
act as a screening process to ensure all respondents scheduled for an interview work with big data.

- **Section C: Usage of big data from a marketing perspective (10 minutes)** – this section consists of two related questions. First, question 2 and 3 (combined), which are designed to discover to what extent the individual uses data within a B-2-B and/or B-2-C context. Question 4 aims to discover the extent of data usage in the respondent’s day-to-day activities as well as the usage of data from a company perspective.

- **Section D: Various data sources (10 minutes)** – this section consists of two questions. Question 5’s purpose is to understand the various data sources the individual makes use of within their department. After the respondent has finished answering the question, the researcher can probe by mentioning other data sources, enquiring whether the respondent makes use of them. The second part to section D, question 6, elicits an understanding of the extent to which the data sources mentioned above are integrated, or indeed not integrated.

- **Section E: Various insights (5 minutes)** – the purpose of this section is to establish an understanding of the various insights the respondent is trying to discover when working with big data.

- **Section F: Marketing activities (10 minutes)** – this section investigates which marketing activities are reliant on big data, and which marketing activities make use of data on a day-to-day basis. Once the respondent has exhausted their answer, the interviewer will start with probing questions. To assist with this, the interviewer will read out from a list of other marketing activities that the respondent may have failed to mention in their initial answer.

- **Section G: Market orientation and decision-making (5 minutes)** – this section contains two questions. Firstly, question 9 is structured to examine the extent to which the respondent uses big data to drive either a marketing-orientated business or a sales-orientated business. Before this question is asked, the terms ‘market-orientated’ and ‘sales-orientated’ are clarified for the respondent. Question 10 is designed to determine the degree to which the respondent uses the insights found from data to inform decision-making.
Section H: Conclusion (5 minutes) – this section comprises two questions. First, question 11 aims to determine what the respondent believes the future of big data to be. The last question, question 13, merely involves the interviewer telling the respondent what their intake of the interview was as a summary. The purpose of this question is to secure confirmation that the interviewer’s perception of what was being said is aligned with what the respondent intended to say. The interview then ends off with the interviewer thanking the respondent for their time.

The discussion guide was piloted in order to see if the questions would be asked in the right way and would obtain the desired responses from the participants. The first participant was made aware that they were part of the piloted version, so they should not be caught off-guard if the questions did not flow smoothly. Adjustments were then made to questions 2 and 3, because the pilot illustrated that it made sense to combine them. Question 4b was removed as it was redundant. Each interview was to be conducted, recorded and transcribed by the interviewer themselves. This was done for various reasons, listed below.

- Due to the fact that the topic of big data is a sensitive issue due to the competitive advantage it can offer a company, the researcher needs to ask questions strategically so as to not jeopardise the company’s competitive advantage. Henning (2013:95) reminds us that the interviewer should possess the necessary skills and knowledge to conduct the interview, and treat sensitive topics with the requisite professionalism.
- To avoid any misinterpretations or crucial information, Kolb (2010:235) is of the opinion that it is best to record the interview to be able to go back and review things when analysing as the interviewer is so busy conducting the interview they may miss out on fundamental points.
- Transcribing the interviews personally assists the researcher to being immersed in the information which could assist with the analysis of the qualitative data.
- It is best to do the transcription straight after the interview as well as for the interviewer to do it themselves as they have a better understanding of accents and tones that were used (Henning, 2013:76).
Once the transcriptions were compiled, they were sent back to the participants to ensure that nothing was misinterpreted. Due to the fact that the topic is sensitive, and in order to adhere to the confidentiality agreement, parts of the transcription may need to be blanked out if the respondents revealed information that is too sensitive and will contravene the confidentiality agreement.

4.5.2.3 Flow of conducting an interview

Henning (2013:70-71) suggests that generally interviews follow a certain flow which will be laid out below.

- The interview commences with the interviewer setting the scene. This is done in section A, and involves informing the respondent of the process going forward.
- The interviewer could provide the interviewee with the discussion guide before to give them time to reflect. This was not done as it may have pre-empted certain responses and alerted participants to possible sensitivities of the interview as big data is not something that is spoken about openly due to the competitive advantage it can add to a company.
- The interview proceeds with questions and answers but also clarifications, explorations and pauses where appropriate. This was done throughout the interview, with probing questions to follow up each of the questions if the researcher felt that the respondent hadn’t provided enough detail or they misunderstood the question.
- As the process continues, the interviewer may find the need to summarise some of the conversation in order to get a broader picture of what was being said. In terms of this research, this formed the last question, question 13, at the end of the discussion guide, to avoid any misinterpretation.
- Another thing the interviewer may do is ask for expansion or clarification of a topic, which could be done as additional probing.
- During the process the researcher should keep an eye on the recording because there is always the possibility of the machine malfunctioning. It is for this reason that the researcher used two devices, using one for a backup recording.
Towards the end of the allocated time for the interview, the researcher should round off the interview, asking if there is anything else the respondent would like to add. After which the researcher will conclude by thanking them for their time.

In conclusion, the semi-structured in-depth interviews were conducted with a discussion guide, and probing questions were used when deemed appropriate in order to dig for richer insights.

4.6 DATA ANALYSIS
Upon the completion of the interviews the data was analysed, which according to De Vos et al. (2002:339) is the process of bringing order, structure and meaning to the mass of collected data. Kolb (2010:29) is of the opinion that interpretation of qualitative studies requires special skills but when correctly analysed it provides a rich source of information.

The data was analysed through content analysis, which according to Malhotra and Birks (2007:251), requires the researcher to implement a systematic procedure of taking individual responses and categorising them into larger themed categories or patterns, simplifying according to rules derived from existing theory. Elo and Kyngäs (2007:108) argue that the purpose of content analysis is to provide knowledge, new insight, a representation of facts and a practical guide to action. Hence, the discussion guide was structured around big data themes (refer to Figure 3.10) resulting in the findings from the study being incorporated into the groups indicated in the model being, type of data, type of insight, type of marketing activity and type of decision-making, which were defined in the literature review.

De Vos (1998:338) mentions that there are five approaches to data analysis, these being those established by Lincoln and Guba (1985), Huberman and Miles (1994), Morse and Field (1996), Marshall and Rossman (1989) and Tesch (1990). Each of these have been summarised in Table 4.3.
Table 4.3: Qualitative analysis approaches

<table>
<thead>
<tr>
<th>Analysis Approach</th>
<th>Brief description</th>
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<tbody>
<tr>
<td>Lincoln and Guba’s approach</td>
<td>This is a constant comparative method which takes place in four stages, and is used for deriving theory and not simply processing data.</td>
</tr>
<tr>
<td>Huberman and Miles’s approach</td>
<td>Data analysis consists of three linked sub-processes which include data reduction, data display and conclusion drawing or verification.</td>
</tr>
<tr>
<td>Morse and Field’s approach</td>
<td>The process consists of four steps being comprehending, synthesising, theorising and recontextualising. These steps encourage the user to identify categories and sub-categories for making the invisible obvious.</td>
</tr>
<tr>
<td>Marshall and Rossman’s approach</td>
<td>Analysis is done to distil general statements about relationships between categories of data.</td>
</tr>
<tr>
<td>Tesch’s approach</td>
<td>This of eight steps the researcher uses to analyse the data, which is focused on using transcriptions to identify topics.</td>
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</tbody>
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The method chosen for this study, as established before, is the Morse and Field approach. This choice is due to the approach being a process of fitting data together, making the invisible obvious, linking and consequences. With big data having so many facets and due to the fact that various sections within the marketing department are being questioned, this study requires a solid process of fitting the data together. This will be discussed in detail below.

4.6.1 Morse and Field approach

The Morse and Field approach consists of four cognitive processes which are integral to all qualitative analysis methods, being: comprehending, synthesising, theorising and recontextualising (De Vos, 1998:340-341; Morse, 1994:25). It is important to note that the processes generally occur sequentially, however sometimes looping backward and forward is inevitable as gaps may be detected in certain areas (Morse, 1994:26). The discussion will begin with the first step, namely, comprehending.
4.6.1.1 Comprehending

Comprehension is the initial step in which the researcher attempts to know everything they can on the subject matter (Galli, 2009:73; Morse, 1994:26). It is important to keep the literature separate; the goal in this stage is to gain maximal awareness and to recognise leads without being led. Then the researcher should enter the setting relying on the ability to view the experience from the participants’ perspective. Comprehension is reached when the researcher transcribes, checks, corrects and codes the interview to ensure he/she has enough data to be able to write a complete, detailed, coherent and rich description. It is stated by Henning (2013:76) and McGivern (2013:424) that transcription should occur as soon as possible, and should preferably be done by the interviewer to avoid errors or omissions. The revision of the interviews also provides the opportunity for the researcher to immerse themselves in the data.

According to Morse (1994:27) there are several conditions that are crucial to optimal comprehension. These are discussed below.

- First, the researcher should enter the setting as a stranger, someone who is impartial to the environment and can be sensitive. In this study the researcher had never met any of the respondents before, and he/she would have to build rapport with the respondents (McGivern, 2013:363; Morse, 1994:27).
- Secondly, the researcher must be capable of passively absorbing and learning non-judgmentally. In doing this they can absorb everything relevant to the topic at hand. A discussion guide can be used to keep the interviewer on track and not veer off the topic at hand (Henning, 2013:68; Morse 1994:27).
- The third essential condition to be met is that the participants must be open to share their world with a stranger/researcher (Morse, 1994:27). This occurs when they trust that the researcher will maintain their anonymity (Henning, 2013:73), and that their responses will not have any ramifications for them. In this research trust was established based on a confidentiality agreement.
The process of comprehending can be expedited using three techniques, according to Morse (1994:29).

- First, adopting the attitude of active inquiry, whereby the researcher actively asks the respondents questions about the data and seeks answers. They then absorb everything that has been said. This is done through the usage of probing questions under each of the questions in the discussion guide.
- The second technique involves constantly taking descriptive notes, and ensuring that they are as complete and detailed as possible (Elo & Kyngäs, 2007:109; Henning, 2013:73; Morse, 1994:29).
- The third technique is to keep to the literature separate from the data one is collecting, and a researcher should therefore label their notes cautiously. The literature mentioned in Chapters 2 and 3 was not read over before interviewing so as to avoid subjectivity.

Coding is an important part of this process. It involves the researcher identifying icons, indices or symbols in the interview transcripts which could reveal implied meanings, cultural values or linkages to other concepts (Morse, 1994:29). It is within this process that the researcher simplifies the data by placing it into categories with common themes or clustering similar events (Elo & Kyngäs, 2007:112; Galli, 2009:73). Doing so will assist the researcher to identify if there are any holes in the data, and if there are, they may need to revisit and collect additional data. The end result is that the categories should reflect the subject of the study in a reliable manner (Elo & Kyngäs, 2007:112). The researcher has created a spreadsheet for each question, where all the data was compiled into various categories based on common themes.

Comprehension is reached when the researcher is able to identify stories that are part of the topic and patterns of experience and predict their outcome (De Vos, 1998:341). Comprehension involves the researcher sifting through the information line for line, having transcribed the transcripts themselves, and going through them numerous times to ensure confidentiality is adhered to. Once the researcher finds no new patterns emerging from the data, comprehension has been reached, or as
previously mentioned, saturation has been reached (ESRC, 2012:18; Marshall et al., 2013:11; Mason, 2010).

4.6.1.2 Synthesising

It is stated by Morse (1994:30) that synthesising is the “merging of several stories, experiences or cases to describe a typical, composite pattern of behavior or response”. It is the process of sifting out the important/significant from the less important/less significant (De Vos et al., 1998:30; Galli, 2009:73). According to De Vos (1998:341) there are two types of analysis that can be done, which are mentioned below:

- Inter-participant analysis or the comparison of transcripts from several respondents.
- Analysing the categories, which is sorting the data according to commonalities.

Synthesising begins with doing inter-participant analysis and comparison analysis, which assists the researcher to synthesise, interpret, link, see relationships, speculate and verify findings (Elo & Kyngäs, 2007:112). It is stated by Galli (2009:73) and Walker, Cooke and McAllister (2008:86) that synthesising involves comparison of participants to generate themes or merging cases to describe typical patterns of behaviour (refer to Appendix D). In this research, three interpretation categories and seven interpretation subcategories were identified, all stemming from the in-depth interviews. These are shown in Table 4.4.
The researcher is then able to describe “aggregate stories”, and it is important that these factors are significant enough and aren’t just placed there inappropriately (Morse, 1994: 31). In this step, generalisations are searched for first. The researcher grouped common themes together, and in instances where there was one outlying theme, it was discarded due to it not being deemed as significant enough.

4.6.1.3 Theorising

Theorising is considered to be the sorting phase (Galli, 2009:74). It is the process of fitting alternative models to the data, the process of constructing alternative explanations and holding these against the data until the best fit is obtained which explains the data (De Vos, 1998:341; Galli 2009:74). The researcher needs to keep in mind that theory is just a tool to guide investigation; the theory does not necessarily have to be the structure or frame within which to sort the raw data collected (Morse, 1994:32). Theorising is the way of revealing the obvious, as well as the implicit, the unrecognised and the unknown; it is the process of constructing alternative explanations and holding these against the data until the best fit is found.
to explain that data (Morse, 1994:32). It is important to note however that this step cannot happen without the preceding steps having been completed.

De Vos (1998:341) and Galli (2009:74) state that there are three steps to theorising. The first is to ask questions about the data that will create links to the existing theory. The second step requires the researcher to use lateral thinking in terms of examining similar concepts in other settings or other complementary data sources in other contexts. The third step involves the systematic and inductive development of formal theory from the data. Morse (1994:33) states that there is also a forth step, which incorporates hypothesising casual links with regard to certain behaviours or experiences.

The researcher will link all the findings back to the literature cited in Chapters 2 and 3, to generate meaning, whilst keeping in mind that the findings can also fall outside of the literature. There may be some themes that are not recognised within the literature but may be significant enough to report as they could constitute something unique from the South African financial services context.

4.6.1.4 Recontextualising
The last cognitive process is recontextualising, which is the development of the theory so that the theory is applicable to other settings and to other populations (Galli, 2009:74; Morse, 1994:34). In this process, the established theory plays a critical role as it supplies a context in which the researcher’s model links the new findings the established model (Henning, 2013:69). The approach encourages the researcher to discover any new/surprising dimensions by generating categories and testing them (De Vos, 1998:342). The goal of recontextualisation is to place the results in the context of the established knowledge, to identify clear findings that support established knowledge/theory and to claim clearly new contributions (Galli, 2009:74; Morse, 1994:34). The researcher will take the results and see if they fit the model presented in Chapter 3 and the findings will be discussed in Chapter 6.

The researcher will follow each of the above four cognitive approaches in analysing the qualitative data collected.
4.6.2 Quality assessment of research

According to Fox and Bayat (2010:107), when using qualitative research, criteria such as trustworthiness and authenticity have been developed as appropriate standards to measure validity and authenticity. According to Marshall and Rossman (1995) all research must respond to canons/questions that stand as criteria against which the trustworthiness of the project can be evaluated; Lincoln and Guba (1985) state that these questions can establish the project’s truth value (as cited in De Vos et al., 2011:351). The truth value can be measured on the following constructs: credibility/authenticity, transferability, dependability and conformability (De Vos et al., 2011:420; Elo et al., 2014:2).

De Vos et al. (2011:420) and Elo et al. (2014:2) refer to credibility as a result of the researcher asking him/herself if there is a match between research participants’ views and the researcher’s reconstruction and representation of them, and whether the subject has been accurately identified and described. Credibility deals with how well the categories cover the data (Elo & Kyngäs, 2007:112). This can be achieved through the triangulation of observers. De Vos et al. (2002:341) suggest that triangulation is when the researcher seeks out several different types of sources that can provide insights about the same events or relationships. Fox and Bayat (2010:107) say that this is used to establish and audit the trail of key decisions and validate those decisions. Triangulation can be used to achieve this through combining data from a variety of observers to yield a more complete picture of the setting, which is the reason why the interviewer is interviewing a variety of people within the various marketing disciplines: this will yield a holistic view. The researcher sent the transcriptions back to the participants for them to confirm that nothing had been misinterpreted. In addition, academic experts have reviewed the findings. Elo and Kyngäs (2007:112) suggest that authentic citations can be used to increase the trustworthiness of a study, as these point out from where or from what kinds of original data categories were formed. The researcher did this in the findings, showing an overview of participants’ citations to support the selected themes.

Transferability involves the researcher asking whether the findings of the research can be transferred from a specific situation or case to another. Where there is transferability, the researcher can refer back to the original theoretical framework.
and to how the data collection and analysis were guided by models (De Vos et al., 2011:420; Elo et al., 2014:2). For this study the researcher tested a model that has been adapted by Byrom et al. (2001:336) (refer to Figure 3.10). This model was initially established for the retail industry, and it has been adapted to include big data and to be used in the financial services industry. The findings and knowledge generated by this study can therefore be transferred to other companies operating in the financial services industry.

De Vos et al. (2011:420) and Elo et al. (2014:2) state the third element of quality assessment of research is dependability, which involves the researcher asking whether the research process is logical, well documented and audited. Lastly, confirmability refers to whether the findings of the study could be confirmed by another, and is ultimately essential to confirm objectivity (Elo et al., 2014:2). The research findings and report will be sent back to the company and respondents for approval that the data captured is true to the findings presented in the report.

4.6.3 Ethics

It is stated by Berndt and Petzer (2011:285) that marketing research needs to accept and understand the critical role that ethics play in every part, every step and every action in the research process.

Common examples of unethical actions associated in research are:

1) Deception – trying to make someone believe something that is not true
2) Invasion of privacy
3) Discrimination or faulty conclusions as a result of bias
4) Disguising sales efforts as marketing research

This research, in particular, should direct its attention towards privacy. Fox and Bayat (2010:148) state that ethics in research involves getting informed consent from those who are being interviewed. It is stated by Shiu et al. (2009:348) that it is important to get the participants approval of the study and the questionnaire, as it commits management to the findings, and provides them with the opportunity to make changes from an ethical point of view.
The researcher will have to pay attention to guaranteeing the participants their anonymity by way of a confidentiality agreement looked over by their lawyers (refer to Appendix C). This confidentiality agreement stipulates that the participating institution remains anonymous and employees’ names do not appear in the study. For this reason, the study will only make reference to “the financial institution”, and the respondents’ departments will remain anonymous. The researcher will also only make the findings available to only the people who were directly involved in the project.

4.7 CONCLUSION
A qualitative research approach was used for this study as it would best meet the research objectives and address the research problem. The various forms of data collection, sample design and analysis where discussed. Due to the fact that qualitative data is difficult to analyse, the truth value of the data is established as important. The researcher concludes by highlighting the importance of ethics due to the fact that the topic at hand is a sensitive one. Chapter 5 will present the findings from the qualitative study.
CHAPTER 5
EMPIRICAL RESEARCH RESULTS

5.1 INTRODUCTION
The purpose of this chapter is to report the results from the qualitative research conducted for this study to meet the primary objective of determining “the extent to which a financial services institution uses big data from a marketing perspective”. The model (refer to Figure 3.10), which is adapted from Byrom et al. (2001:336), will be used to assist the researcher in addressing the primary objective, as the discussion guide was based on the elements of the model. The chapter starts with a review of the questions from the discussion guide that informed the in-depth personal interviews, and looks at them alongside the propositions and interpretation categories discussed by Morse and Field as step two (refer to section 4.6.1.2). This chapter then proceeds by providing research results for each interpretation subcategory along with its corresponding themes. The chapter concludes with a summary of results, briefly relating them back to the research objectives, research propositions, interpretation categories and theory.

5.2 RESEARCH RESULTS
The results of the in-depth interviews with the eight participants, who perform varied roles across the marketing discipline and work with big data, will be discussed after a summary is provided of the research questions from the discussion guide. Each question is set against aims, objectives, literature and are allocated interpretation categories and subcategories.

5.2.1 Aims of the discussion guide questions against research objectives, literature, propositions and interpretation categories and subcategories
Before discussing the research results, a summary of what the research aimed to do is provided in Table 5.1. Links have been made between the discussion guide questions, the research objectives (refer to section 1.5 and section 4.2), the supporting literature (Chapters 2 and 3), interpretation categories and subcategories (stemming from the Morse and Field approach) (section 4.6.1), and research propositions (refer to section 1.6 and section 4.3).
Table 5.1: The aim of the discussion guide against research objectives, literature, propositions and interpretation categories and subcategories

<table>
<thead>
<tr>
<th>Discussion guide question 1: Can you please tell me, in as much detail as possible, what your understanding of the term big data is?</th>
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<tbody>
<tr>
<td><strong>Aim</strong></td>
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<tr>
<td><strong>Research Objective</strong></td>
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<tr>
<td><strong>Literature</strong></td>
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<tr>
<td><strong>Interpretation Category</strong></td>
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</tbody>
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<table>
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<tr>
<th>Discussion guide question 2: Big data can be used to serve the B-2-B (business-to-business) market, can you tell me a bit about how you (if you do) in your role make use of data to address the B-2-B market from a marketing perspective?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aim</strong></td>
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<td><strong>Research Objective</strong></td>
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<td><strong>Literature</strong></td>
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<td><strong>Interpretation category</strong></td>
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<tr>
<th>Discussion guide question 3: Big data can be used to serve the B-2-C (business-to-consumer) market, can you tell me a bit more about how you (if you do) in your role make use of big data to address the B-2-C market from a marketing perspective?</th>
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<tbody>
<tr>
<td><strong>Aim</strong></td>
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<td><strong>Research Objective</strong></td>
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</tr>
<tr>
<td><strong>Interpretation category</strong></td>
</tr>
</tbody>
</table>
Table 5.1: The aim of the discussion guide against research objectives, literature, propositions and interpretation categories and subcategories (continued)

<table>
<thead>
<tr>
<th>Discussion guide question 4: How do you make use of big data within your day-to-day activities from a marketing perspective?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aim</strong></td>
</tr>
<tr>
<td><strong>Research Objective</strong></td>
</tr>
<tr>
<td><strong>Literature</strong></td>
</tr>
<tr>
<td><strong>Interpretation category</strong></td>
</tr>
<tr>
<td><strong>Proposition</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Discussion guide question 5: How does your company as a whole make use of big data from a marketing perspective?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aim</strong></td>
</tr>
<tr>
<td><strong>Research objective</strong></td>
</tr>
<tr>
<td><strong>Literature</strong></td>
</tr>
<tr>
<td><strong>Interpretation Category</strong></td>
</tr>
<tr>
<td><strong>Proposition</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Discussion guide question 6: Could you please explain the various data sources that you encounter in your role?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aim</strong></td>
</tr>
<tr>
<td><strong>Research objective</strong></td>
</tr>
<tr>
<td><strong>Literature</strong></td>
</tr>
<tr>
<td><strong>Interpretation category</strong></td>
</tr>
<tr>
<td><strong>Proposition</strong></td>
</tr>
</tbody>
</table>
Table 5.1: The aim of the discussion guide against research objectives, literature, propositions and interpretation categories and subcategories (continued)

<table>
<thead>
<tr>
<th>Discussion guide question 7: To what degree would you say your department integrates the various data sources for insights?</th>
<th>Aim</th>
<th>To determine the extent to which the various data sources previously identified by the respondent are integrated to gain insights regarding the customer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research objective</td>
<td>Secondary research objective D</td>
<td></td>
</tr>
<tr>
<td>Literature</td>
<td>Chapter 1 and 3</td>
<td></td>
</tr>
<tr>
<td>Interpretation category</td>
<td>1(c) and 3(a)</td>
<td>Proposition</td>
</tr>
</tbody>
</table>

Discussion guide question 8: If you can, please talk a bit in general about what insights do you hope to find when working with big data from a marketing perspective.

<table>
<thead>
<tr>
<th>Aim</th>
<th>To determine what insights the respondents want to glean from all the data in order to provide the researcher an idea of the extent to which data is used to draw marketing insights.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research objective</td>
<td>Secondary research objective E</td>
</tr>
<tr>
<td>Literature</td>
<td>Chapters 1 and 3</td>
</tr>
<tr>
<td>Interpretation category</td>
<td>2(b)</td>
</tr>
</tbody>
</table>

Discussion guide question 9: If you can, tell me a bit about how the results/insights gleaned from processing/integrating various data sources impacts or is used by the various marketing activities.

<table>
<thead>
<tr>
<th>Aim</th>
<th>To determine to what degree the various marketing disciplines use big data to make decisions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research objective</td>
<td>Secondary research objective F</td>
</tr>
<tr>
<td>Literature</td>
<td>Chapters 1 and 3</td>
</tr>
<tr>
<td>Interpretation category</td>
<td>3(b)</td>
</tr>
</tbody>
</table>
Table 5.1: The aim of the discussion guide against research objectives, literature, propositions and interpretation categories and subcategories (continued)

<table>
<thead>
<tr>
<th>Discussion guide question 10: In your opinion, to what extent does big data contributes to you being a marketing orientation driven company and why?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aim</strong></td>
</tr>
<tr>
<td><strong>Research objective</strong></td>
</tr>
<tr>
<td><strong>Literature</strong></td>
</tr>
<tr>
<td><strong>Interpretation category</strong></td>
</tr>
<tr>
<td><strong>Proposition</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Discussion guide question 11: In your opinion, how do you think your company integrates big data into their decision-making?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aim</strong></td>
</tr>
<tr>
<td><strong>Research objective</strong></td>
</tr>
<tr>
<td><strong>Literature</strong></td>
</tr>
<tr>
<td><strong>Interpretation category</strong></td>
</tr>
<tr>
<td><strong>Proposition</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Discussion guide question 12: What do you see as the future of big data, and more specifically the future of big data within your organisation?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aim</strong></td>
</tr>
<tr>
<td><strong>Research objective</strong></td>
</tr>
<tr>
<td><strong>Literature</strong></td>
</tr>
<tr>
<td><strong>Interpretation category</strong></td>
</tr>
<tr>
<td><strong>Proposition</strong></td>
</tr>
</tbody>
</table>
Table 5.1: The aim of the discussion guide against research objectives, literature, propositions and interpretation categories and subcategories (continued)

<table>
<thead>
<tr>
<th>Discussion guide question 13:</th>
<th>I am just going to summarise everything that you have told me. Is there anything you would like to add?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aim</strong></td>
<td>To ensure that there isn’t a misinterpretation in the interviewer’s understanding of what the respondent has said and to give them an opportunity to add anything else before ending off.</td>
</tr>
</tbody>
</table>

The rest of the section provides a discussion of each of the interpretation categories and subcategories identified from the interviews. This is part of the Morse and Field approach of synthesising (refer to section 4.6.1.2). The interpretation category framework for the study is presented in Table 5.2, and is used as the basis for data analysis.

Table 5.2: Interpretation category framework for research results

<table>
<thead>
<tr>
<th>Interpretation category 1: Big data in a financial services institution</th>
<th>Interpretation subcategory (a)</th>
<th>Interpretation subcategory (b)</th>
<th>Interpretation subcategory (c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(a). Characteristic of the term big data in the financial services institution</td>
<td>1(b). Data sources used in the financial services institution</td>
<td>1(c) Integration amongst data sources</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interpretation category 2: The usage of data from a B-2-B and B-2-C marketing perspective</th>
<th>Interpretation subcategory (a)</th>
<th>Interpretation subcategory (b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2(a). Consumer insight gleaned from data</td>
<td>2(b). Implementation of consumer insights</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interpretation category 3: Big data impacting the financial services institution</th>
<th>Interpretation subcategory (a)</th>
<th>Interpretation subcategory (b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3(a). Big data driving change in company structure of the analytics department</td>
<td>3(b). Big data impacting decision-making</td>
<td></td>
</tr>
</tbody>
</table>
This framework presented in Table 5.2 shows a representation of interpretation categories and subcategories. Within each of the subcategories, there are certain themes that have been identified. Each of the findings associated with these themes will be discussed under the relevant interpretation subcategory and represented through the use of a figure. Once all of the subcategories have presented, an overall summary of the findings of each of the interpretation categories will be presented.

5.2.2 Interpretation category 1: Big data in a financial services institution
The section provides a comprehensive breakdown of the participants’ overall thoughts on the term big data in the financial services institution, representing the findings in three interpretation subcategories.

5.2.2.1 Interpretation subcategory 1(a): Characteristics of the term big data in the financial services institution
Interpretation subcategory 1(a) reflects the participants’ view of what they understand or perceived as common characteristics of big data after having worked with it.

Respondents were asked for their view of what they perceived to be the definition of big data. It is evident that all respondents were able to identify key terms associated with the term of big data, with the majority of respondents doing so without any probing from the interviewer. The majority of respondents referred to its size and variety of different data sources, along with it adding value, the speed of it, as well as its data being structured or unstructured and/or internal or external.

In addition to this, respondents mentioned that when working with big data, it should be used ethically. Respondents all emphasised the importance of security measures and data integrity that need to be upheld when working with big data. This was identified by respondents regardless of whether they were the individuals processing the data or the individuals using the insights. Respondents mentioned that to meet these standards, data should always be viewed at an aggregated level so that it isn’t intrusive and does not contravene any privacy laws.
Hence, two themes were evident from the research study for this subcategory, which are mentioned below and illustrated in Figure 5.1 and Figure 5.2

- **Theme 1**: Familiarity of the composition of the term big data (Figure 5.1).
- **Theme 2**: Data integrity is important across marketing disciplines (Figure 5.2).

Even though the results are qualitative in nature, the figures provided throughout this chapter for the interpretation categories and subcategories are used to provide a visual representation of the findings associated with each theme in detail. Each figure starts with a brief explanation of the theme, followed by supporting verbatim quotes. The graphic part of the figure reflects the number of respondents whose responses fell within the various themes, followed by ‘key terms identified’. These are key phrases identified within the theme. Font size is used to indicate the frequency with which each term was mentioned. The larger the font size the more often it was mentioned.
Figure 5.1: Interpretation subcategory 1(a) research results – Theme 1

**Theme 1: Familiarity of the composition of the term Big Data**

**Explanation Of The Theme:**

Out of the eight participants, seven successfully managed to identify at least one common term described as the size of the data being big, stemming from the key term begin volume.

The one respondent, even though not successfully identifying the terms upfront, managed to successfully mention key terms throughout the discussion guide.

Accordingly, all respondents identified through snow-ball sampling qualified as participants.

**Supporting Verbatim Quotes**

“I’m referring to the four ‘V’s’, a **large amount** of high **volume** data transferred at high **speeds** and **velocity** ... contains variety of facts...it’s **veracity** and complexity” – Respondent A

“....monitor behaviour in **real-time**” – Respondent B

“It is this **huge amount** of data which is absolutely growing” – Respondent C

“ it is important from a marketing perspective you use data to **add value**” – Respondent D

“ **Real-time** is important for me now” – Respondent H

**Key Terms Identified:**

- Disparate Sources
- Unstructured
- Real-Time
- Internal
- Structured
- Variety
- Amount
- Add Value
- Huge

7 of 8 Respondents Mentioned This Theme

7/8
5.2.2.2 Interpretation subcategory (1b): Data sources used in the financial services institution

Interpretation category 1(b) takes into account all the data sources the respondents mentioned they used. The majority of findings in this subcategory stemmed from discussion guide question 5, which was a question that all respondents responded to with a detailed explanation of all the various data sources they use.

All respondents were able to speak in detail regarding the various data sources that they use. Different data sources were mentioned to the ones that were selected from theory in Chapter 3, which the researcher used for probing. There were seven different data sources which were identified amongst all respondents. These were: customer data, transactional data, external data, loyalty data, e-commerce data, social media data and mobile data.

It seems as though respondents were quite comfortable in identifying one or two key sources before probing was used. These are identified by the researcher as primary...
data sources due to the fact that they were explained in detail and tended to be on
top of the respondent’s mind as they were mentioned first. The data sources
identified after probing, which are guided by theory, will be referred to as secondary
data sources. The overall outlook is that primary data sources were used across the
majority of participants, with secondary data sources only being used by a few. Even
the few respondents using secondary data sources agree that they are using them to
a limited degree.

In addition the primary sources are all kept in-house within each of the departments
and are used by the majority of respondents, in other words, all respondents have
access to it and can use it. On the other hand, all the secondary resources are solely
housed within a specific individual department which takes full ownership of it and is
responsible for using it extensively. This means that all other departments use these
secondary data sources only to support their primary source, and they never fully
integrate their data sources.

To a lesser extent, respondents say they use customer data and transactional data
as primary resources with external data having limited usage. However, when the
respondents were asked about loyalty data, they mentioned that it forms part of
transactional and internal data. Hence, loyalty data could be considered a primary
source, but for the purpose of this research, loyalty data will still be analysed as an
individual data source discovered after probing.

There is evidence that all the primary resources are at a mature stage of being used.
In terms of the secondary data sources, the various marketing disciplines are
beginning to branch out into the usage of the e-commerce and mobile data, however
they are still operating in the initial phases with regard to these, and are still
spending time setting up systems that process them. The uptake of social media as
a secondary data source is far greater than either of the other secondary sources,
however when investigating how it is being used, it became evident that its use is at
a low level of maturity.
One primary theme is evident within this subcategory, which is mentioned below.

- Theme 3: Various data sources with different origins are being used.

The discussion of this question with respondents is quite in-depth, as it incorporates the how and the extent to which they are used. This theme therefore requires subthemes, which are mentioned below.

- Theme 3(a): Customer-based data is considered a primary internal source
- Theme 3(b): Transactional data is widely used, but with caution
- Theme 3(c): There is a limited use of external data
- Theme 3(d): Loyalty data forms part of transactional and internal data
- Theme 3(e): E-commerce data has a promising outlook
- Theme 3(f): Social media data is used at a basic level but has huge potential
- Theme 3(g): Mobile data is used to a small degree but has huge potential

Themes 3(a)–3(c) are all identified before the respondents were probed, hence they can be viewed as primary data sources. Themes 3(d)–3(g) can be viewed as secondary data sources due to the fact they were only mentioned by respondents once probed.

The interviewer prompting the respondents resulted in them having an in-depth discussion on each data source, which is presented in detail, however a summary is first provided. Figure 5.3 provides a summary of the extent to which the various data sources (primary and secondary) are used by the various respondents. Figures 5.4 —5.10 dive into the detail of each of the sources, visually portraying common terms/characteristics of each of the data sources mentioned by the respondents.
Figure 5.3: Interpretation category 1(b) research results—Summary of Theme 3(a-g)

Theme 3 Summary: Various data sources having different origins being used

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transactional Data</td>
<td>8</td>
</tr>
<tr>
<td>Customer Based Data</td>
<td>5</td>
</tr>
<tr>
<td>Social Media Data</td>
<td>5</td>
</tr>
<tr>
<td>Loyalty Data</td>
<td>4</td>
</tr>
<tr>
<td>External Data</td>
<td>2</td>
</tr>
<tr>
<td>E-Commerce Data</td>
<td>2</td>
</tr>
<tr>
<td>Mobile Data</td>
<td>2</td>
</tr>
</tbody>
</table>

Participants who:

- Use regularly
- Use occasionally
- Don’t use
- No comment
**Figure 5.4: Interpretation subcategory 1(b) research results – Theme 3(a)**

**Theme 3(a): Customer Based Data Is Considered Primary Internal Source**

**Explanation Of The Theme:**

Five out of the eight respondents mentioned customer based data as a source without the interviewer probing. These respondents all identified that it consisted of demographic and geographic data of their customers. Respondents referred to this data source as an internal source to better understand the customer.

The remaining three respondents mentioned other data sources as their primary source.

**Supporting Verbatim Quotes**

“Firstly customer data, which would be demographics, so the typical age, gender, qualifications and geographic, locations, physical address, postal address” – Respondent A

“Its all data around the customer, what he has done, what he holds” – Respondent C

“The main source of data is our customer base” – Respondent E

“Data used is customer data, so all their demographics and information” – Respondent H

**Key Terms Identified:**

CUSTOMER BASE
DEMOGRAPHICS & GEOGRAPHICS
INTERNAL
**Figure 5.5: Interpretation subcategory 1(b) research results – Theme 3(b)**

<table>
<thead>
<tr>
<th>Theme 3(b): Transactional data is widely used but with caution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation Of The Theme:</strong></td>
</tr>
<tr>
<td>Eight out of the eight respondents mentioned transactional</td>
</tr>
<tr>
<td>data as a source without the interviewer probing. It is</td>
</tr>
<tr>
<td>considered an internal source and the only source that</td>
</tr>
<tr>
<td>is used across all respondents. When talking around this</td>
</tr>
<tr>
<td>data source respondents highlighted the fact that it is seen</td>
</tr>
<tr>
<td>at an aggregated level to ensure data integrity.</td>
</tr>
<tr>
<td>This means that transactional data is used throughout the</td>
</tr>
<tr>
<td>marketing disciplines, it is seen as an intrusive source and</td>
</tr>
<tr>
<td>should therefore be used with caution.</td>
</tr>
<tr>
<td><strong>Key Terms Identified:</strong></td>
</tr>
<tr>
<td>TRANSACTIONAL</td>
</tr>
<tr>
<td>PERSONAL</td>
</tr>
<tr>
<td>NON-INVASIVE WAY</td>
</tr>
<tr>
<td><strong>Supporting Verbatim Quotes</strong></td>
</tr>
<tr>
<td>“In the financial services industry we have access to</td>
</tr>
<tr>
<td>customer, product and <strong>transactional</strong> information”</td>
</tr>
<tr>
<td>– Respondent A</td>
</tr>
<tr>
<td>“I use mostly internal and <strong>transactional</strong> data, which is</td>
</tr>
<tr>
<td>how the customer transacts, which channels he uses, that</td>
</tr>
<tr>
<td>sort of thing” – Respondent D</td>
</tr>
<tr>
<td>“The largest section of our data is <strong>transactional</strong>”</td>
</tr>
<tr>
<td>– Respondent F</td>
</tr>
<tr>
<td>“<strong>Transactional</strong> data is extremely important from a B-2-C</td>
</tr>
<tr>
<td>perspective” – Respondent G</td>
</tr>
</tbody>
</table>
Figure 5.6: Interpretation subcategory 1(b) research results – Theme 3(c)

<table>
<thead>
<tr>
<th>Theme 3(c): There is a limited usage of external data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation Of The Theme:</strong></td>
</tr>
<tr>
<td>Five out of the eight respondents mentioned external data as a source without the interviewer probing. Out of the five respondents, two respondents were heavily reliant on external data using mostly government data. The remaining three respondents used external parties to gather market research data which was used as more a supportive data capacity. The remaining three respondents stated that they don’t use external data sources.</td>
</tr>
<tr>
<td><strong>Supporting Verbatim Quotes</strong></td>
</tr>
<tr>
<td>“The main source of external data would be credit bureau’s and government institutions... there are secondary sources available, but arguably ethics becomes a problem ” – Respondent A</td>
</tr>
<tr>
<td>“We use external service providers who conduct market analysis for us ” – Respondent G</td>
</tr>
<tr>
<td>“We don’t really use it, we have outside teams that do research for us ” – Respondent H</td>
</tr>
<tr>
<td><strong>Key Terms Identified:</strong></td>
</tr>
<tr>
<td>EXTERNAL</td>
</tr>
<tr>
<td>GOVERNMENT</td>
</tr>
<tr>
<td>MARKET RESEARCH</td>
</tr>
</tbody>
</table>
Figure 5.7: Interpretation subcategory 1(b) research results – Theme 3(d)

<table>
<thead>
<tr>
<th>Theme 3(d): Loyalty data forms part of transactional and internal data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation Of The Theme:</strong></td>
</tr>
<tr>
<td>Loyalty data was only discussed as a theme by two respondents before probing, this is due to the fact that when probed they classify it as internal or transactional and not necessarily loyalty data.</td>
</tr>
<tr>
<td>Four respondents said they do use it as a data source, with the remaining four not using it often, if at all within their role.</td>
</tr>
<tr>
<td><strong>Supporting Verbatim Quotes</strong></td>
</tr>
<tr>
<td>“Loyalty is a subset of transactional” – Respondent A</td>
</tr>
<tr>
<td>“I might leverage off it now and again, but there is a rewards department who has their own loyalty engine” – Respondent C</td>
</tr>
<tr>
<td>“I would classify it as internal, it’s all the information that looks at the customer status, I use internal and transactional” – Respondent E</td>
</tr>
<tr>
<td><strong>Key Terms Identified:</strong></td>
</tr>
<tr>
<td>PART OF INTERNAL &amp; TRANSACTIONAL</td>
</tr>
<tr>
<td>DATA HOUSED IN A SEPERATE DEPARTMENT</td>
</tr>
</tbody>
</table>
**Theme 3(e): E-Commerce data having a promising outlook**

**Explanation Of The Theme:**
This data source was only discussed after the interviewer probed. The two respondents that do use it work closely with each other and use it for digital marketing to tailor messages.

The other six respondents did comment on the fact that even though they are not using it, it is a source they want to dive into. Respondents mentioned it is a source housed in a different department.

**Supporting Verbatim Quotes**
- “No but it would be nice if we could” – Respondent A
- “Less so currently but certainly something we are **focused** on” – Respondent C
- “We don’t personally use it, we have a **department** that looks at that” – Respondent E
- “Not something that we have touched on yet, but it is something we are **looking at moving to**” – Respondent G

**Key Terms Identified:**

<table>
<thead>
<tr>
<th>FUTURE FOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>POTENTIAL</td>
</tr>
<tr>
<td>DATA HOUSED IN A SEPERATE DEPARTMENT</td>
</tr>
</tbody>
</table>

**Extent to which respondents mention this theme**

- Yes
- Not often
- Not in my role
**Figure 5.9: Interpretation subcategory 1(b) research results – Theme 3(f)**

<table>
<thead>
<tr>
<th>Theme 3(f): Social media data used at basic level with huge potential</th>
</tr>
</thead>
</table>

**Explanation Of The Theme:**

Five out of the eight respondents mentioned that they do make use of social media data and that there is huge potential, however it is used as a supportive data source to the primary data sources identified.

Respondents mentioned they use it state that there is a whole department that works with it.

**Supporting Verbatim Quotes**

“We use it from a B-2-B space for either selling or operations, however there is a whole department that deals with it” – Respondent A

“That's not really my area at this point in time... it is area of huge potential” – Respondent C

“I use it in how we report on social media... I work with the team that manages it” – Respondent D

“There is a whole team that deals with social media data, but within my capacity no” – Respondent E

“In my role we are still at a very low level of maturity in utilizing social media data” – Respondent G

**Key Terms Identified:**

- **POTENTIAL**
- **DATA HOUSED IN A SEPERATE TEAM**
- **BASIC USAGE**
With the above findings from Theme 3, the researcher is able to answer Proposition C, which states “the financial services institution uses various data sources”. The result for this proposition is supported, due to the fact that two out of the seven data sources are used extensively. However, the remaining five data sources are used as supportive data sources, and all respondents agree they are looking to use them more extensively in the future.

### 5.2.2.3 Interpretation subcategory (1c): Integration amongst data sources

Interpretation of subcategory 1(c) considers the importance of integrating data sources, mentioned in subcategory 1(b), in order to get a deeper customer insights.

All respondents identified the importance and value that integrating data sources can have. Respondents described integration using the common phrase “overlay on other data sources”. However, reflecting on subcategory 1(b), Themes 3(d)–3(g), there are some departments that house data independently, and this results in few
other departments being able to fully integrate with them; they only leverage these external sources occasionally. Respondents agreed that that integration is easier with internal data sources than it is with external data sources, which could explain the lack of integration. There was one respondent who stated that their data sources are never integrated as they have nothing to do with each other.

Respondents had an overall view that integration is easy when there is commonality, which involves common points across the various data sources. Commonality makes it easier to link data sources. “Difficulty” is a word commonly mentioned by respondents due to the fact that integration is seen as a “very manual process” (Respondent F). With technological advances, perhaps data integration won’t be such a complex manual task in the future. A few respondents mentioned that in the future they would like to integrate more data sources, showing that they aren’t currently in the mature phase of integrating data sources.

Therefore a major theme was evident for this subcategory which is described below.

- Theme 4: Integration is difficult but considered to be an important task
Figure 5.11: Interpretation subcategory 1(c) research results – Theme 4

**Theme 4: Integration is difficult, but considered an important task**

Explanation Of The Theme:

Seven out of the eight respondents mentioned that data integration is important, however it isn't always easy. The extent to which data integration occurred varied, with some respondents integrating only internally, with others only being able to fully integrate with only external data sources. All respondents hoping to better integrate in the future.

The one respondent that didn't integrate due to the fact that the data sources she works with have nothing to do with each other.

Supporting Verbatim Quotes

“External is completely integrated, there is even a feedback loop, but internally are housed independently” – Respondent A

“The integration of data is a bit of a journey, it can never be fully integrated” – Respondent B

“Yes absolutely there is an internal integration that needs to happen and now we are starting to look at the same time at external integration” – Respondent C

“We'll never ever just use one source of data, we will always use another source and cross reference it to something else... or integrate as many as we can to get the most targeted dataset” – Respondent D

“It is extremely important to integrate, although it can be quite complex” – Respondent G

“Most of the time we try to integrate, hard to find relationships and links between the data sources” – Respondent H

With the findings from Theme 4, the researcher is able to answer Proposition D, which states “the financial services institution integrates data sources from the various marketing disciplines to better understand its customers”. The result of this research proposition is partially supported due to the fact that all respondents agree about the importance of integrating data sources to gain a competitive advantage: they can see the value data integration adds to their discipline. However, at this stage it is evident that only partial integration has occurred.
5.2.3 Interpretation category 2: The usage of data from a B-2-B and B-2-C marketing perspective

This interpretation category refers to the respondents’ comments around implementing data, particularly from a B-2-B (business-to-business) and B-2-C (business-to-consumer) perspective. The breakdown of the data usage across both B-2-B and B-2-C was best described by Respondent A, who mentioned “the trend has always been B-2-C because it’s easier in terms of complexity to sell to a consumer than it is to a business. In the past two or three years they have started to focus on the business side”. The interpretation subcategories below will illustrate how respondents use data from both a B-2-B perspective as well as a B-2-C perspective.

5.2.3.1 Interpretation subcategory 2(a): Consumer insight gleaned from data

Interpretation subcategory 2(a) considers the various insights gleaned from using big data from a marketing perspective.

All respondents were of the opinion that big data was used to understand the customer, and that this understanding would be informed by customer profiling, segmentation and targeting. In understanding who their customer is and how that customer behaves, the company would be able to use data to shift consumer’s behaviour from bricks-to-clicks. All respondents agreed that there is a massive drive for the company to move their customers from physical stores to digital platforms. In addition, respondents agreed with the fact that the company is using the rewards program as a strong tool to influence consumers’ behaviour. This program is used to reward the consumer for good behaviour, which would be online behaviour.

In addition, respondents mentioned that they are using data to create customer profiles. They then use these profiles to better segment and target their customer. Respondents agreed that there was a big push towards using data with the aim to move away from the ‘spray and pray’ approach, which is one marketing activity addressed to target the entire market without having focus informed by real customer profiles. Instead, the company is using data to better profile customers in order to identify what Respondent B called “nano customer segments”, which are small unique segments all having unique needs. All respondents agree that they want to
be able to profile customers upfront, so that from the start they can target customers with messages and products that are relevant to them throughout their relationship with the institution, which is better addressed by Theme 7. There are two major themes evident in this subcategory, which are listed below.

- Theme 5: Understanding and changing customer behaviour
- Theme 6: Data is used to profile their customers in order to segment and target them

Figure 5.12: Interpretation subcategory 2(a) research results – Theme 5

### Theme 5: Understanding and changing customer behaviour

**Explanation Of The Theme:**

Seven out of the eight respondents mentioned that they use data to monitor and change consumers behaviour to embrace digital channels as way of doing business. All respondents agreed that it is cheaper for the business as well as cheaper and more convenient for the consumer to do their business on a digital platform.

The one respondent who didn’t mention anything related to the above theme, used insights to determine where the customer is in their life-cycle as well as to use insights for customer profiling, both of which are part of their own theme, Theme 6, which will be next discussed.

**Supporting Verbatim Quotes**

- “It is a migration worldwide where the financial services industry is moving from bricks to clicks” – Respondent A
- “We use data for behaviour changing activities... the patterns we see are behavioural characteristics” – Respondent B
- “The first thing is to increase our understanding of our customer...there’s a lot of areas that look at behaviour” – Respondent C
- “From a B-2-C level we use data to look at customer behaviour... within B-2-C there is already a lot of work that has been done in this regard” – Respondent D
- “We try move our customers from face-to-face, face-to-phone, to digital, do it yourself.” – Respondent E
- “From B-2-B it is about understanding you market... at the end of the day it is about tracking customer behaviour” – Respondent G
- “From B-2-C it is trying to understand what the customer is doing... move the customer onto electronic platforms, move behaviour onto different electronic channels” – Respondent H

**Key Terms Identified:**

- Changing Behaviour
- Bricks to Clicks
- Understanding Customer
The findings from Theme 5 and Theme 6 as well as findings in section 5.2.3 will assist the researcher in answering propositions A, B, E and G, each of which will be discussed below.

**Theme 6: Data is used for customer profiling, segmentation and targeting**

**Explanation Of The Theme:**

Seven out of the eight respondents mentioned that they use data for customer profiling. All respondents are using the same term “moving away from the spray and pray approach”. So understanding the customer upfront right from the acquisition phase (having a holistic view of the customer), then segmenting and targeting that customer in order to send personalised messages.

The one respondent that didn’t contribute to this theme mainly used data to entrench the customer within in the brand, this is Theme 8, to be discussed in detail in interpretation Subcategory 2(b).

**Supporting Verbatim Quotes**

“We want to profile you upfront so we understand your profitability... They used to call it spray-and-pray approach, where everyone gets a blanket approach, now it's about targeted customer activities” – Respondent A

“To identify patterns and reveal a desired target group... move from spray-and-pray marketing to highly focused individual, personalised marketing” – Respondent B

“Get a single view of the customer, a more holistic customer point of view” – Respondent C

“We are trying to move away from spray-and-pray, we want to start focusing our marketing” – Respondent F

“From B-2-C data is essential to use in how you target your customer... to create a target profile, create a desired customer profile upfront... I have established customer segmentation” – Respondent G

“Use data to try put customer into groups and see if we get similar characteristics across all to have better target groups” – Respondent H

**Key Terms Identified:**

- PROFILING
- TARGET GROUPS
- SPRAY-AND-PRAY
- PERSONALISED
- 360 DEGREE CUSTOMER VIEW

The findings from Theme 5 and Theme 6 as well as findings in section 5.2.3 will assist the researcher in answering propositions A, B, E and G, each of which will be discussed below.
Section 5.2.3 assists the researcher in answering Proposition A, which is “the financial services institution uses big data in its B-2-B marketing”, as well as Proposition B, namely “the financial services institution uses big data in its B-2-C marketing”.

- Proposition A is partially supported as only two respondents are using big data from a B-2-B perspective, and they state that more focus has been directed towards this area than has been in the past. The other respondents do not serve the B-2-B market in terms of their job profile.
- Proposition B is fully supported due to the fact that the majority of respondents mentioned that they use data from a B-2-C perspective. In addition, respondents agreed that more work has been done with big data from a B-2-C perspective.

Theme 5 and Theme 6 will assist in answering Proposition E, which is “the financial services institution uses data to glean consumer insights”.

- Proposition E is fully supported in that the respondents are using data to a large degree for segmentation and profiling insights about their customer. Having said this, there is still room to grow in the future with data being used more extensively to glean deeper sentiment insights.

Theme 5 and Theme 6 have been used by the researcher to answer Proposition G, which is “the financial services institution uses data from a market orientation”.

- Proposition G is fully supported due to the fact that the main insights that the marketing discipline seeks are all customer related. In addition, participants agree that they are using data to add value to the customers’ lives and to put the customer first, which in itself proves that the institution uses data from a market orientation.

5.2.3.2 Interpretation subcategory 2(b): Implementation of consumer insights

Interpretation subcategory 2(b) represents respondents' ideas regarding the ways in which insights are used by various marketing activities. When respondents were asked which marketing activities were most dependent on data, their response was that they viewed marketing as whole, so it would be hard to say, given that different
disciplines within marketing use data for different reasons. However, there was an overall agreement that customer insights are used mainly for direct marketing in order to create personalised marketing messages for the customer. As a result of these messages, the customer has the perception that their financial services institution knows exactly who they are and what they want, and this can foster a long lasting relationship.

In addition, the respondents mentioned that they would use insights to identify which phase in the customer lifecycle their customer is in. Various respondents are responsible for various phases within the lifecycle, from acquisition to retention. By using these insights, they are able to personalise the message for a particular customer’s life phase. Respondents also agreed that they would be able to cross-sell particular products, depending on what phase in the lifecycle the customer is in. This results in the customer being more entrenched with the institution as the more products the customer has with the institution the harder it would be for them to end the relationship with the institution. Respondents agreed that by doing this, they are creating a more profitable customer for the business as well as adding value to the customer’s life.

Data is being used from a customer service perspective, however all respondents mention the fact that they aren’t responsible for handling customer service, as it is a resource-heavy task. If they do come past data that needs customer services attention it is directed towards the relevant department. There was usage across various marketing activities, however there were two common themes stemming from their usage.

- Theme 7: Direct marketing uses data to personalise marketing activities
- Theme 8: Enriching the relationship with the customer so they are entrenched within the organisation
### Theme 7: Usage of data for direct marketing to personalize marketing activities

#### Explanation Of The Theme:

Seven out of the eight respondents mentioned that the marketing activity that is heavily reliant on data is direct marketing or content marketing. They would use data to tailor and personalise communications to something that is relevant to the customer.

The respondent that didn’t contribute to this theme was the same respondent that didn’t contribute to theme 6 as their main focus for big data is entrenching the customer and developing a relationship with them, which is the next theme, Theme 8.

#### Supporting Verbatim Quotes

- "Whether it is B-2-B or B-2-C, data helps us tailor communications... the biggest thing I look at is relevance, is it helpful to our members" – Respondent D

- "In my department we have already invested in big data, it is almost a corner stone of all our direct marketing to our customers" – Respondent B

- "Our initiative is to go towards a direct marketing approach" – Respondent C

- "We want to speak to you about something that affects your life" – Respondent E

- "Focusing on content marketing and personalised marketing, so serve messages that relate to your life" – Respondent F

- "Use data with the aim to speak to the right customer with the right message... to personalize products to specifically suit their needs" – Respondent H

#### Key Terms Identified:

- **Relevance**
- **Direct Marketing**
- **Personalised**
- **Tailored**
The researcher makes use of Theme 8 and Theme 9 (discussed in section 5.2.4.1) to answer Proposition F, which is “the financial services institution uses various customer insights within the various marketing disciplines/activities”. The research fully supports Proposition F, with respondents agreeing that all marketing activities are heavily reliant on data, with direct marketing and customer relationship management being the most dependent activities.
5.2.4 Interpretation category 3: Big data impacting the financial services institution

This section details the participants’ overall view of how big data has impacted the financial services institution.

5.2.4.1 Interpretation subcategory 3(a): Big data driving change in company structure of analytics department

Interpretation subcategory 3(a) represents the respondents’ view on how big data has changed the structure of analytics departments within the organisation.

This theme has generated a debate around two schools of thought. Respondent B states that there is currently are different thoughts around having either a centralised analytics team or a decentralised analytics team. Some respondents support having a centralised analytics department, where the analytics team is used across the entire institution and everything is centralised. In this case the analytics team would be independent from the various departments. A decentralised analytics team on the other hand would have analysts sitting within each department, and there would be no single overriding analytics department. The analytics team sits with the people they work with, so they understand their particular needs. There were two respondents that didn’t contribute to the debate directly, however they did mention that when necessary they would get the analytics department involved, which reveals that the institution is arguably currently sitting with a decentralised analytics team.

The responses from respondents indicate opposing views around this topic. However all respondents agree that the analytics department within this institution, to a certain extent, matches the decentralised configuration. Irrespective of which is considered better, Respondent A summarised the role of analytics by saying that “analytics is becoming much more important in executive type conversations, to the point where the strategy of the company is to drive analytics”.

To a small degree it has also changed the dynamics of other departments within the institution. Respondent A reported that recently a department that was sales orientated (a department that was volume driven) and a department that was
marketing orientated (a department focused on using relationship touch models) had to merge. They therefore had to learn to use data to drive volume into a space that was used to using data to drive relationships and vice versa.

Due to the fact that analytics is so important, there has been more emphasis on the topic of big data and the processing of it. This is summarised in Theme 9, which is described below:

- Theme 9: Operating in a decentralised analytics department

**Figure 5.16: Interpretation subcategory 3(a) research results – Theme 9**

**Theme 9: Operating with a decentralized analytics department**

**Explanation Of The Theme:**

Six out of the eight respondents mentioned aspects regarding the debate between being centralised and decentralised, with some wanting to have a centralised customer intelligence unit for all departments to feed off of. Whilst others have the view of having an analytics person sitting within each team.

The two respondents that didn’t contribute stated that they would get analytics involved, which does contribute to the theme of having a decentralised analytics department, however it doesn’t contribute to the current debate.

**Supporting Verbatim Quotes**

- “The analytics department has always ever been considered as separate... because of organisational silo’s and structure, little communication happens.” – Respondent A

- “The problem comes when you want to integrate with other areas within the business, this is when we get the data analysts involved” – Respondent B

- “Ultimately the big dream is to have this department to be the customer centre of intelligence or insights... so everyone will come to us for information... We will bring information into our area and distribute it across other business units” – Respondent F

- “Previously there would be one analytics team that every department would pull on but now its getting to the point where every department requires their own analytics team” – Respondent G

**Key Terms Identified:**

*INTEGRATE*

**“OWN TEAM”**

CUSTOMER CENTRE OF INTELLIGENCE

**“SEPERATE TEAM”**
5.2.4.2 Interpretation subcategory 3(b): Big data impacting decision-making

Interpretation subcategory 3(b) represents respondents’ view that big data drives decision-making.

The respondents stressed how important data is to decision-making, and some respondents stressed that their department wouldn’t function if it wasn’t for data. Even though all respondents agreed that data is critical in decision-making, not all respondents use it to make decisions. Three of the respondents pass the insights onto other departments that use of it to make decisions.

In addition, one respondent mentioned that the uptake of using data for decision-making depends on whether there is a person championing data usage within the department. This respondent is of the opinion that as long as the institution gets a champion seeing the value it can add, it would be highly likely that eventually the entire department will be data driven when it comes to making decisions.

However, a theme emerged due to respondents reporting that even though the majority of decisions (some estimate between 80% and 90%) require data, departments shouldn’t solely rely on data. There are times when a department needs to veer from what the data is telling them, and this accounts for the other 10% – 20% of decisions. These are made using human intuition or having to veer off due to the fact that the data-based option does not correlate with the institution’s overall strategy.

Respondent A mentioned it would be difficult to use data at a strategic level, due to the fact that top management are informed by information which provides them with an outline of trends, which is all historic data. Historic data cannot be used to drive strategy, given that strategy aims to engage with what happens in the future.

This uncovers the Theme 10 which is mentioned below.

- Theme 10: Decisions are mainly data driven, however can occasionally veer off from using data
The findings from Theme 10 are used by the researcher to answer Proposition H, which is “the financial services institution uses data to make decisions”. Proposition H is partially supported due to the fact that all marketing disciplines are highly dependent on data to make decisions, but mostly to make operational decisions. There is a gap when making use of data from a more strategic point of view.
5.2.5 Summary of research results of interpretation categories

Table 5.3 presents a summary of all the interpretation categories and subcategories results, with each interpretation category having its own key findings.

Table 5.3: Summary of interpretation category's research results

<table>
<thead>
<tr>
<th>Interpretation subcategories</th>
<th>1(a). Characteristic of the term big data in the financial services institution</th>
<th>1(b). Data sources used in the financial services institution</th>
<th>1(c) Integration amongst data sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Themes</td>
<td>Theme 1: All respondents familiar with the composition of the term.</td>
<td>Theme 3: Various data sources having different origins are being used.</td>
<td>Theme 4: Data integration is difficult be considered an important task.</td>
</tr>
<tr>
<td></td>
<td>Theme 2: Data integrity is of important across marketing disciplines.</td>
<td>Theme 3a: Customer based data is considered a primary source.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Theme 2b: Transactional data is predominately used but with caution.</td>
<td>Theme 3c: There is a limited usage of external data.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Theme 3d: Loyalty data forms part of transactional and internal data.</td>
<td>Theme 3d: E-commerce data has a promising outlook.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Theme 3e: Social media data being used at a basic level with huge potential.</td>
<td>Theme 3f: Social media data being used at a basic level with huge potential.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Theme 3g: Mobile data used to a small degree with huge potential.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Interpretation Category 1: Big data in the financial services institution

<table>
<thead>
<tr>
<th>Key findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>All respondents were familiar with and knowledgeable about the term big data, as they were able to identify key terms associated with big data throughout the interview. Data integrity was seen as an important requirement within the marketing discipline. All the respondents were able to have a lengthy discussion on the various data sources, being primary (customer, transactional, external, loyalty) and secondary sources, which are sources mentioned by respondents after the interviewer probed (e-commerce, social media, mobile data). Primary resources are in the mature utilisation phase, whereas secondary resources are championed by individual departments, and are in the initial phases of being used by other departments. Respondents felt very strongly about the importance of integrating these sources, knowing that it is not always a simple task.</td>
</tr>
</tbody>
</table>

### Interpretation category 2: The usage of data from a B-2-B and B-2-C marketing perspective

<table>
<thead>
<tr>
<th>Interpretation subcategories</th>
<th>2a. Consumer insight gleaned from data</th>
<th>2b. Implementation of consumer insights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Themes</td>
<td>Theme 5: Understanding and changing customer behaviour.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Theme 6: Data is used for customer profiling, segmentation and targeting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Theme 7: Usage of data for direct marketing to personalise marketing activities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Theme 8: Enriching the relationship with the customer so they are entrenched within the organisation.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Key findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data is used to drive customer insight, particularly insight about customer behaviour. The financial services institution is aiming to change customer’s behaviour from bricks to clicks, getting them onto an online platform. Data is being used to profile customers upfront, in order to better segment and target them. Marketing activities such as direct marketing are heavily reliant on these insights, in order to not only personalise marketing activities based on what phase the customer is in with regard to the customer lifecycle, but to cross-sell in order to better entrench the customer with the institution. Hence, data is being used to deepen the relationship with customers in order to make them profitable over their lifecycle with the institution.</td>
</tr>
</tbody>
</table>
### Table 5.3: Summary of interpretation category’s research results (continued)

<table>
<thead>
<tr>
<th>Interpretation subcategories</th>
<th>3a. Data driving change in company structure of the analytics department.</th>
<th>3b. Big data impacting decision-making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Themes</td>
<td>Theme 9: Operating with a decentralised analytics department.</td>
<td>Theme 10: Decisions are mainly data driven however can occasionally veer off from using data.</td>
</tr>
<tr>
<td>Key findings</td>
<td>Respondents all had their own opinions as to how, as a result of big data, the analytics department should be structured. All respondents agreed to analytics functioning according to a decentralised model. Respondents also identified that big data impacts the way that decisions are made as all respondents agree to data being critical in decision-making, however the input of human intuition is also valuable, and one must not get trapped in a data bubble when making decisions.</td>
<td></td>
</tr>
</tbody>
</table>

#### 5.2.6 Summary of empirical research findings related to the model

The model shown in Figure 3.10 had to be adjusted slightly to incorporate aspects of the financial services institution that was identified for the case study approach. A new model has been developed and is illustrated in Figure 5.18. This model incorporates elements such as customer base data. Figure 5.18 also represents the overall findings, taking all the secondary objectives and plotting their usage on the model. The extent to which the various aspects are used within the financial services institution are identified through using a heat map, whereby the darker shades portray comprehensive usage compared to the lighter shades or no shades meaning the aspect wasn’t mentioned.
Figure 5.18: Summary of empirical study on big data model

Source: Researcher’s own construct.
It is evident the financial services industry is at a mature stage of data usage, however there are a few areas for improvement where data could be better integrated. These will all be discussed in detail in Chapter 6.

5.2.7 Linking the secondary objectives to the propositions
Even though the propositions were answered under the appropriate themes identified in the interpretation categories, Table 5.4 presents a summary of all the secondary research objectives with their corresponding propositions and the proposition results.

Table 5.4: Proposition results

<table>
<thead>
<tr>
<th>Secondary Objective</th>
<th>Proposition</th>
<th>Proposition result</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Determine the extent to which big data is used by the financial services institution in business-to-business (B-2-B) marketing.</td>
<td>A: The financial services institution uses big data in its B-2-B marketing.</td>
<td>Partially supported: The institution is using data from a B-2-B perspective, however this proposition is partially supported due to the fact only two out of the eight respondents use it from a B-2-B perspective.</td>
</tr>
<tr>
<td>B: Determine the extent to which big data is used by the financial services institution in business-to-consumer (B-2-C) marketing.</td>
<td>B: The financial services institution uses big data in its B-2-C marketing.</td>
<td>Fully supported: Due to the fact that a lot of work has already been done with data from a B-2-C perspective and the fact that a large degree of the respondents mentioned they use data from a B-2-C perspective.</td>
</tr>
<tr>
<td>C: Determine the extent to which the financial services institution uses various data sources.</td>
<td>C: The financial services institution uses various data sources.</td>
<td>Fully supported: Due to the fact that institution only uses two data sources comprehensively, with the other five sources being used as supportive data sources, with the vision that they will be used more extensively in the future.</td>
</tr>
<tr>
<td>Secondary Objective</td>
<td>Proposition</td>
<td>Proposition result</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>D: Determine the extent to which the financial services institution integrates data sources to better understand the customer.</td>
<td>D: The financial services institution integrates data sources from the various marketing disciplines to better understand its customers.</td>
<td>Partially supported: Due to the fact that all respondents agreed to data integration being incredibly important to better understand the customer, however only partial integration has occurred.</td>
</tr>
<tr>
<td>E: Determine the extent to which the financial services institution uses data for consumer insights.</td>
<td>E: The financial services institution uses data to glean consumer insights.</td>
<td>Fully supported: Due to the fact that data, to a large degree, is used for segmentation and profiling insights. However, there are still gaps in terms of using data for sentiment insight that can be addressed in the future.</td>
</tr>
<tr>
<td>F: Determine the extent to which the financial services institution uses insights for the implementation of marketing activities.</td>
<td>F: The financial services institution uses various customer insights within the various marketing disciplines/activities.</td>
<td>Fully supported: Due to the fact that all marketing activities are heavily reliant on big data, with direct marketing and customer relationship management being the most dependent, with room for growth in other areas.</td>
</tr>
<tr>
<td>G: Determine the extent to which the financial services institution uses data to be market orientated.</td>
<td>G: The financial services institution uses data from a market orientation.</td>
<td>Fully supported: Due to the fact that the institution asserts that they only use data to add value to their customer’s lives. It is for this reason the institution is considered to have a market orientation.</td>
</tr>
<tr>
<td>H: Determine the extent to which the financial services institution uses data to make decisions.</td>
<td>H: The financial services institution uses data to make decisions.</td>
<td>Partially supported: Due to the fact that all marketing disciplines are highly dependent on data, but only to make decisions on an operational and tactical level, leaving room for growth in the future to drive more strategic decision-making.</td>
</tr>
</tbody>
</table>
From Table 5.4 it is evident that four propositions were fully supported with the other four propositions being partially supported. What is important to note is that none of the propositions were unsupported. These findings will assist in answering the primary objective in Chapter 6.

5.3 CONCLUSION
This chapter provides a comprehensive discussion of the findings from the qualitative research conducted in the form of in-depth personal interviews. The findings were analysed according to the Morse and Field approach, whereby interpretation categories and subcategories were identified, with each interpretation subcategory containing themes which were visually presented.

Chapter 6 will unpack how these findings tie in with the literature discussed in Chapters 2 and 3, and how these answer the secondary research objectives and propositions. It will end with a discussion of conclusions and recommendations, which tie back to the primary research objective.
CHAPTER 6
CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION
The purpose of this chapter is to answer the research objectives as mentioned in Chapters 1 and 4 (refer to sections 1.5 and 4.1). This chapter starts with an overview of the study, which includes the research problem and a summary of the previous chapters. It then discusses each research proposition and investigates it from a theory perspective, and does this alongside a view of the empirical research results. The researcher then provides a conclusion and recommendation for each secondary objective. This is then followed by a summary which links all objectives, propositions, findings and recommendations. The chapter then concludes by providing limitations and recommendations for future study.

6.2 OVERVIEW OF THE STUDY
Before each research proposition and research objective is discussed, it is necessary for the researcher to provide a summary and background to the study, starting with a reflection of the research problem which was also provided in section 1.4.

*Big data has the potential to transform companies, particularly within their marketing departments (Kerwin, 2013), as it provides companies with the opportunity to truly understand their customers, and this in turn results in them being customer-centric, which gives them a competitive advantage (SAS, 2014). However, South African companies are not using data to its full potential, if at all (Harris, 2013). If they continue to be reluctant to adopt data within their marketing departments, they will be left behind with distant relationships with their customers and a loss of competitive advantage in an emerging economy. Globally, the financial services industry has a reputation of embracing the changing structure of data, as well as the capability to adopt big data along with a sizeable contribution towards the national GDP (Gutierrez, 2014:10). However, within South Africa the financial services industry is lagging behind (PWC, 2013b). Testing the adapted Byrom et al. (2001:336) model, (refer to Figure 1.4), will assist the financial industry to identify areas where data can*
be utilised and how it can be utilised for better decision-making and marketing strategies.

A literature review incorporated concepts that would assist in the answering of the research objectives; these were presented in Chapters 2 and 3. The content within each of the chapters are explained below.

**Chapter 2 – The financial services industry:** Chapter 2 provided an overview of the financial services industry both globally and locally, as well as of its contribution to the global economy (refer to Figure 2.1). The term financial services industry was clarified, and it was explained that it incorporates banks, insurance and investment related services (refer to Figure 2.2).

**Chapter 3 – Big data’s impact on the financial services industry, specifically from a marketing perspective:** Chapter 3 provided an overview of the term big data, and showed its impact on the financial services industry from a marketing perspective. Big data assists the financial services industry to better understand their customer. A model (refer to Figure 3.10) that graphically shows how big data is infiltrated through an organisation was introduced, which will be used later in this chapter to answer the primary objective of the extent to which big data is used in the financial services industry from a marketing perspective. Key aspects of these two chapters are shown in Table 6.1.
Table 6.1: Literature overview of Chapters 2 and 3

<table>
<thead>
<tr>
<th>Key aspects</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chapter 2 – The financial services industry</strong></td>
<td></td>
</tr>
<tr>
<td>The financial services industry was classified in literature as broken up</td>
<td>Section 2.3, Figure</td>
</tr>
<tr>
<td>into three divisions namely: bank, insurance and investment related</td>
<td>2.2</td>
</tr>
<tr>
<td>services (AIFMRM, 2014:21).</td>
<td></td>
</tr>
<tr>
<td>The financial services industry is currently faced with the challenge of</td>
<td>Section 2.6, Table 2.</td>
</tr>
<tr>
<td>complying with many regulations (PWC, 2014d:4). The financial services</td>
<td>1</td>
</tr>
<tr>
<td>industry however has been characterised as having various trends involving</td>
<td></td>
</tr>
<tr>
<td>technology, changing demographics and globalisation.</td>
<td></td>
</tr>
<tr>
<td><strong>Chapter 3 – Big data used within the financial services industry</strong></td>
<td></td>
</tr>
<tr>
<td>Data has evolved over time to what it is known today as big data, better</td>
<td>Section 3.2.2</td>
</tr>
<tr>
<td>known for having characteristics called the “seven V’s” (ARC, 2013;</td>
<td></td>
</tr>
<tr>
<td>Big data can be used from a marketing perspective to help better understand</td>
<td>Section 3.4.2, 3.4.3,</td>
</tr>
<tr>
<td>the customer (Zagorsky, 2014). In having a 360 degree view of the</td>
<td>3.4.4, Figure 3.5</td>
</tr>
<tr>
<td>customer the institution can create an unforgettable customer experience</td>
<td></td>
</tr>
<tr>
<td>(Hochhauser, 2004:228). Big data in the financial services industry can</td>
<td></td>
</tr>
<tr>
<td>be used from a finance, operations and marketing perspective.</td>
<td></td>
</tr>
<tr>
<td>Focus was directed towards big data being used from a marketing perspective,</td>
<td>Section 3.8, 3.9,</td>
</tr>
<tr>
<td>whereby a model was introduced by Byrom et al. (2001:336) (refer to</td>
<td>3.10, 3.11, 3.12</td>
</tr>
<tr>
<td>Figure 3.9) and adapted to include big data (refer to Figure 3.10).</td>
<td></td>
</tr>
<tr>
<td>This adapted model illustrates the various extents to which big data can</td>
<td></td>
</tr>
<tr>
<td>be used in a financial services institution. The model is broken up into</td>
<td></td>
</tr>
<tr>
<td>the various data sources that can be used, followed by the various</td>
<td></td>
</tr>
<tr>
<td>different types of data. The model then reflects how the data can be used</td>
<td></td>
</tr>
<tr>
<td>to gain certain segmentation and profiling insights, followed by the</td>
<td></td>
</tr>
<tr>
<td>various marketing activities that rely on these insights to make decisions,</td>
<td></td>
</tr>
<tr>
<td>either from a market orientation or sales orientation.</td>
<td></td>
</tr>
</tbody>
</table>

In order to ultimately answer the primary research objective, the research was designed based on secondary research objectives, whereby the researcher consulted literature and gathered primary data for the study. This data was collected through a qualitative research design; particularly through in-depth personal interviews with eight participants (refer to Table 4.2). These participants had to answer a screening question to confirm that they were in fact knowledgeable enough
with regards to the term ‘big data’ to participate in the study. The participants were individuals working with big data from a marketing perspective and were identified through snowball sampling (refer to section 4.5.2.1).

The primary and secondary research objectives will be discussed next in order to draw conclusions from the research results as well as the literature review.

6.3 ANSWERING THE RESEARCH OBJECTIVES

This section aims to address and answer each of the research objectives for the study. It uses the secondary research objectives as a means to answer the primary research objective, and the secondary research objectives will therefore be discussed first. Table 6.2 links the research objectives with the research propositions. It also shows links with the literature and parts of the discussion guide.

Table 6.2: Summary of the links between research objectives, propositions, literature and empirical study

<table>
<thead>
<tr>
<th>Research objectives</th>
<th>Research propositions</th>
<th>Literature review and study</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary research objective</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To investigate the extent to which a financial services institution in South Africa uses big data from a marketing perspective.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Secondary Research Objective</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| A: To determine the extent to which big data is used by the financial services institution in business-to-business (B-2-B) marketing. | A: The financial services institution uses big data in its B-2-B marketing. | Literature: Section 3.4, 3.5, 3.6  
Study:  
Discussion guide question: 2, 4(a) and 4(b) |
| B: To determine the extent to which big data is used by the financial services institution in business-to-consumer (B-2-C) marketing. | B: The financial services institution uses big data in its B-2-C marketing. | Literature: Section 3.4, 3.5, 3.6  
Study:  
Discussion guide question: 3, 4(a) and 4(b) |
Table 6.2: Summary of the links between research objectives, propositions, literature and empirical study (continued)

<table>
<thead>
<tr>
<th>Research objectives</th>
<th>Research propositions</th>
<th>Literature review and study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Research Objective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: To determine the extent to which the financial services institution uses various data sources.</td>
<td>C: The financial services institution uses various different data sources.</td>
<td>Literature: Section 3.2.3, 3.7 Figure 3.3 Study: Discussion guide question: 5</td>
</tr>
<tr>
<td>D: To determine the extent to which the financial services institution integrates data sources to better understand the customer.</td>
<td>D: The financial services institution integrates data sources from the various marketing disciplines to better understand its customers.</td>
<td>Literature: Section 3.2, 3.7.1 – 3.7.6 Study: Discussion guide question: 6</td>
</tr>
<tr>
<td>E: To determine the extent to which the financial services institution uses big data for consumer insights.</td>
<td>E: The financial services institution uses data to glean consumer insights.</td>
<td>Literature: Section 3.9 Study: Discussion guide question: 7</td>
</tr>
<tr>
<td>F: To determine the extent to which the financial services institution uses insights for the implementation of marketing activities.</td>
<td>F: The financial services institution uses various customer insights within the various marketing disciplines/activities.</td>
<td>Literature: Section 3.10 Figure 3.6 Study: Discussion guide question: 8</td>
</tr>
<tr>
<td>G: To determine the extent to which the financial services institution uses big data to be market orientated.</td>
<td>G: The financial services institution uses data from a market orientation.</td>
<td>Literature: Section 3.4.1, 3.11 Study: Discussion guide question: 9</td>
</tr>
<tr>
<td>H: To determine the extent to which the financial services institution uses big data to make decisions.</td>
<td>H: The financial services institution uses data to make decisions.</td>
<td>Literature: Section 3.10.5, 3.12 Study: Discussion guide question: 10</td>
</tr>
</tbody>
</table>

Conclusions and recommendations for the research objectives are drawn up based on the findings from the empirical study and literature findings to provide a conclusion and recommendation for each research objective. A research proposition for the primary research objective was not formulated, however meeting the secondary objectives links to meeting the primary objective.
6.3.1 Conclusions and recommendations: Secondary research objective A
The secondary research objective B states that the researcher wants to "investigate the extent to which the financial services institution uses big data in its B-2-B marketing". Table 6.3 presents the findings based on literature and the empirical research followed by a conclusion and recommendations for this research objective.

Table 6.3: Conclusions and recommendations for secondary research objective A

<table>
<thead>
<tr>
<th>Literature findings secondary research objective A</th>
</tr>
</thead>
<tbody>
<tr>
<td>The literature review didn’t directly address the usage of big data from a B-2-B perspective, however in section 3.4 the literature does introduce the overall usage of big data from a marketing perspective. This section incorporates a discussion regarding the customer, and section 3.5.1 discusses the financial services customer, specifically. The insights on the customer discussed in these sections of the literature apply to both the B-2-B customer and the B-2-C consumer.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Empirical results secondary research objective A</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the past, there hasn’t been a strong focus on B-2-B from a marketing perspective within the financial institution. It was evident that there is definitely more of a focus on marketing from a B-2-B perspective going forward. Respondents agreed that this is as a result of it being more difficult to understand the end consumer from a B-2-B perspective than it is from a B-2-C perspective. Difficulties lie in the fact that a company has a vast number of senior employees so it is difficult to identify the particular employee that makes decisions and who to target with which communication (refer to section 5.2.3). In addition to this, the B-2-B arena is known to have fully integrated with external parties, mostly with the government. This ensures that data is kept clean by both parties being involved with the data. Based on the above findings, Proposition A is partially supported, with two respondents indicating that they use data solely from a B-2-B perspective. The respondents also mentioned that more attention was given to this space than was years ago, hence it is considered a growing area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conclusion secondary research objective A</th>
</tr>
</thead>
<tbody>
<tr>
<td>The financial services institution has acknowledged the importance of the B-2-B customer; hence more resources and entire departments are now dedicated to engaging with the B-2-B customer. There is clearly a lot of potential with regard to big data in this area that still needs to be uncovered.</td>
</tr>
</tbody>
</table>
Table 6.3: Conclusions and recommendations for secondary research objective A (continued)

<table>
<thead>
<tr>
<th>Recommendations secondary research objective A</th>
</tr>
</thead>
<tbody>
<tr>
<td>The financial services institution should continue to drive more focus towards using data from a B-2-B perspective, however due to the fact that it involves a completely different customer, the way in which data will be used may vary from what has been done in the B-2-C space, (refer to section 6.3.2). Below are a few recommendations to improve the usage of big data from a B-2-B perspective.</td>
</tr>
</tbody>
</table>

- **Recommendation 1**: All marketing disciplines should better integrate with the e-commerce division, particularly from a B-2-B perspective, and this could be achieved through Recommendation 11. The e-commerce division, employing more investigation and customers’ consent, would be able to track the I.P. address of the different business users doing different business activities on a digital platform. This will provide the B-2-B department with a better understanding of who their customer group is within each organisation and which individuals within that group to target with various communications.

- **Recommendation 2**: Even though respondents mentioned that the rewards system is designed slightly differently for B-2-B consumers than it is for B-2-C consumers, further alterations could be introduced in order to better incentivise the B-2-B customer. The financial services institution should have different criteria which are mandatory to be completed by the customer. Such details could be the contact information for the various key shareholders as well as a record of their respective roles. In doing this, the financial services institution can better target key individuals within the organisation with personalised messages. In return, the company can be rewarded differently to the B-2-C consumer. Examples of such rewards are free entrance into business related seminars and conferences, or upgrading the customer’s seat to business class on the owner’s next business trip.

- **Recommendation 3**: The financial services institution should also provide additional reward points if all the main shareholders from a B-2-B perspective also have their personal business with the institution, in which case both parties could reap rewards. For example, the B-2-B consumers could be provided with entrance into more conferences, and be given vouchers to take their family to dinner or a movie. This would encourage more B-2-B and B-2-C customers to become more entrenched with the brand.

- **Recommendation 4**: It is recommended that the dominant B-2-B divisions and the B-2-C divisions meet monthly to share knowledge on how each tackles their own area in terms of data usage. Each month’s meeting will have a different theme such as different data sources, different ways of integrating data sources, different ways of analysing data sources, etc. As a result, best practices could be swopped between the two business arenas, which could trigger innovative ideas. This could lead to the B-2-B space better isolating who their end customer actually is within the business so they can begin to understand them. It is also recommended that the entire B-2-B division goes on the big data course that is discussed in Recommendation 11.
6.3.2 Conclusions and recommendations: Secondary research objective B
Secondary research objective B investigates the “extent to which the institution uses data from a B-2-C (business-to-consumer) perspective”. The findings from literature and the empirical study, as well as conclusions and recommendations are all summarised in Table 6.4.

Table 6.4: Conclusions and recommendations for secondary research objective B

<table>
<thead>
<tr>
<th>Literature findings secondary research objective B</th>
</tr>
</thead>
<tbody>
<tr>
<td>The literature review didn’t directly address the usage of big data from a B-2-C perspective, however it did mention overall usage of big data from a marketing perspective (refer to section 3.4) for both the B-2-B customer and the B-2-C customer. It also provided a discussion of the financial services customer which again refers broadly to both the B-2-B customer and B-2-C customer (refer to section 3.5.1).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Empirical results secondary research objective B</th>
</tr>
</thead>
<tbody>
<tr>
<td>The majority of respondents used data from a B-2-C perspective. This is due to the fact that it is easier to understand the end consumer due to the fact that we are all consumers.</td>
</tr>
</tbody>
</table>

Based on the concluding finding, Proposition B is supported. This is due to the fact that most of the respondents indicated that they make use of data more from a B-2-C perspective than a B-2-B perspective.

<table>
<thead>
<tr>
<th>Conclusion secondary research objective B</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is evident that data being used from a B-2-C perspective isn’t new; it is something that has been done for a while. It is evident from the responses that the B-2-C division is more focused on integrating internal sources compared to the B-2-B division. This will be discussed in secondary research objective E (refer to section 6.3.3).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recommendations secondary research objective B</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is clear that the B-2-C arena is quite comfortable with using data as this is something that they have been doing for a while, however below are a few recommendations that could assist them in fully leveraging the data available to them.</td>
</tr>
</tbody>
</table>

- **Recommendation 5**: Much like the recommendation for secondary research objective B, it is recommended that the dominant B-2-B divisions and the B-2-C divisions meet monthly to share knowledge on how each tackles their own area. This could trigger cross pollination of ideas. The B-2-C arena could learn from how the B-2-B division successfully integrates external data from government to better understand their customer, for example. This will be mentioned in the next recommendation. It is also recommended that the entire B-2-C team go on a big data course discussed in Recommendation 11.
Table 6.4: Conclusions and recommendations for secondary research objective B (continued)

<table>
<thead>
<tr>
<th>Recommendations secondary research objective B</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>Recommendation 6:</strong> An additional way the B-2-C division could integrate external data more effectively is through appointing an analyst (refer to Recommendation 11) to work closely with government (refer to Recommendation 13) to identify the common links between the two databases. It could thereby ensure that the information in the vast customer base is kept updated. In addition to the B-2-C division integrating external information, they would now have data on potential customers, and not only on existing customers. This would mean that they could start targeting potential customers instead of using a blanket approach to acquire them.</td>
</tr>
</tbody>
</table>

6.3.3 Conclusions and recommendations: Secondary research objective C

Secondary research objective C is “to investigate the extent to which the financial services institution uses various data sources”. Table 6.5 provides a breakdown of the research proposition, what was found in literature as well as what was found in the empirical study, followed by conclusions and recommendations.

Table 6.5: Conclusions and recommendations for secondary research objective C

<table>
<thead>
<tr>
<th>Literature findings secondary research objective C</th>
</tr>
</thead>
<tbody>
<tr>
<td>The literature provided an in-depth discussion of the various types of data sources available to the financial services industry (refer to section 3.7). The various data sources identified as being used in the financial services industry are as follows:</td>
</tr>
<tr>
<td>• Transactional – it is massive in volume and has been used in the financial services industry for some time (Parahoo, 2012:4; Prater, 2009). It is considered a good starting point in terms of data usage but a marketer must integrate it with other forms of data to gain competitive advantage (Poyser, 2014) (refer to section 3.7.1).</td>
</tr>
<tr>
<td>• Loyalty – it is a data source that has been captured for a while but little has been done to leverage it in terms of improving the customer experience (Schumarzo, 2012). A marketer’s main use for the loyalty card isn’t as much to create a loyal customer as it is to create richer data about the customer’s behaviour (CGI, 2014:150) (refer to section 3.7.2).</td>
</tr>
<tr>
<td>• Internal – more than 50% of companies report that internal data is their primary data source (Palmer, 2013a). There is a lot of untapped value locked away in internal sources (refer to section 3.7.3).</td>
</tr>
</tbody>
</table>
Table 6.5: Conclusions and recommendations for secondary research objective C (continued)

<table>
<thead>
<tr>
<th>Literature findings secondary research objective C</th>
</tr>
</thead>
<tbody>
<tr>
<td>• E-Commerce – Doing business on an online platform has changed consumers’ behaviour. They now choose the most convenient and inexpensive online offering (Gutierrez, 2014:9). E-commerce data is used to customise and manage advertising as well as used to reveal customers’ buying behaviour (Hazan &amp; Banfi, 2013) (refer to section 3.7.5).</td>
</tr>
<tr>
<td>• Mobile – M-commerce is better than e-commerce as it is more personal and opens up location data (Poyser, 2014). In future, the financial services industry can expect a vast amount of big data being generated from this source (Zhang &amp; Chng, 2014) (refer to section 3.7.6).</td>
</tr>
<tr>
<td>• Social Media – It is seen as the perfect platform for customer relationship management. There are so many ways in which it can be used, from niche targeting and market segmentation, to recommending online products and ranking them, up-selling and cross-selling products, discovering intelligent strategies for online communities and creating audience-targeted predictive models (Chikandiwa &amp; Contoglannis, 2013:365; Kalampokis, et al., 2013:554; Zhang, 2013:3) (refer to section 3.7.7).</td>
</tr>
</tbody>
</table>

Each of these data sources generates a certain type of data. Types of data are geospatial, text and speech data (refer to section 3.8).

<table>
<thead>
<tr>
<th>Empirical results secondary research objective C</th>
</tr>
</thead>
<tbody>
<tr>
<td>The empirical research identified three sources which are considered primary data sources (refer to section 5.2.2.2 and Figure 5.3). Respondents mentioned three data sources before probing, these are mentioned below.</td>
</tr>
<tr>
<td>• Customer base data – a source that is available to everyone (refer to Figure 5.4).</td>
</tr>
<tr>
<td>• Transactional – this is a source used by all respondents, however it was mentioned that due to the fact that it can be seen as intrusive, it must be used with caution (refer to Figure 5.5).</td>
</tr>
<tr>
<td>• External – the results indicated that this data source wasn’t used extensively, with a few respondents using market research data which is all done by third party providers and other respondents mentioning the use of government data (refer to Figure 5.6).</td>
</tr>
</tbody>
</table>

After probing, respondents discussed the following data sources:

• Loyalty – this was seen as part of internal data/transactional data which was mentioned by them before, hence it could be considered a primary data source. The main use of loyalty card data is as a powerful tool to change consumers’ behaviour. It is however a data source that is housed by a separate department (refer to Figure 5.7). |
Table 6.5: Conclusions and recommendations for secondary research objective C (continued)

<table>
<thead>
<tr>
<th>Empirical results secondary research objective C</th>
</tr>
</thead>
<tbody>
<tr>
<td>• E-commerce – Even though few respondents are actively using this data source, it is seen as one that they would like to exploit in future. It is a data source that is housed by a separate department (refer to Figure 5.8).</td>
</tr>
<tr>
<td>• Mobile – This is the data source that is used the least by respondents (refer to Figure 5.3 and Figure 5.10). However, all respondents agreed that it is an important data source to be used in future.</td>
</tr>
<tr>
<td>• Social media – Quite a few respondents use this data source, (refer to Figure 5.3 and Figure 5.9) however it is housed by a separate department, who distributes comments from social media to the departments that it would be applicable to. However the usage of this data source is currently at a very operational level.</td>
</tr>
</tbody>
</table>

Respondents mentioned with each of the secondary data sources that they were housed by a different department who took ownership of processing and managing them. The primary data sources were found across the various departments.

Based on the evidence above, research Proposition C is partially supported. The respondents make full use of two out of the seven data sources discussed, and they fully acknowledge the value of the other five data sources and express a desire to exploit them in the future.

Conclusion secondary research objective C

Literature suggests that all the data sources are to be used in a financial services institution. However the empirical study suggested that only two data sources were comprehensively used (refer to Figure 5.3). The various data sources identified in literature were identified in the empirical study. There are a few conclusions that need to be drawn.

• Participants mainly employ two types of primary data sources, which are customer and transactional data. These are data sources that most respondents felt comfortable using. This is supported by literature which states that as transactional is the entry data source that is initially used.

• The secondary data sources are used as supportive data sources, with each data source being housed by a separate department. The department that houses it is responsible for using it extensively.

• Various data types weren’t mentioned at length by any of the respondents. Some respondents occasionally mentioned using voice of customer data, which is considered to be a highly unstructured source.
Table 6.5: Conclusions and recommendations for secondary research objective C (continued)

### Conclusion secondary research objective C

In addition, these data sources only show data for customers that are already with the organisation. The financial services institution doesn’t use or have any data that could be used to target potential customers. They use a spray and pray approach to attract new consumers which will be discussed in section 6.3.5.

### Recommendations secondary research objective C

Using various data sources adds competitive advantage to the financial services institution as it provides them with a clearer picture of their customer. The financial services institution can increase their usage of various data sources by implementing the following:

- **Recommendation 7**: The institution should continue using their current primary data sources to understand the customer as there is a lot of value that they add, however there is still more they can do with these data sources. The institution could use existing data sources from a different angle. The institution can uncover its existing legacy data, using analysts (refer to Recommendation 11) to transfer the data over to new digital platforms. This could then provide a broader historical view of the client, which enables the financial institution to see how they have used their products a bit differently over time as their needs have changed. Ultimately, this would provide the institution with a deeper understanding of their consumer, and a more accurate prediction of how they might behave in future.

- **Recommendation 8**: The marketing disciplines could make use of secondary data sources (e.g. loyalty, social media) more, if they were readily available to all divisions. The financial services institution would need the involvement of the I.T. department to give all employees access to the data, however all employees should sign strict confidentiality agreements and go on a POPI course to know about all the regulations before they are granted access. Making data accessible to everyone would enable more employees to play with the data and to think of innovative ways in which they could use it within their specific disciplines. They could also share their knowledge in the workshops suggested in Recommendations 4 and 5.

- **Recommendation 9**: Social media data should be better integrated with the customer base data through using predictive modelling, and analysts should with time and training possess the skills to achieve this (refer to Recommendation 11). An important aspect to remember is the institution would have to ask for the consumers’ consent for such integration. In integrating these 2 sources, the marketing discipline wouldn’t have to ask the customer for information when interacting with them. They would already have all the insights based on their social media profile. This would generate a deeper relationship with the customer and enable exceptional customer service.
Table 6.5: Conclusions and recommendations for secondary research objective C (continued)

<table>
<thead>
<tr>
<th>Recommendation secondary research objective C</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>Recommendation 10:</strong> The financial services institution can look on the internet for published articles of companies using mobile data internationally across various industries (such as Insurethebox, Google, Mobile Bank of America, IBM and GNIP). This could give the institution ideas of what its capabilities are here in South Africa. They can identify with a company that mimics their vision and create a mutually beneficial relationship with the institution. The institution will gain an understanding of how mobile data is used internationally, and in return they can provide the international institution with insights as to how to go about entering into the growing African market. Obtaining insight about mobile data usage can provide the institution with the competitive advantage of being innovators in this space. In addition, the financial services institution could also partner with the local mobile service providers. They could meet twice a year to discover what technology is available on the mobile side and the direction they are heading towards. The financial services industry can provide the mobile industry with consumer trends and data can be exchanged between both parties to ensure it is clean and accurate for both parties to use.</td>
</tr>
</tbody>
</table>

6.3.4 Conclusions and recommendations: Secondary research objective D

Secondary research objective D states that the researcher wants to “determine the extent to which the financial services institution integrates the various data sources used”. Table 6.6 gives a clear indication of the literature versus the empirical findings, ending with conclusions and recommendations.

Table 6.6: Conclusions and recommendations for secondary research objective D

<table>
<thead>
<tr>
<th>Literature findings secondary research objective D</th>
</tr>
</thead>
<tbody>
<tr>
<td>The literature suggests that it is technology that enables businesses to integrate data sources (refer to section 3.2). It is in blending all this data that the information becomes more useful, and gives a complete view of who the customer is. In addition, integrating data sources it offers the marketer more value than if the data sources were used on their own.</td>
</tr>
</tbody>
</table>

Literature also shows practical application of each data source being integrated with another and the competitive advantage it can add (refer to sections 3.7.1 – 3.7.6). |
Table 6.6: Conclusions and recommendations for secondary research objective D (continued)

<table>
<thead>
<tr>
<th>Empirical results secondary research objective D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents all agreed that integrating data sources was critical within their organisation (refer to Figure 5.11), however there were various other opinions on this topic. Some respondents stated that it easy to integrate data when it is done within a department; it only becomes difficult when integrating across departments. One of the respondents said that they only integrate with external data sources. In addition, departmental structure was uncovered as an area of interest (refer to Figure 5.16), stemming from a debate around how the analyst should be positioned within the organisation. There were two schools of thought, that the institution has either a centralised or decentralised model. The financial services institution currently sits with a decentralised model. This is where the analytics team sits away from the departments, knowing little about the organisation. Respondents mentioned that they only pull in the analytics team when necessary. It is important to note that respondents suggested that in future they wanted to have one central hub of customer intelligence. The concluding finding is that Proposition D is partially supported, that integration is important and all respondents see value in it but only partial integration has occurred to date.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conclusion secondary research objective D</th>
</tr>
</thead>
<tbody>
<tr>
<td>The participants’ view and what was found in literature correlate in that it is clear that data integration is necessary to a large extent. It was however discovered when respondents were asked to talk about the various data sources used, that they only mentioned two, being transactional and customer based data. The other data sources were used only to a certain extent, with respondents saying “we don’t really use it” or “we use it every now and again as it sits with another department”. It would appear that using it “now and again” would mean it is partially integrated. Hence even though they acknowledge that integration is important they aren’t fully integrating across different data sources; full integration has yet to happen.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Recommendations secondary research objective D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due to the fact that integrating data can add competitive advantage, the following recommendations have been put forward.</td>
</tr>
</tbody>
</table>

- **Recommendation 11**: The financial services institution can continue to have a decentralised structure, however they would require one analytics person within each marketing discipline who is responsible for integrating all data sources for that specific discipline. This individual will have a thorough understanding of the data needs for that particular department. Capable and qualified individuals are expensive and hard to come by, so a solution would be to take the individual championing the usage of big data within their marketing discipline, and send them on courses such as SQL, Qlickview, NoSQL, and Hardoop in order to upskill them. They can introduce the latest software used to manage big data and use this as a foundation to


Table 6.6: Conclusions and recommendations for secondary research objective D (continued)

<table>
<thead>
<tr>
<th>Recommendations secondary research objective D</th>
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</thead>
<tbody>
<tr>
<td>learn from more senior analysts. In addition, these individuals should meet with other analysts situated within other marketing disciplines. In doing so, they will have an understanding of the data sources available across the organisation and if and how it could be implemented and integrated in their particular discipline.</td>
</tr>
<tr>
<td>In addition, a handpicked senior individual from the current analytics team should be sent to do the master’s degree in advanced analytics offered by Northern Carolina State University. This individual can return with knowledge from a first world country of how to best incorporate and manage big data. They could then take this knowledge create a customised big data course specifically catered to the financial services institution. The one course will be used to educate the senior analysts, then another basic course can be given to educate all employees within the various marketing disciplines. In this way, world class knowledge will be disseminated throughout the institution, increasing the usage of data across the institution.</td>
</tr>
<tr>
<td><strong>Recommendation 12:</strong> These decentralised analysts (Recommendation 11) should partner with the I.T. teams and have monthly meetings. The analyst can thereby be made aware of the workings of the I.T. structure, they can ensure that they understand which systems connect and how they work. The analyst can then communicate with the marketing discipline things that can be done along with things that can’t yet be done due to regulations such as POPI. On the other end, the I.T. department can have a solid understanding of the direction in which the marketing discipline wants to head.</td>
</tr>
<tr>
<td><strong>Recommendation 13:</strong> All marketing disciplines should embrace external data more frequently, due to the fact that it adds value to their insight. In addition to Recommendation 4 and 5, they could do this by bi-annually meeting with the various government divisions (Home Affairs, SARS, etc.), to have a better understanding of the data they have. They could then set up a mutually beneficial relationship, agreeing that in exchanging data they will ensure the data is kept clean and up-to-date for all parties involved. In working closely with the I.T. department as well as the designated internal analyst, this would assist various marketing departments in integrating with external data sources to identify potential customers rather than using the spray and pray approach.</td>
</tr>
<tr>
<td><strong>Recommendation 14:</strong> The financial services institution is currently using some of the leading software packages to manage the integration of big data. All current analytical employees should go on training courses on the software they use twice a year. This is due to the fact that big data is constantly evolving and the software could also evolve with new features that could benefit the institution. They should also subscribe to big data newsletters, that the I.T. department also receives, which will keep them updated as to new technologies that could be tested by using free trial periods. Identifying new technologies would contribute to the institution being driven by innovation and gaining competitive advantage.</td>
</tr>
</tbody>
</table>

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6.3.5 Conclusions and recommendations: Secondary research objective E

The secondary research objective E is described as the researcher determining “the extent to which the financial services institution uses data for consumer insights”. The literature and empirical findings are summarised in Table 6.2, followed by the conclusions and recommendations for this research objective.

Table 6.7: Conclusions and recommendations for secondary research objective E

<table>
<thead>
<tr>
<th>Literature findings secondary research objective E</th>
</tr>
</thead>
<tbody>
<tr>
<td>The literature suggested that the main insights derived from big data are segmentation insights, which enable the marketer to identify and treat individual customers differently. There were three core segmentation insights a marketer would seek, namely demographics segmentation, 360 degree customer insights and profiling, and sentiment insights (refer to section 3.9).</td>
</tr>
<tr>
<td>- <strong>Demographic segmentation insights</strong> – can be used for segmentation to explain broad behaviours but it is weak at explaining in-depth insights about customer behaviour, brand preferences, product purchasing etc. (refer to section 3.9.1).</td>
</tr>
<tr>
<td>- <strong>360 degree insights</strong> – big data enables the financial services industry to target micro customer segments, as customers are seeking tailored, value-added services. It will provide the marketer with more detailed insights about customer purchase behaviour, likelihood of referrals, revenue potential and risk of attrition (refer to section 3.9.2).</td>
</tr>
<tr>
<td>- <strong>Sentiment insights</strong> – these insights aim to extract emotions and opinions from text, most notably social media, and they enable marketers to assess whether comments about the brand are positive or negative overall, which assists marketers in understanding customers’ confidence indices (refer to section 3.9.3).</td>
</tr>
</tbody>
</table>

In addition, literature suggests that new financial consumers are demanding services made available on digital platforms (refer to Figure 3.7).

<table>
<thead>
<tr>
<th>Empirical results secondary research objective E</th>
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</thead>
<tbody>
<tr>
<td>Respondents mentioned two main themes from the discussion question regarding insights. The first theme identified was about understanding and changing customers’ behaviour (refer to section 5.2.3.1). This was about monitoring customers’ behaviour and changing it using the digital platform, thereby moving the consumer from bricks-to-clicks (refer to Figure 5.12). There is a huge drive throughout the industry to change customers’ behaviour to using an online platform. The financial</td>
</tr>
</tbody>
</table>
Table 6.7: Conclusions and recommendations for secondary research objective E (continued)

<table>
<thead>
<tr>
<th>Empirical results secondary research objective E</th>
</tr>
</thead>
<tbody>
<tr>
<td>services institution relies heavily on the rewards program as a tool used to initiate this shift in customer behaviour.</td>
</tr>
</tbody>
</table>

The second theme identified is customer profiling, segmentation and targeting (refer to section 5.2.3.1). This theme is about understanding the customer upfront from the acquisition phase. In better understanding the customer, the marketer is able to move away from a spray and pray approach, to having more profiles (known as nano segments) which will assist with more targeted marketing activities (refer to Figure 5.13).

To reiterate what was said in section 6.3.3, an opposing theme was identified when respondents mentioned that data was only used after the customer has been acquired. The institution never uses data before acquisition phase. Hence the blanket approach of billboards to the masses is used for potential customers.

Based on the findings, secondary research objective F is fully supported, as the company is using data to a large degree for segmentation and profiling insights. Having said this, there is still room for growth where they could dig deeper into sentiment insight.

Conclusion secondary research objective E

Combining the findings from literature and the empirical study, respondents were using data for demographic insights, as the customer base was identified as a primary data source (See Figure 3.10). The customer base consists of demographics and geographical data. Respondents are comfortable with using data for these insights as all respondents could talk with ease about how they use this data source for insights.

In addition, respondents were also using insights on the next level of Figure 3.10, which is 360 degree segmentation and profiling. There is a company drive to move away from the spray and pray approach of marketing, and they are using more focused targeting. The data the institution is currently using is in line with what theory states. Literature states that consumers are demanding to use digital channels, however referring to the empirical findings, it is clear that the financial services institution is using data and the rewards program to promote this behaviour.

The highest level of insight in Figure 3.10 is sentiment insight. Sentiment insight is used by the financial services industry however it isn’t known by this term. The word “sentiment” was never mentioned in interviews, and the closest the respondents came to mentioning it was when they said that data sources would be used to manage the brand’s reputation and handle any negative or positive feedback.
Table 6.7: Conclusions and recommendations for secondary research objective E (continued)

<table>
<thead>
<tr>
<th>Recommendation secondary research objective E</th>
</tr>
</thead>
<tbody>
<tr>
<td>The financial services institution is using insights from data across all marketing disciplines, which is promising. However, below are a few recommendations that could increase insights gleaned from big data.</td>
</tr>
</tbody>
</table>

- **Recommendation 15:** Through the use of additional analyst resources (refer to Recommendation 11), as well as the integration of data (refer to Recommendation 9), the financial services institution could use data to create real-time reliable niche customer profiles. First, these profiles should contain more stages/phases in a customer’s lifecycle as well as various different lifecycles, as not all customers follow the same lifecycle. The company should use data to isolate patterns of different lifecycles. The financial services institution can thereby direct more relevant products and communications to more niche customer groups in line with the specific lifecycle they are in. For example, a couple may be together for 10 years on Facebook, but may not follow the lifecycle of getting married, so instead of punting communication regarding weddings, the institution can punt communication about other milestones such as children or buying a house. Secondly, these real-time profiles should be provided to frontline staff, as they will enable them to provide an impressive experience for the customer, by knowing all the fundamentals about the customer without having to ask them. This positive customer experience contributes to building a strong brand.

- **Recommendation 16:** The financial services institution can gain deeper sentiment insights by incorporating analysts in each marketing discipline (refer to Recommendation 11), specifically the social media discipline. Analysts could identify the most important influencers on social media. When identifying influencers, the institution is equipped with an idea of who the influential customers are so that they can target those who will contribute to building the brand. Analysts should also single out those customers whose complaints are influential, and ensure their queries are resolved in a professional and timely manner. As can be plainly seen, data can be used to build the brand and provide better customer service.

6.3.6 Conclusions and recommendations: Secondary research objective F

The below section refers to the secondary research objective F, whereby the researcher determines “the extent to which the financial services institution uses insights for the implementation of marketing activities”. Table 6.8 will provide an understanding of the findings in the literature review and empirical study, ending with conclusions and recommendations.
Table 6.8: Conclusions and recommendations for secondary research objective F

<table>
<thead>
<tr>
<th>Literature findings secondary research objective F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature suggests that there are numerous marketing activities that rely on the insights from big data, each of which will be briefly summarised below.</td>
</tr>
</tbody>
</table>

- **Sales** – uses big data to anticipate customer behaviour, cut objections short and meet unspoken customer needs. In addition it is used to identify valuable customers and find opportunities to cross-sell products and services (refer to section 3.10.1).

- **Marketing communications (direct marketing)** – in the past, all marketing offers were distributed across the entire customer base, however today marketers are using data to record customer interactions and show customers that their preferences are stored (refer to section 3.10.2).

- **Pricing** – people have different expectations of their financial services provider and are willing to pay for services best suited to them. The financial services institution needs to use data to customise pricing for their customers (refer to section 3.10.3).

- **Product development/design** – using data within the various phases of the new product development process, which enhances efficiency, reduces costs and enriches the customer experience (refer to section 3.10.4).

<table>
<thead>
<tr>
<th>Literature findings secondary research objective F</th>
</tr>
</thead>
<tbody>
<tr>
<td>- <strong>Market research</strong> – there is a debate over whether big data is replacing market research, however big data can work alongside marketing research, as this adds human psychology to the data (refer to section 3.10.5).</td>
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</table>

<table>
<thead>
<tr>
<th>Empirical results secondary research objective F</th>
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</thead>
<tbody>
<tr>
<td>The respondents mentioned that different disciplines in the marketing department use data differently. The overall discussion led to the finding that data was used mostly from a direct marketing perspective. Respondents mentioned that they are heavily reliant on data from a content marketing perspective wherein they generate relevant communications/products for the customer in order to create a relationship for them (refer to section 5.2.3.1, Figure 5.14).</td>
</tr>
</tbody>
</table>
Empirical results secondary research objective F

To a smaller extent some respondents mentioned that there will always be a sales aspect behind everything that the financial services institution does as they need to make money (refer to section 5.2.3.1).

Respondents also expressed their usage of data in order to understand which phase of the customer lifecycle the customer is in so they can better entrench the customer within the organisation and at the same time increase the profitability of the customer (refer to section 5.2.3.1, Figure 5.15). It is clear that the marketing activity around customer relationship management relies heavily on data.

Respondents mentioned that at this stage they use a lot of social media data to manage sentiment about the brand’s reputation by addressing customer complaints on the various social media platforms (refer to sections 5.2.3.1 and 6.3.5).

To a larger extent data is used from a customer service perspective in terms of identifying complaints, however all respondents mentioned the fact that they get passed onto the applicable areas, customer services isn’t something directly addressed by them (refer to section 5.2.3.1).

Based on concluding evidence, Proposition F is supported: most marketing activities are heavily reliant on big data with direct marketing being the most dependent; however there is still room for growth.

Conclusion secondary research objective F

Referring to Figure 3.10, the financial services institution has managed to progress halfway up the marketing activities section successfully. Direct marketing and customer relationship management are the two marketing disciplines most dependent on big data. Branding was definitely identified as a marketing discipline that was reliant on data; however a lot more work needs to be done in this area in order to change the customers’ perception so that they view the brand as a lifestyle brand. Customer service is highly dependent on data, however it is not specifically based within the various marketing disciplines.

Recommendation secondary research objective F

To ensure that all marketing disciplines are reliant on big data, the following recommendations have been made:

- **Recommendation 17**: From a direct marketing perspective, the financial services institution should continue with their current method of using data. However, in addition they should be using external data (refer to Recommendation 13) to ensure that the data is kept clean and accurate. Accuracy in sending the right communication to the right customer is important in...
Table 6.8: Conclusions and recommendations for secondary research objective F (continued)

<table>
<thead>
<tr>
<th>Recommendation secondary research objective F</th>
</tr>
</thead>
<tbody>
<tr>
<td>building a strong brand. In addition, the institution can use accurate data along with additional analyst resources, (refer to Recommendation 11), the marketer could create nano segments, increasing the personalisation of products to the customer, and deepening the relationship with the customer.</td>
</tr>
<tr>
<td><strong>Recommendation 18:</strong> From a customer service perspective, the institution can make better use of its voice of customer data. They can do so with the additional resources suggested in Recommendation 11, as well as upcoming technologies (refer to Recommendation 14). The analyst would be able to pick up key phrases from the voice of customer data that are particularly used in a South African context. Due to the fact that technologies out there are not designed specifically for the South African context, local phrases are difficult for them to pick up. The institution can use I.T. and analysts to train current systems to pick up South African phrases as well as look out for new technologies emerging on the market that have these capabilities. When customers phone in and are angry, for example, these key phrases/words are picked up, directing the customer’s call to the most experienced call agent. The most experienced call agent would have the skill to best address an angry customer and they hopefully can resolve the customers pain points before the customer goes viral with the complaint. This ultimately protects the brand’s image and improves customer service.</td>
</tr>
<tr>
<td><strong>Recommendation 19:</strong> The financial services institution should look for published work of case studies on the internet or workshops of how international companies use data in their favour to create a strong and powerful brand image. Consumers perceive these brands to powerful and innovative when it comes to delivering personalised products suited to meet their specific needs and they trust them. Trust is something the financial services institution is constantly striving to establish with their consumers, and this could be a way to establish their brand as a trusted one.</td>
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</table>

6.3.7 Conclusions and recommendations: Secondary research objective G

The research objective G states that the researcher is to determine “the extent to which the financial services institution uses data to be market orientated”. Table 6.9 provides a breakdown of the associated literature, the research findings, ending with conclusions and recommendations.
Table 6.9: Conclusions and recommendations for secondary research objective G

<table>
<thead>
<tr>
<th>Literature findings secondary research objective G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditionally, the financial services institution was seen as sales orientated and as such was focused on selling and not necessarily meeting the customers’ needs. They were focused on convincing the customer that they needed the various products and services offered by the institution (refer to section 3.11). Today, the financial services institution would like to be seen as customer centric (refer to sections 3.4.1, 3.11), hence whatever they do is about the customer, meeting their individual needs, adding value to their lives, putting the customer in the middle of everything the financial services institution does. Over time, the industry has evolved from being sales orientated to being market orientated.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Empirical results secondary research objective G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents are of the opinion that the financial services institution is market orientated. All respondents agree that everything that they do is about the customer (refer to section 5.2.3.1). When referring to Figure 3.9, it is evident that building a strong relationship with the customer is what is important to the financial services institution. To a small degree respondents mentioned that they can’t separate sales orientation and market orientation. This is confirmed by one respondent stating that the institution has recently taken two departments in the organisation and merged them (refer to section 5.2.4.1). The one department was purely sales driven and the other department was purely market driven. This has caused an interesting adjustment to teach the employees who sell how to meet a customer's needs and create a relationship with them, and the marketing team had to learn how to drive sales. Based on the evidence, this research objective is fully supported. The financial services institution is using data from a market orientation; they state that adding value to the customer is the foundation to everything they do.</td>
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<table>
<thead>
<tr>
<th>Conclusion secondary research objective G</th>
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<tbody>
<tr>
<td>The literature and empirical findings are aligned in that the financial services industry has transitioned over time to being market orientated. Referring to Figure 3.10, the financial services institution is using data to add value to customers' lives, and they have therefore progressed to the top tier of the model, under orientations. At times it evident that there is a merge happening between the two orientations.</td>
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<table>
<thead>
<tr>
<th>Recommendation secondary research objective G</th>
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</thead>
<tbody>
<tr>
<td>Even though the institution is successfully implementing data from a market orientation, it is recommended that marketing and sales departments work more closely together, the following recommendations will illustrate how:</td>
</tr>
</tbody>
</table>

- **Recommendation 20**: Both the sales and marketing departments could go on a workshop much like the one mentioned in Recommendations 4, 5 and 11, where the analysts sitting
Table 6.9: Conclusions and recommendations for secondary research objective G (continued)

<table>
<thead>
<tr>
<th>Recommendation secondary research objective G</th>
</tr>
</thead>
<tbody>
<tr>
<td>within each of the marketing disciplines show the importance of usage of data in each of their divisions. This will assist the marketing and sales employees along with the analysts to align towards one main goal of using data to help the customer. Data usage should increase and both disciplines can work together to entrench the customer with the brand by constantly trying to cross-sell and up-sell products.</td>
</tr>
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</table>

- **Recommendation 21**: The divisions could also work together in keeping the vast customer database that is extensively used across the institution updated. Marketing could identify potential clients for a specific product whose details haven’t been updated recently, and the sales division could target those consumers with the product however at the same time they could update the database. This would lead to more accurate data that could be used for direct marketing.

6.3.8 Conclusions and recommendations: Secondary research objective H

Research objective H is described as the researcher determining “the extent to which the financial services institution uses data to make decisions”. Refer to Table 6.10 for a summary of the literature relating to this objective, findings from the empirical research, and conclusions and recommendations.

Table 6.10: Conclusions and recommendations for secondary research objective H

<table>
<thead>
<tr>
<th>Literature findings secondary research objective H</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is a huge shift in the financial services industry towards data-driven decision-making, and marketers are encouraged to move away from instinct and trust their judgment less (refer to section 3.12). In addition there is a huge demand for data to come through in real time so as to make actionable insight available quicker in order to make decisions. Literature suggests that the psychology of why people are doing what they are doing is a compliment to what can be measured by big data, that big data should be used alongside the human aspect like market research (refer to section 3.10.5).</td>
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<table>
<thead>
<tr>
<th>Empirical results secondary research objective H</th>
</tr>
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<tbody>
<tr>
<td>Respondents were of the opinion that they were heavily data dependent when it came to making decisions, some stating that their department wouldn’t exist if it wasn’t for data (refer to Figure 5.17). However it was brought up on numerous occasions that data should never be analysed in isolation, and that the human element should be included (refer to section 5.2.4.2). The majority of respondents use data between 80% and 90% of the time to make decisions, the remaining 10% to 20% is human</td>
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</tbody>
</table>
Table 6.10: Conclusions and recommendations for secondary research objective H (continued)

<table>
<thead>
<tr>
<th>Empirical results secondary research objective H</th>
</tr>
</thead>
<tbody>
<tr>
<td>intuition, or going in the direction that the company wants to go. One of the respondents mentioned that data can never be used at a strategic level, because CEOs rely on information, and this information stems from data that is historic. You can’t create a strategy for the future based on past data, hence most of the data is used for operational decision-making (refer to section 5.2.4.2).</td>
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</table>

Based on the evidence, Proposition H is partially supported, with all marketing disciplines highly dependent on data, but it would seem it is only used to make decisions on an operational and tactical level.

<table>
<thead>
<tr>
<th>Conclusion secondary research objective H</th>
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</thead>
<tbody>
<tr>
<td>Data is extremely important in making decisions; both the literature and the empirical study agree that to some degree human intuition is required. Referring to Figure 3.10, data is being used at a more tactical and operational level rather than a strategic level because it consists if predominantly historic information. To move towards a more strategic drive (up a level on Figure 3.10), the institution would need to ensure that their data is more real-time.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Recommendation H: secondary research objective H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Even though the institution is successfully using data to make decisions from a marketing perspective, a few recommendations have been made below.</td>
</tr>
</tbody>
</table>

- **Recommendation 22**: The institution should be investing in additional resources (refer to Recommendation 11) and always be scouting for new software and upskilling on current software (refer to Recommendation 14). Their analysts can start using predictive analytics which include predictive modelling, forecasting and statistical analysis to do regression models. This could assist the marketer in using historic data in terms of legacy data (refer to Recommendation 7) to predict future trends. This information will help the financial services industry predict rather than be merely reactive, and it will ensure that data is delivered in real-time. As a result, marketing disciplines can be on the cusp of what is happening in the customer’s environment, resulting in the marketing discipline making use of data at more of a strategic level.

- **Recommendation 23**: Using the skills of an analyst (refer to Recommendation 11) to overlay market research data regarding what people have said onto big data will automatically provide the human element that all respondents are seeking. This would involve the analyst identifying a common link between the data the financial services institution currently has and including it in the data the external market research companies have to collect. In establishing a link from the start, seamless integration could occur, resulting in a human element being incorporated into big data to make decisions. Incorporating the human element from market research with big data enables the marketer to see how the customer actually behaves as opposed to how they say they will behave.
6.3.9 Conclusions and recommendations: Primary research objective

The primary research objective is “to investigate the extent to which a financial institution in South Africa uses big data from a marketing perspective”. Refer to Table 6.10, which will provides the findings from the literature review along with findings from the empirical study. It will then conclude and provide a recommendation for this primary research objective.

Table 6.11: Conclusions and recommendations for primary research objective

<table>
<thead>
<tr>
<th>Literature findings primary research objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>The literature introduced two main themes that contributed to the findings of primary research objective. The first literature finding was that the main purpose of using big data from a marketing perspective is to have 360 degree view of the customer (refer to section 3.4). This information empowers a marketer to create an unforgettable and personalised experience across all channels.</td>
</tr>
</tbody>
</table>

The second literature finding was the introduction of the big data model (refer to Figure 3.10). This showed the various degrees to which a typical company functioning within the financial services industry can use big data from a marketing perspective. Each aspect of the model was comprehensively discussed, and the higher a company progresses up the levels the model, the greater the extent to which the institution uses the big data will be (refer to section 3.6).

<table>
<thead>
<tr>
<th>Empirical results linked to primary research objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>The summary of empirical results for the secondary research objective are discussed below due to the fact that they are responsible for assisting the researcher in answering the primary objective.</td>
</tr>
</tbody>
</table>

- Secondary research objectives A and B were answered with the institution using data in the past more from a B-2-C perspective than a B-2-B perspective. As a result, a lot of work has already been done with data from a B-2-C perspective in terms of understanding the consumer. With this identified, more focus is being directed towards using data from a B-2-B perspective in the future for this division to better understand their customer.

- Secondary research objective C was answered with the institution being aware of all data sources available, however only two data sources were comprehensively used, the rest were seen as secondary data sources to be used to support the primary data sources.

<table>
<thead>
<tr>
<th>Empirical results linked to primary research objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>The summary of empirical results for the secondary research objective are discussed below due to the fact that they are responsible for assisting the researcher in answering the primary objective.</td>
</tr>
</tbody>
</table>

- Secondary research objective D was answered with the institution agreeing to the importance of integrating data, however this is not always possible, with only a few marketing disciplines integrating external data. Integrating internal data sources fully is still a long way off.

- Secondary research objective E was answered with the main insights identified by the financial services institution being better understanding the customer for segmentation and profiling as well as changing their customers’ behaviour to using digital platforms.
Table 6.11: Conclusions and recommendations for primary research objective (continued)

<table>
<thead>
<tr>
<th>Empirical results linked to primary research objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Secondary research objective F was answered with the marketing activities that were most reliant on using big data being direct marketing and customer relationship management. Social media follows these two data sources, however it is used at a very basic level.</td>
</tr>
<tr>
<td>- Secondary research objective G was answered with big data being used within the institution in order for them to be market orientated, with the main focus of the institution being to be perceived as customer centric.</td>
</tr>
<tr>
<td>- Secondary research objective H was answered with data being extremely important in decision-making, but due to the fact that data is historic, it is currently used within the institution to make mostly operational decisions.</td>
</tr>
</tbody>
</table>

Based on the concluding evidence of each of the secondary research objectives, the primary research objective can be answered. The extent to which the financial services institution is using big data is at a moderate level, with not all aspects shown in Figure 6.1 being used comprehensively.

**Conclusion primary research objective**

Each secondary objective being answered assists the researcher to answer the primary objective. The primary objective is the extent to which big data was used in a financial services institution from a marketing perspective, and this usage is considered to be of a moderate level. The designation ‘moderate level’ can be explained by referring to Figure 6.1, which shows that some data is used comprehensively and others have a lot of room for growth. However all respondents are aware of the value and competitive advantage it can add and also have a general idea of how they want to see it grow.

A primary way in which the institution can support this growth is through investing in human resources. In doing so they would have the capacity to use the technology available to use big data more comprehensively.

**Recommendation primary research objective**

The financial services institution has reached a moderate level of data usage overall, particularly in terms of insight and marketing activities. For better data usage across the institution from a marketing perspective, the institution could introduce the employees to the model developed in Figure 5.18. This would give all employees a better understanding of the various data sources available to the financial services industry and show them which level they are currently operating at throughout each of the dimensions by the colour the aspect is highlighted in, with red being areas of excellence where data is comprehensively used and white or yellow showing areas that need improvement. It also gives them a measure to encourage them to move up to the next level.
Figure 6.1: Summary of empirical study on big data model

Source: Researcher’s own construct.
Figure 6.2 provides an overall summary of how all the objectives, propositions, main research findings and recommendations all link together to reach the findings to the primary research objective.

**Figure 6.2: Linking research objectives, questions, propositions, main findings and recommendations**
6.4 LIMITATIONS OF THE STUDY

Even though this study was prepared carefully ensuring that all possible objections could be overcome/eliminated before commencing, there were certain limitations to the study that were out of the researcher’s control. These will now be discussed from both a literature and empirical perspective. The latter will be discussed first.

- Limited literature was found in terms of big data being used in South Africa in the financial services industry, particularly from a marketing perspective. Hence a lot of the literature incorporated is internationally based, and this literature assumes that data is easier to embrace due to technological advancements.
- Due to the fact that it is such a new term, limited in-depth literature was found on the topic, and occasionally the researcher needed to incorporate literature on the usage of data across various other industries that would apply to the financial services industry.
- The model (Figure 3.10) was initially designed for the retail industry in 1991, and there are therefore numerous gaps the researcher had to fill in order to include the term big data. The model also had to incorporate data usage specifically within the financial services industry, rather than the retail industry.
- Limited updated information was available on the classification of the financial services industry. There was a lot of literature on insurance, banking and investment and related services individually, but limited literature on the financial services industry as a whole.

Limitations from the empirical perspective are as follows:

- Due to the fact that the topic of big data involves highly confidential information, the researcher had to ensure the confidentiality agreement initially agreed upon was met at all times. Hence the researcher ensured some information was aggregated or changed to comply with the agreement. The limitation of this is that in aggregating the data, possible additional findings of the research may have been lost.
In addition, a few respondents were very cautious with what they said as they knew about how important confidentiality was. This resulted in the researcher having to use a lot of probing questions as well as constantly reiterating that the respondent will have the opportunity to review their transcriptions to see if they are happy with what they have said.

- Due to the fact that it was a small sample size, which was appropriate as the researcher did reach saturation as recommended in the literature (see section 4.5.2.1), one cannot generalise the findings across other institutions. It is for this reason that future research could be done across various other institutions. This is a recommendation which will be discussed more in-depth below.

- Identifying respondents who were knowledgeable enough that also had the time to participate in the study was challenging. The result of this is that it was difficult to determine whether respondents were specifically suited for the study. Due to the fact that data usage happens across the marketing disciplines, respondents can’t be identified by a specific job title. Respondents being identified through snowball sampling can be seen as a reflection of a subjective point of view. Whether the potential participants who were recommended were in fact the best candidates is a matter of subjective opinion. It is for this reason that the researcher incorporated a screening question as the first question of the discussion guide, to eliminate any respondents who wouldn’t suit the study.

6.5 SUGGESTIONS FOR FUTURE RESEARCH

There are four suggestions for future research.

- Respondents constantly mentioned how information was passed between departments. Future research could be conducted to investigate the flow/movement of information between departments in the organisation. This would give the researcher an idea of the degree to which data is being transferred, and whether departments are operating in silos with their data.
In-depth research could be conducted to discover to what degree the different departments integrate their internal data compared with their external data. This would identify which data sources haven’t yet been used by various departments and how often data sources are used in isolation.

This particular research could be used to provide more in-depth research by producing an internal document that wouldn’t be published. In doing so the researcher could include deeper insights without having any confidentiality agreements hindering the detail of the results.

Lastly, a research study could be conducted in order to determine to what degree the model illustrated in Figure 3.10 can be used across the other institutions within financial services industry, which were mentioned in section 2.3.

6.6 CONCLUSION

This chapter commenced with an overview and summary of the entire study thus far, breaking down each of the chapters by providing a brief explanation. It then addressed each of the research objectives individually by identifying the propositions associated with the research objectives, followed by literature empirical study findings. In the same discussion, conclusions and recommendations were provided for each of the research objectives.

To conclude, this empirical research addressed the primary research objective to determine the extent to which a company in the financial services institution uses big data from a marketing perspective. The main finding of the study was that the financial services institution uses data at a moderate level from a marketing perspective. With this being said, some disciplines use data more comprehensively than others. The findings have been plotted on a model (refer to Figure 6.1), and the areas that can make use of data more extensively have been highlighted. Big data is definitely a topic that is being addressed by marketing, as the marketing discipline understands the competitive advantage it could gain by better understanding the customer. The researcher is of the opinion that the model can be used across the financial services industry, and would expect similar results across the industry. However, as mentioned by one of the respondents in the study, data will never be
fully used. This is due to the fact that there will always be new ways one could incorporate big data from a marketing perspective, hence the model should always be updated and adapted in order to constantly create a new ceiling for the comprehensive usage of data.
LIST OF REFERENCES


Johannesburg.


# THE USAGE OF BIG DATA IN A FINANCIAL SERVICES INSTITUTION: A MARKETING PERSPECTIVE

## Research Objectives:

### Primary Objectives

Research objective A: To investigate how a financial institution in South Africa uses big data from a marketing perspective.

### Secondary Objectives

Research objective B: Determine the extent to which big data is used by the financial services institution in business-to-business (B-2-B) marketing.

Research objective C: Determine the extent to which big data is used by the financial services institution in business-to-consumer (B-2-C) marketing.

Research objective D: Determine the extent to which the financial services institution uses various data sources.

Research objective E: Determine the extent to which the financial services institution integrates data sources to better understand the customer.

Research objective F: Determine the extent to which the financial services institution uses data for consumer insights.

Research objective G: Determine the extent to which the financial services institution uses insights for the implementation of marketing activities.

Research objective H: Determine the extent to which the financial services institution uses data to be market orientated.

Research objective I: Determine the extent to which the financial services institution uses data to make decisions.
Objective:
To let respondents know what is expected of them in the interview, how things will work and to ensure that they feel relaxed and comfortable.

INTRODUCTION (Total: 2 minutes)

- Interviewer introduces themselves.
- Lastly, which is most important, the interviewer needs to inform the respondent of the importance of CONFIDENTIALITY as well as ANONYMITY to be kept throughout the interview. In the report all names, affiliations and job titles will be removed. Just reiterating it is a very high level discussion and questioning on the topic of big data.
- The interviewer then explains the interview process for next 40 minutes – that it is not a test, no right or wrong answers, personal perceptions and opinions may differ; need for individual (honest) responses; obtain permission to record and inform of any observers.
- The interviewer explains that the interview follows a generic structure which consists of seven parts. Within each part there are introduction statements/sentences to the question, these are there to provide the respondent with a bit of a background regarding the theme being asked. After this the interviewer will commence with asking of one or 2 questions before moving onto the next part.
- The interviewer informs the respondent that if at any point the question seems confusing or unclear, they should ask they interviewer to rephrase it. They should be encouraged to take as much time as needed to think about and answer the question at hand. The interviewer should also take this opportunity to encourage respondents to express themselves openly.
- Inform them that the transcripts generated from the interview will be sent back to them to ensure that the statements the interviewer transcribes are in fact the respondent’s actual wording.
Objective:
To test the respondent's competency with regards to their understanding of the term big data. The purpose of Part A is that it serves as a screening question to assess if the respondent has the right knowledge set to part-take in the rest of the interview.

RECORDING COMMENCES

PART A – SCREENING QUESTION
UNDERSTANDING OF THE TERM BIG DATA
(Total: 3 minutes)

Big data is a term that is being used across the world and has proven to transform industries and companies. This term big data is loosely used in many articles and across various industries and companies. With this knowledge in mind if you can answer the following question.

1. There are various definitions going around regarding the term big data, if I can ask you to please tell me, in as much detail as possible, your understanding of the definition of big data.

Probing Questions:
   - Probing – Question 1

Perhaps think of the term data in the past and what it is today.
Perhaps thinking of some characteristics of big data could assist you in providing me a description of the definition.

Objective:
Determine the extent to which big data is used by the financial institution from two perspectives, firstly, from a business-to-business (B-2-B) marketing & business-to-consumer marketing, and secondly, from a marketing perspective.

PART B - USAGE OF A DATA FROM A MARKETING PERSPECTIVE
(Total: 5 minutes)

Big data is used in various ways by different departments to serve various shareholders within the financial services industry. This is a two-fold question

2. Data can be used to serve B-2-B (Business-to-Business), can you tell me a bit about how you in your role make use of data to address this market (if applicable).

3. Data can also be used to serve B-2-C (Business-to-consumer) markets, can you tell me a bit about how you in your role would make use of data to address this market, (if applicable).
4. From your experience, can you tell me a bit more as to how
   a) Your department uses big data from a marketing perspective
   b) Your company uses big data from a marketing perspective

Probing Questions:

- Probing – Question 2 & 3
  If they are only directly involved with one division (being B-2-B or B-2-C), what is their knowledge set on the other era

- Probing – Question 4
  If the respondent doesn't work directly in/with marketing a probing question would be does marketing communicate what they want from you, do you know their end goal of what they are looking for from a marketing perspective. What is their relationship with marketing?

  The respondent can be probed with their views on how data assists in a customer centric approach, creating a customer experience, having a 360 degree view of the financial services customer and it big data adding competitive advantage in other ways.

**Objective:**
To better understand if they are able to identify various data sources and the usage of the various different sources of data from a marketing perspective.

**PART C - BIG DATA MODEL: VARIOUS DATA SOURCES**
(Total: 15 minutes)

I have structured a model to guide this study, which incorporates various data sources, how each of the lead to various potential insights and then how those insights translate into various marketing activities ultimately leading to decision-making by various shareholders. To begin the discussion on the model we will begin with a brief discussion on various data sources.

5. Data comes from many sources, and specifically the financial services industry which is renowned for having a lot of data. Could you please explain the various different data sources that you encounter in your day-to-day activities? If you can start off by explaining the internal data sources firstly and then the external data sources.
6. If I can ask for you to please explain the degree to which you would you say your department integrates the various data sources for insights?

   - Yes we integrate – could you please elaborate in terms of which sources you integrate, the accuracy and usefulness of the integration.
   - No we don’t integrate – what is your reasoning behind this?

Probing Questions:

- Probing – Question 5

If the respondent is finished with the discussion the interviewee could probe by mentioning the following data sources:

   - Transactional
   - Loyalty Card Data
   - Internal
   - E-commerce
   - Mobile Commerce
   - Social Media

What is your understanding of the organisations usage of the following data: Geospatial data, text data and speech data?

- Probing – Question 6

Perhaps it will assist in rephrasing the question, do you ever combine data sources. If so, which ones do you combine and why would you combine them.

Objective:
To have a better understanding if they actually make use of the big data to gain insights from a marketing perspective.

PART D - BIG DATA MODEL: VARIOUS INSIGHTS
(Total: 3 minutes)

Moving onto the next phase of the big data model, being insights. Insights are the findings/results gleaned from integrating various data sources.
7. If I can ask you to talk about in general what insights do you hope to find when working with big data from a marketing perspective.

**Probing Questions:**

- Probing – Question 7
  
  What is your primary goal in integrating data, is it customer driven, operation driven, risk driven?

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**Objective:**

To identify how and if the insights from big data are used within marketing activities.

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**PART E - BIG DATA MODEL: MARKETING ACTIVITIES**

(Total: 7 minutes)

We just previously stated that there are various key insights that result from integrating various data sources.

8. If I can ask you to tell me a bit about how the results/insights gleaned from processing/integrating various data sources impacts or is used in various marketing activities.

**Probing Questions:**

- Probing – Question 8
  
  When thinking of general marketing activities are there any that stand out to you as being highly reliant on data?

  Once the respondent has exhausted their answer, the interviewee can probe them to think a bit more by mentioning the following marketing activities.

  - Sales
  - Marketing Communications (Direct Marketing)
  - Pricing
  - Product design/development
  - Customer service
  - Customer Relationship Management
  - Branding
Objective
To determine the degree to which the organisation is using big data throughout the big data model.

PART F - BIG DATA MODEL: MARKETING ORIENTATION & DECISION MAKING
(Total :5 minutes)

We have moved from an era of being sales driven to an era of an organisation having a marketing orientation whereby the organisation focuses in creating, delivering and communicating superior customer satisfaction and value to the various target markets, putting the customer in the middle of everything.

9. In your opinion to what extent do you feel big data contributes to you being a marketing orientation driven company and why?

10. In your opinion, how do you think the company integrates big data into their decision-making?

Probing Questions:

- Probing – Question 9
  Traditionally the financial services industry was seen as one that was product orientated, they were transaction focused rather than customer focused, what is your outlook on this statement.

- Probing – Question 10
  There are different levels of decision-making, from a tactical decisions which are short term, to operational, and then ultimately strategic being long-term, in your opinion do you think the company incorporates big data in any one of these and why?

Objective:
To wrap things up just to provide a brief summary of what the researcher understood, thank the respondent for their time and communicate to them that they can review this recorded interview once transcribed.

PART G - CONCLUSION
(Total: 2 minutes)

This is the last part, thanks for your patience so far, if I can ask you 2 last questions just to round up this interview.

11. What do you see as the future of big data and more specifically, the future of big data within your organisation.

12. To summarise what you have told me…….is there anything else you would like to add and do
you have any questions for me.

Thank you for your time.

RECORDING ENDS
APPENDIX B: Interview transcriptions

Please refer to the CD at the back of the dissertation
APPENDIX C: Letter of confidentiality

17 June 2015

To: The financial services

From: Cindy Smart
Tel: 084 488 6677
Email: cindysmart13@gmail.com

ETHICAL CLEARANCE

To whom it may concern

This letter serves to request ethical clearance to conduct interviews for my masters degree in Marketing management through the University of Johannesburg with my thesis topic being: **The extent to which a financial services institution uses big data: a marketing perspective.** I have selected financial services institution A as the company to serve in my case study approach and have spoken with the respective employees who have agreed to being interviewed on the basis a letter outlining the study will be available to whomever may need an outline of my processes in developing the case study. Hence, the purpose of this letter is to provide financial services institution A with a brief overview of the research study that I will be completing and to get sign off on the study being conducted.

**Sample and methodology**

The researcher aims to conduct face-to-face interviews with the various professionals working with big data within the various marketing disciplines of the Financial services institution (such as social media, e-commerce, loyalty programs etc.) Due to the fact it is a case study approach, I will only be interviewing employees within the financial services institution A whom will remain anonymous throughout the study, as well as the department for whom they work for will remain anonymous.

**Confidentiality and anonymity**

All the results will be reported at an aggregated level and participants will be assured their anonymity, as mentioned above. The company’s competitive advantage will be secured through the researcher referring to the company as a utility in the financial services institution. The interviewing will merely be based on the usage of big data across all marketing disciplines using big data to present a successful case study of financial services institution A integrating big data within their organisation.

**Results**

The research results will be used as empirical research for the written dissertation on the subject. Financial services institution A is welcome to request results upon completion of this project.
APPENDIX C: Letter of confidentiality (continued)

Participation
The requirement would be a face-to-face interview between the months of June-July 2015, not taking longer than 45 minutes. I will be liaising with the employees well in advance to set up a time according to their availability and convenience.

Please accept my appreciation in advance for your contribution and participation as an integral factor of this research study.

Feel free to contact me directly with any queries.

Yours sincerely,
Cindy Smart

Financial services Institution A: Representative
APPENDIX D: Morse and Field – synthesising
Please refer to the CD at the back of the dissertation