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Corporate Entrepreneurship: The role of middle-level management on Corporate Entrepreneurship within the telecommunications industry in South

Andre Engelbrecht

A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in Entrepreneurship and New Venture Creation

Student number: 794859

Supervisor: Prof. B.Urban

Johannesburg, 2015

(March 2015)

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ABSTRACT

Guth and Ginsberg (1990) stressed that Corporate Entrepreneurship (CE) encompasses two major phenomena: new venture creation within existing organisations and the transformation of on-going organisations through strategic renewal. Zahra (1991, p. 262) observed that Corporate Entrepreneurship may be formal or informal activities aimed at creating new business in established companies through product and process innovations and market developments.

The research study was quantitative and data was collected through an online questionnaire, which used closed-ended questionnaires. The questionnaires entail assessing the degree of CE within the telecommunications industry in South Africa. The analysis involved 172 samples of responses to the online questionnaire.

The research indicated that that there is a correlation between the dependent variable (entrepreneurial orientation) and the independent variables (innovation, performance, risk taking, and pro-activeness).

The findings of the research contribute to the South African telecommunications industry in terms of innovation, regulation, external collaboration and entrepreneurial orientation literature and studies.

DECLARATION

I, Andre Engelbrecht, declare that this research report is my own work, except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in Entrepreneurship and New Venture Creation in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this, or any other, university.

Andre Engelbrecht

Signed at Wits Business School, JHB

On the …….. Day of …… 2015

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The research has added new insights to my understanding of Corporate Entrepreneurship within the telecommunications industry in South Africa. It has also added to my own personal growth.

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CHAPTER 1: INTRODUCTION

1.1 Purpose of the study

The purpose of this study is to evaluate the role of middle-level managers on Corporate Entrepreneurship within the telecommunications industry within South Africa. The South African telecommunications industry has seen exponential growth over the last 24 years, especially within the cell phone industry (benefitting from the technological enhancements worldwide during the mid-nineties and early 2000's), (Makhaya, G, Roberts, R, 2003). There has been a strong correlation between the technological developments and entrepreneurship especially within Sillicon Valley (e.g. Apple and Microsoft). These entrepreneurial developments had an impact on South Africa, especially within the telecommunications industry.

The research investigates the relationship between Corporate Entrepreneurship (Innovation, Self-efficacy, Performance, Risk taking, Pro-activeness) and Entrepreneurial Orientation.

The results of this study confirm that there is a relationship between the independent variables of Corporate Entrepreneurship and entrepreneurial orientation. Dress, Lumpkin and McGee, 1999, p. 85, stated that: "Virtually all organisations, new start-ups, major corporations, and alliances among global partners, are striving to exploit product-market opportunities through innovative and proactive behaviour".

1.2 Problem statement

1.2.1 Main Problem

The study will assess the role of middle level management on Corporate Entrepreneurship within the telecommunications industry in South Africa. Empirical research in this area has been explored in the past. Quinn (1985) was among the first to recognise the valuable contributions and important roles of middle level managers in the innovation process in an established company. The study will focus on recent research and exploring additional factors that have an impact on Corporate Entrepreneurship from a middle level management perspective.

1.2.2 Sub-problem 1

Middle-level managers are an important link between top-level management and operational-level management; they have to implement and communicate corporate entrepreneurial strategies between top-level management and operational-level management. This research will analyse the important role that middle-level managers play in the implementation of the corporate entrepreneurial strategy of the organisation.

1.2.3 Sub-problem 2

This study will establish the important role middle-level management play in communicating the corporate entrepreneurial strategy between top-level management and operational-level managers.

1.3 Significance of the study

Research that analysis role of middle-level management on Corporate Entrepreneurship within the telecommunications industry within South Africa have been limited. Previous studies have focused on middle-level management and Corporate Entrepreneurship, but have been limited when it comes to the telecommunications industry (Kuratko, Ireland, Covin and Hornsby 2005).

This study will assist the telecommunications companies within South Africa to use the results to enhance an entrepreneurial culture amongst middle-level managers. Middle-level managers play a strategic role within the company to communicate the entrepreneurial strategy of the firm between top-level and operational-level managers.

The telecommunications industry will be able to benchmark the level of entrepreneurial orientation amongst middle-level managers within telecommunications compared to middle-level managers within other industries. Middle-level managers within the telecommunications industry will be able to have a better understanding of their own entrepreneurial orientation and identify gaps that they need to fill to improve their entrepreneurial orientation within their firms.

This study will allow the South African Telecommunications industry to have a better understanding of the level of Corporate Entrepreneurship within the industry and also amongst middle-level managers.

1.4 Delimitations of the study

This study focuses on the role of middle-level management on Corporate Entrepreneurship within the Telecommunications industry in South Africa. The study will specifically focus on the cell phone industry within South Africa. The company sizes are medium to large.

The target population for the study will be middle-level managers within the telecommunications industry. They form an important part of the organisational corporate entrepreneurial strategy; middle level managers communicate corporate entrepreneurial strategies from top-level managers to operational-level managers.

The online questionnaire (from Google) will only target responses within the South African telecommunications industry. The study includes listed and non-listed companies.

The research methodology used for this study is:

- Quantitative Research method
- Structural Equation Model (Regression Analysis)
- Descriptive statistics

1.5 Definition of terms

Entrepreneurship – Entrepreneurship is seen as new combinations; including the doing of new things that have already being done in a new way. New combinations include: the introduction of new goods, new method of production, opening of new markets, new source of supply and new organisations (Schumpeter, 1934).

Corporate Entrepreneurship – Some researchers see Corporate Entrepreneurship as embodying entrepreneurial behaviour requiring organisational sanctions and resource commitments for the purpose of developing different types of value-creating innovations (Alterowitz, 1988; Jennings and Young, 1990). Guth and Ginsberg (1990) stressed that Corporate Entrepreneurship encompasses two major phenomena: new venture creation within existing organisations and the transformation of on-going organisations through strategic renewal. Zahra (1991, p. 262) observed that Corporate Entrepreneurship may be formal or informal activities aimed at creating new business in established companies through product and process innovations and market developments.

Entrepreneurial Orientation - According to Dress and Lumpkin (2005) entrepreneurial orientation (EO) refers to: the strategy-making practices that organisations use to identify and launch corporate ventures and; a frame of mind and perspective about entrepreneurship reflected in a firm‘s on-going processes and corporate culture. According to Urban and Barreira (2010) the concept of EO incorporates organisational-level processes, practices and decision-making styles of innovative organisations.

Entrepreneurial Employee Activity - Entrepreneurial employee activity refers to employees who, in the past three years, were actively involved in and had a leading role in at least one of these phases (i.e. 'idea development for a new activity' and/or 'preparation and implementation of a new activity') - Global Entrepreneurship Monitor: 2011 Extended Report. The GEM report operationalize entrepreneurial employee activity 'as employees developing new activities for their main employer, such as developing or launching new goods or services, or setting up a new business unit, a new establishment or subsidiary'.

1.6 Assumptions of the study

The respondents (middle-level managers) in the research will have enough knowledge of the research topic; they are at a level within the organisation where they have gained the necessary experience to provide applicable feedback to the research questionnaire (Appendix A). The study assumes that middle-level managers have an understanding of entrepreneurial orientation.

The study will only focus on the telecommunications industry within South Africa and will provide a better understanding of the corporate entrepreneurial strategy within this industry. The feedback form the respondents will be accurate and valid data because the study will focus on managerial employees who will, under normal circumstances, have a better understanding of the strategic vision of the organisation.

Chapter 2: Literature review

2.1 Introduction

The literature review will analyse previous research done within Corporate Entrepreneurship, focusing on middle-level managers within the telecommunications industry. The chapter on Corporate Entrepreneurship will focus on previous research within the telecommunications industry, and the role of middle-level management on Corporate Entrepreneurship within the industry. Firms either promote or do not promote a culture of Corporate Entrepreneurship. The research will identify those characteristics that firms display to encourage entrepreneurship within organisations.

Many authors have singled out Corporate Entrepreneurship as an organizational process that contributes to firm survival and performance (Covin and Slevin, 1989; Drucker, 1985; Lumpkin and Dress, 1996; Miller, 1983; Zahra, 1993). Among the management practices believed to facilitate entrepreneurial behaviour are a firm's strategic management practices (e.g. Covin and Slevin, 1991a; Miller, 1983; Murray, 1984; Zahra, 1991).

To date, little systematic attention has been given to empirically documenting and understanding the contribution middle-level managers make in the context of Corporate Entrepreneurship (Hornsby, Kuratko and Zahra 2002). The roles of middle-level managers in Corporate Entrepreneurship are not clear, hence the need to clarify their roles within this study. Despite the paucity of past empirical research in this area, some insights can be gained from reviewing recent writings in the field of

strategic management and international business, both of which have begun to recognise the valuable contributions middle-level managers can make to the process of strategic change and organisational renewal and to fostering entrepreneurial activities (Hornsby, Kuratko and Zahra 2002). The existing literature on free enterprise / entrepreneurship has implicitly stated that Corporate Entrepreneurship and company performance are positively related to each other (Moreno and Casillas 2008).

The need to understand Corporate Entrepreneurship has been gaining in importance (Stevenson and Jarillo, 1990). Corporate Entrepreneurship is held to promote entrepreneurial behaviours within an organisation (Echols and Neck, 1998). It uses the fundamentals of management, while adopting a behavioural style that challenges bureaucracy and encourages innovation (Barringer and Bluedorn, 1999). It is also responsible for stimulating innovation within the organisation through the examination of potential new opportunities, resource acquisition, implementation, exploitation and commercialisation of the new products or services (Guth and Ginsberg, 1990).

A South African Perspective:

Research on Corporate Entrepreneurship in emerging markets like South Africa has been limited. Despite some of the research alluded to by Dress, 2003, in studying internationalisation and Corporate Entrepreneurship, not much progress has been made. Within the South African landscape, like in other emerging markets, political connections are important. In a survey by Chinese firms, Peng and Luo (2000) found that managerial ties with other firms and government officials are important in

improving firm performance. Makhaya and Roberts, 2003, stated that the South African economy is generally classified as middle income, but the distribution of income is one of the most unequal in the world. In the mid-1990's, the South African telecommunications policy was hailed as drawing on international best practices while at the same time seeking to deal with the country's particular historical legacies (Makhaya and Roberts, 2003).

The study will seek to understand the role of Corporate Entrepreneurship within the telecommunications industry (in South Africa) with a special focus on middle-level management. Middle-level managers act as an important intermediary between top-level management and operational / front-line managers. Top-level managers set the strategic vision and mission of the organisation and it is the responsibility of middle-level managers to facilitate and communicate the said objectives to operational managers who implement these objectives. Middle-level managers are enablers of individual entrepreneurial actions such as those taken to create new ventures or engage in strategic renewal (Kuratko, Morris, and Covin, 2005). Middle-level managers endorse, refine, and shepherd entrepreneurial opportunities and identify, acquire, and deploy resources needed to pursue those opportunities (Kuratko et al., 2005). In some firms, middle-level managers have a mandate to initiate entrepreneurial activities within their respective divisions; motivating operational managers to be creative and innovative. Middle-level managers have much to do with how entrepreneurial initiatives take shape (Kuratko, Morris, and Covin, J, 2005).

2.2 Definition: Corporate Entrepreneurship

Corporate Entrepreneurship is a term used to describe entrepreneurial behaviour inside established mid-sized and large organisations (Kuratko, D. F., Morris, H. M and Covin, J.G., 2005). Salvato, 2009, emphasise Corporate Entrepreneurship as the capability that allows managers to systematically overcome internal constraints so they can reinvent the company through novel business initiatives. Zahra and Garvis (2000) define Corporate Entrepreneurship as the sum of a company's efforts aimed at innovation, pro-activeness and risk taking.

Lumpkin and Dress (1996) define Corporate Entrepreneurship as a process in which individuals in an existing organisation seek for opportunities by developing and venturing into new businesses. Covin and Slevin (1991) define entrepreneurial orientation as the presence of organisational behaviour reflecting risk-taking, pro-activeness, and innovativeness.

The impact of corporate entrepreneurial activities on successful company performance attracted research in the organisational factors that promote these activities (Zahra, 1991; Zahra and Covin, 1995); previous research based their studies on identifying the factors that impact companies to focus on Corporate Entrepreneurship, factors that create a corporate culture.

Ginsberg and Hay (1994) recognised the importance of middle-level managers in enhancing and cultivating such autonomous behaviour thereby fostering Corporate Entrepreneurship within organisations. Rewards can be an important motivator to

create an entrepreneurial culture within an organisation and middle-level managers play an important role in the initiation of a reward system within their organisations.

This research will further elaborate on the role of middle-level managers on Corporate Entrepreneurship within the telecommunications industry analysing how middle-level managers impact the innovativeness of these organisations. Middle-level managers form an important strategic medium between top-level managers and operational-level managers. Middle-level managers play a critical role in the implementation of corporate entrepreneurial strategies within any organisation.

2.2.1 Innovativeness

Innovativeness refers to a willingness to support creativity and experimentation in introducing new products/services, and novelty, technological leadership and R&D in developing new processes (Lumpkin, G.T., and Dress, G.G., 2001). Innovativeness refers to the willingness of middle-level managers to facilitate and promote entrepreneurial activity within the firm (Quinn, 1985; Hisrich and Peters, 1986; Sykes and Block, 1989 and Sathe, 1989). The support of middle-level managers for innovation amongst employees contributes towards an entrepreneurial culture and also ensures that Corporate Entrepreneurship is embedded in the firm's processes.

To be competitive in the global economy, firms need to continuously improve their products, services, technological developments and administration. Executives agree that innovation is the most important pathway for companies to accelerate their pace of change in the global environment (Kuratko, Hornsby and Covin, 2014).

Firms recognise the need to be competitive in the global environment and understand the importance and challenge of sustaining an innovative working environment within the changing global economy. A significant form of corporate innovation is envisioned to be a process that can facilitate firm's efforts to innovate constantly and cope effectively with the competitive realities companies encounter when competing in world markets (Kuratko, Hornsby and Covin, 2014). Leading strategic thinkers are moving beyond the traditional product and service innovations to pioneering innovation in processes, value chains, business models, and all functions of management (Govindarajan and Trimble, 2005). Middle-level managers play an important role in creating an environment where innovation is encouraged among employees. Corporate Entrepreneurship and innovation are concepts that have captivated the interest of executives in many corporate boardrooms (Morris, Kuratko, and Covin, 2011).

Organisations require middle-level managers that display strong leadership; leadership that inspires innovation and employees to take calculated risks. Firms that exhibit Corporate Entrepreneurship are typically viewed as dynamic, flexible entities prepared to take advantage of new business opportunities when they arise (Kuratko, Goldsby, and Hornsby, 2012).

Effective Corporate Entrepreneurship facilitates the firm's efforts to exploit its current competitive advantage, explore further opportunities and the competencies required to successfully pursue them (Covin and Miles, 1999). Some articles suggest that organisational learning allows the company to develop capabilities that enhance innovation and that innovation is what positively affects performance (Baker and

Sinkula, 1999, 2002). Schumpeter (1934) said that entrepreneurial activity involves the carrying out of new combinations - “creative destruction” of an existing equilibrium within a particular industry. Innovation within an organisation must be initiated by top-level management, however, effective communication and implementation of the innovations are carried out by middle-level managers. That is, middle-level managers need to communicate the vision of top-level managers to operational-level managers.

The above discussion leads to the following hypothesis:

H1: There is a strong correlation between entrepreneurial orientation and innovativeness amongst middle-level managers within organisations.

2.2.2 Performance

Performance is a multidimensional concept and the relationship between Entrepreneurial Orientation and performance may depend upon the indicators used to assess performance (Lumpkin and Dress, 1996). Businesses with high Entrepreneurial Orientation can target premium market segments, charge high prices and entre markets before competitors, which should provide them with larger profits and allow them to expand faster (Zahra and Covin, 1995).

The EO-performance literature is long-standing, and empirical studies have largely found that firms with a more entrepreneurial orientation focus perform better (Zahra, 1991; Zahra and Covin, 1995, Wiklund, 1999). Most recently, Rauch et al. (2004) based on a meta-analysis of 37 studies concluded that the EO-performance relationship is moderately large and that firms benefit from Entrepreneurial

Orientation. The conceptual arguments of previous research converge on the idea that firms benefit from highlighting newness, responsiveness, and a degree of boldness (Rauch, Wiklund, Lumpkin and Frese, 2001). With the current global competitive environment, firms need to be proactive and more innovative to create new opportunities to remain competitive. Efforts to anticipate demand and aggressively position new product / service offerings often result in strong performance (Ireland, Hitt and Sirmon, 2003).

Most of the broad empirical studies on the relation between innovation and performance provide evidence that this relation is positive (Bierly and Chakrabarti, 1996; Brown and Eisenhard, 1995 and Roberts, 1999). Firm size has a positive effect on performance and also on innovation because the biggest firms usually have more resources to invest in innovation (Damanpour, 1992; Kimberly and Evanisko, 1981). Environments that are turbulent in nature, a fast paced changing economic environment, put additional pressure on firms to bring new products and services to the marketplace. In a hostile environment, innovation is an obligation the environment imposes and that improves performance (Miller and Friesen, 1983).

The above discussion leads to the following hypothesis:

H2: Middle-level managers perceive that there is a strong relationship between entrepreneurial orientation and organisational performance.

2.2.3 Risk taking and Pro-activeness

The risk-taking dimension of strategic posture is a firm's propensity to take business-related chances with regard to strategic actions in the face of uncertainty (Richard,

Barnett, Dwyer, and Chadwick, 2004). Risk taking means a tendency to take bold actions such as venturing into unknown new markets, committing a large portion of resources to ventures with uncertain outcomes, and/or borrowing heavily (Lumpkin and Dress, 2001). Autonomy within the entrepreneurial organisation allows individuals to act freely and be able to explore new ideas (Lumpkin and Dress, 2009). Firms can leverage from this type of behaviour; it is a competitive advantage for a firm that leads to entry into new markets before others. Middle-level managers must allow employees to be willing to take risks that can benefit the firm in the future (the risk must be manageable and it must be calculated risks). According to Wang (2008), firms that are entrepreneurial in nature, are risk-tolerant and this characteristic often stimulates them to eliminate the kind of traditional authoritarian structures that inhibit collaborative learning.

Pro-activeness is a propensity to take the initiative to compete aggressively with other firms (Covin & Slevin, 1989). This is consistent with Miller and Friesen's (1978) view of pro-activeness as changing the environment by introducing new products and technologies, and with Venkatraman's (1989a) definition of pro-activeness as seeking new opportunities which may or may not be related to the present line of operations, introduction of new products and brands ahead of competition, strategically eliminating operations which are in the mature or declining stages of life cycle (Venkatraman 1989a: 949).

Both the risk-taking and pro-activeness dimensions of entrepreneurial orientation require a firm to make quick decisions and aggressively compete by implementing bold and risky strategies in the face of uncertainty. Pro-activeness is an opportunity-

seeking, forward-looking perspective characterised by the introduction of new products and services ahead of competitors and acting in anticipation of future demand (Lumpkin and Dress, 1996). This research will emphasise the important correlation that exist between entrepreneurial orientation and firms that incorporate risk taking and pro-activeness within their corporate strategy.

The above discussion leads to the following hypothesis:

H3: There is a strong correlation between middle-level managers who incorporates risk taking and pro-activeness within their organisations, and entrepreneurial orientation.

2.3 The need for Corporate Entrepreneurship:

The telecommunications industry has changed dramatically over the last two decades; with global companies like Apple bringing new technological advancement to the market rapidly; the South African economy needs to create employment for sustainable economic growth, but importantly needs to stay abreast of the technological developments that are happening globally. The dramatic changes in the global economy, which intensifies competition within the telecommunications industry, demands that developing economies like South Africa ensure that Corporate Entrepreneurship are imbedded within the telecommunications industry.

Middle-level managers play a significant role on Corporate Entrepreneurship within the telecommunications industry. Ghoshal and Bartlett (1994) see middle-level managers as enablers of individual entrepreneurial actions such as those taken to create new ventures or engage in strategic renewal. As facilitators of information

flows, middle-level managers help shape entrepreneurial actions (as determined by top-level managers) and their use in the form of competencies by first-level managers / operational-level managers and their direct reports (Floyd and Lane, 2000; Ginsberg and Hay, 1994 and Kanter, 1985). Hence, there is a strong correlation between middle-level managers and the performance of a firm; they have a direct impact on the company's performance.

Nonaka and Takeuchi (1995) emphasised the importance of middle-level managers to innovation (a commonly sought outcome of Corporate Entrepreneurship), suggesting that their central organisational position allows them to gather and absorb innovative ideas from inside and outside the firm. By interacting with operational and top-level managers, those operating in the middle influence and shape entrepreneurial actions as they parcel and integrate knowledge towards proactively pursue some form of newness (Kuratko, Ireland, Covin, and Hornsby, 2005). Hence, middle-level managers endorse, refine, and shepherd entrepreneurial opportunities as well as identify, acquire, and deploy resources needed to pursue those opportunities (Kuratko, Ireland, Covin, and Hornsby, 2005).

Fulop (1991) points out the distinction between top-level managers and middle-level managers is often that of strategic actions vs. implementation of those actions. We can conclude that middle-level managers implement the strategies developed by top-level managers.

Entrepreneurial behaviour continuous to be seen as an important path to competitive advantage and improved performance in firms of all types and sizes (Lumpkin and

Dress, 1996, and Russell, 1999). Zahra, Jennings, and Kuratko, 1999, believe that firms failing to effectively use entrepreneurial actions in the fast-paced and complex global economy reduce the probability of successful competition in their chosen markets. Entrepreneurial behaviour does not occur in a vacuum; rather, it takes place within the context of the organisation's full array of actions (Dress, Lumpkin, and Covin, 1997). Firms that successfully implement corporate entrepreneurship will have a competitive advantage over their competitors, which will lead to an improvement in firm performance.

In its broadest conception, entrepreneurial behaviour is a comprehensive term that captures all actions taken by a firm's members that relate to the discovery, evaluation, and exploitation of entrepreneurial opportunities (Shane and Venkataraman, 2000; Smith and DiGregorio, 2002). The entrepreneurial behaviour of middle-level managers is fundamentally defined by these individuals' behaviours that relate to the discovery, evaluation, and exploitation of entrepreneurial opportunities (Kuratko, Ireland, Covin, and Hornsby, 2005). It is the behavioural attitude of middle-level managers that will determine the impact they will have on the corporate entrepreneurial strategy of the firm; the implementation of the corporate entrepreneurial strategy is dependent upon all three managerial levels (top, middle and operational).

Middle-level managers endorse Corporate Entrepreneurship perspectives coming from top-level managers and sell their value-creating potential to the primary implementers, operational-level managers and their direct reports (Kuratko, Ireland, Covin, and Hornsby, 2005).

Entrepreneurial initiatives are inherently experiments that evolve from fundamental business concepts to more fully defined business models (Block and Macmillan, 1993). The process of how entrepreneurial initiatives take shape is one of the responsibilities of middle-level managers. The behaviour of middle-level managers involve moulding the entrepreneurial opportunity into one that makes sense for the organisation, given the organisation's strategy, resources, and political structure (Kuratko, Ireland, Covin, and Hornsby, 2005). Entrepreneurial initiatives will not necessarily have their impetus within the middle-level management domain, they will tend to operate and grow under the preview of middle-level managers (Burgelman and Sayles, 1986; Kunter, 1983).

Corporate Entrepreneurship within the telecommunications industry has not been extensively researched especially within the South African context. Thokozani Nkosi, 2011, research report focused on Corporate Entrepreneurship and organisational performance in the Information and Communications industry in South Africa.

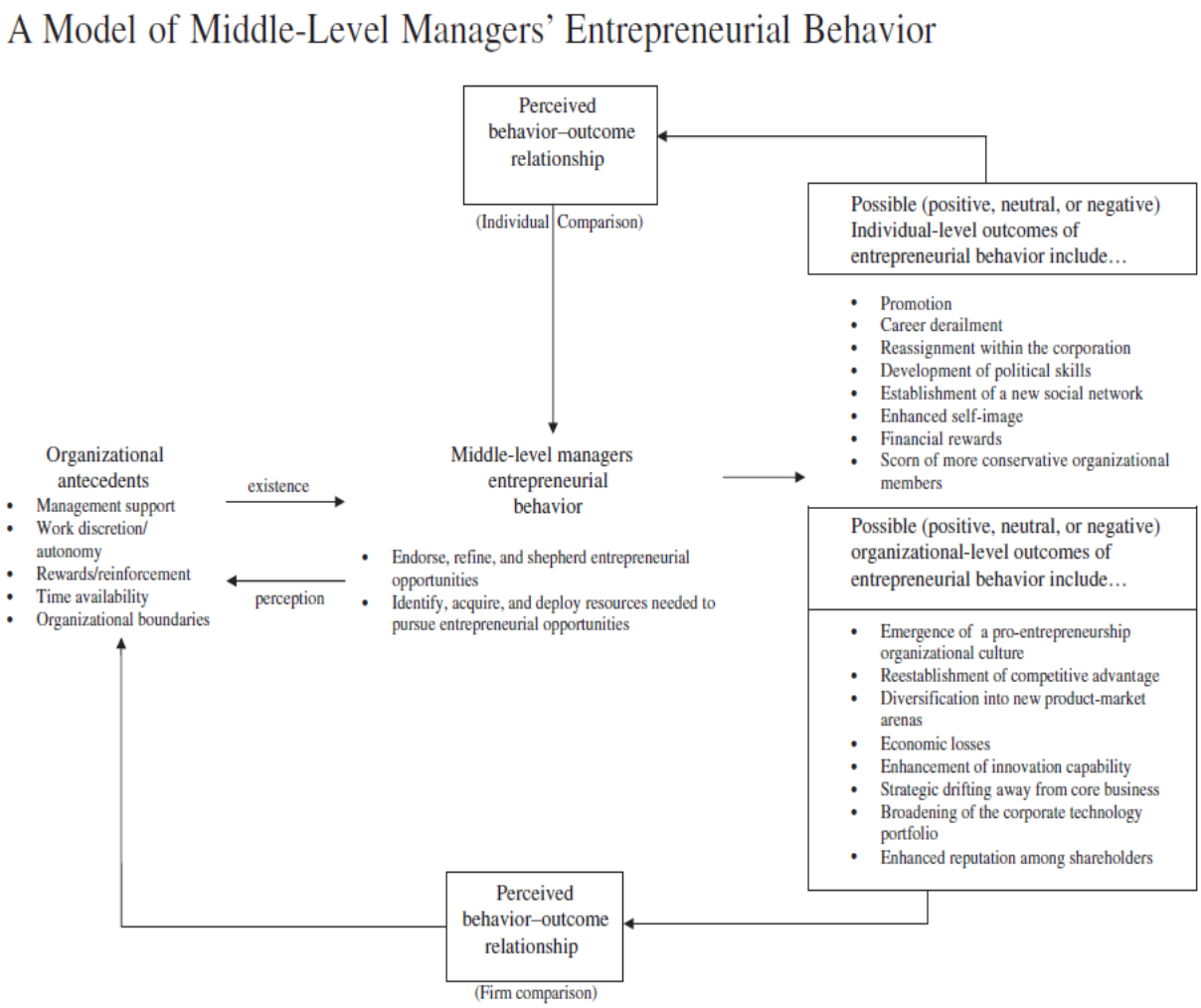
This research will differ from the study concluded in 2011 by focusing on the role of middle-level managers on Corporate Entrepreneurship within the Telecommunications industry within South Africa. Middle-level managers are strategic in the communication and implementation of the corporate entrepreneurial strategy of a firm. Kuratko, Ireland, Covin, and Hornsby (2005), developed a Model of Middle-Level Managers' Entrepreneurial Behaviour.

According to Russell and Russell (1992) there are eight dimensions of culture that relate to innovative intrapreneurial process:

1) Value for innovation as a practice and as a source of competitive advantage,
2) Norms encouraging creativity among organisational members,
3) Norms encouraging search for innovative opportunities from external sources,
4) Norms that facilitate resource support for innovative ventures,
5) Norms supporting information-sharing between individuals and groups regardless of organisational position,
6) Norms that promote tolerance for failure when creative ideas or projects are not successful,
7) Norms that encourage the open-minded consideration of new ideas and projects,
8) Norms that support the implementation of innovations regardless of the individual or group's involvement in the development of the venture.

The model below (Figure 1) endorses the important role middle-level managers' play with regards to Corporate Entrepreneurship within firms. Middle-level managers need to ensure that the corporate entrepreneurial strategy is effectively communicated between top-level and operational-level managers and implementation that strategy.

Figure 1: A Model of Middle-Level Managers – (Kuratko, Ireland, Covin, and Hornsby, 2005).



The communication responsibilities of middle-level managers include facilitating information flow in ways that support project development and implementation efforts (Kuratko, Ireland, Covin, and Hornsby, 2005). The role of operating-level managers is to absorb relevant information gained from outside the firm while responding to middle-level managers' communication of information that is based on top-level managers' decisions (Floyd and Lane, 2000). Different actions are associated with each managerial role (Miller and Camp, 1985).

Kuratko, Montagno, and Hornsby (1990), identified three factors to be the most important antecedents of middle-level managers' entrepreneurial behaviour: management support, organisational structure, and rewards. Hornsby et al. (2002) developed the Corporate Entrepreneurship Assessment Instrument (CEAI) to partially replicate and extend results previously reported by Kuratko et al. (1990) and Hornsby et al. (1999).

The results of the corporate antrepreneurship assessment Instrument indicated that there are five specific organisational antecedents of the entrepreneurial behaviour of middle-level managers. As depicted in Figure 1 these antecedents are: 1 management support, 2 work discretion/autonomy, 3 rewards/reinforcement, 4 time availability and 5 organisational boundaries. Hornsby et al. (2002) developed the Corporate Entrepreneurship Assessment Instrument (CEAI) to partially replicate and extend results previously reported by Kuratko et al. (1990) and Hornsby et al. (1999).

The telecommunications industry has changed dramatically over the past 20 years; innovation and creativity has been strategic in the change in competition within this industry. We have seen exponential growth within this industry within the South African context, i.e. telecommunications companies has performed well since 1994. The 1990's brought with it a significant change in the general perception of the value of entrepreneurial behaviour as a predictor of firm performance (Kuratko et al., 2005). Companies had to more aware of the positive impact of entrepreneurship on their performance.

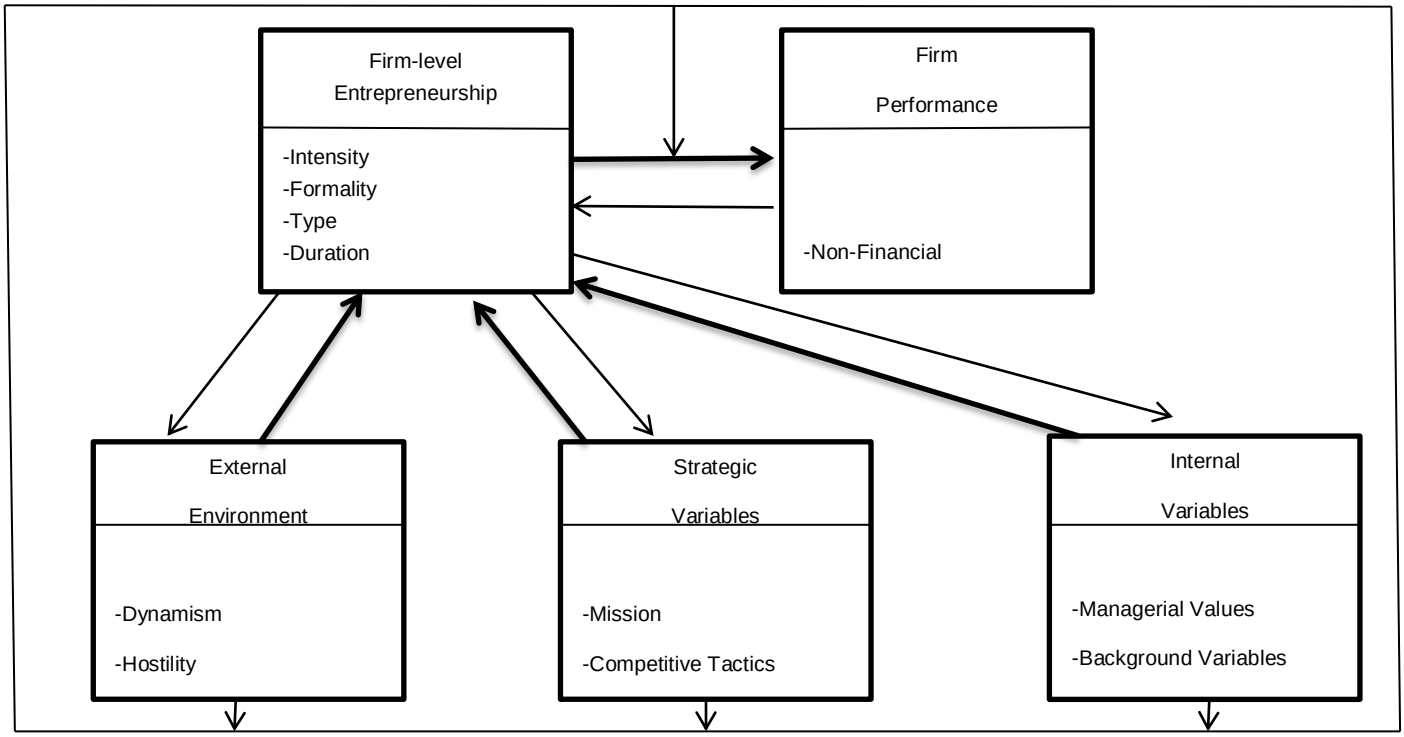
Kotter (1999) observed that general managers' behaviour essentially relates to agendas and networks; middle-level managers' entrepreneurial behaviour is essentially focused on entrepreneurial opportunities and resources. Kuratko, Ireland, Covin, and Hornsby (2005), stated that middle-level managers endorse, refine, and shepherd entrepreneurial opportunities and identify, acquire, and deploy resources needed to pursue those opportunities.

Middle-level managers evaluate entrepreneurial initiatives from operational-level managers and initiate their own entrepreneurial opportunities within the firm. Bartlett and Ghoshal (1997) suggest that in an autonomous context, endorsement behaviours are typically in support of initiatives originating below the middle management level and aimed at influencing the outlook and perceptions of those above the middle management level. According to Kuratko et al., (2005), in an induced sense, middle-level managers endorse Corporate Entrepreneurship perspectives coming from top-level executives and sell their value-creating potential to the primary implementers, operational-level managers and their direct reports. Entrepreneurial initiatives are inherently experiments that evolve from fundamental business concepts to more fully defined business models (Block and MacMillan, 1993).

Covin and Slevin (1991) developed a firm-level entrepreneurship model in 1991. Zahra (1993) develop a revised model of firm-level entrepreneurship (Figure 2). The revision highlights a more parsimonious classification of the external environment set than originally suggested (Zahra, 1993). Zahra (1993) model eliminates the

technological sophistication variable discussed by Covin and Slevin because that appears to be redundant with environmental dynamism.

Figure 2: A Revised Conceptual Framework of Firm-level Entrepreneurship (Zahra, 1993)



The revised model adds another important environmental attribute: munificence, which refers to the abundance of opportunities for innovation in the industry (Zahra, 1993). This attribute is important for entrepreneurship research because some environments may impose upper limits on what a firm can do with regard to innovation, pro-activeness and risk-taking behaviours (Zahra, 1993). The measurement of the environment has been the subject of discussion and debate for

more than two decades (Dress and Rasheed, 1991; Prescott, 1986). The revised model adopts a broader definition of a firm's entrepreneurial behaviour than originally proposed; it highlights the need to consider domestic and international entrepreneurial activities (Zahra, 1993).

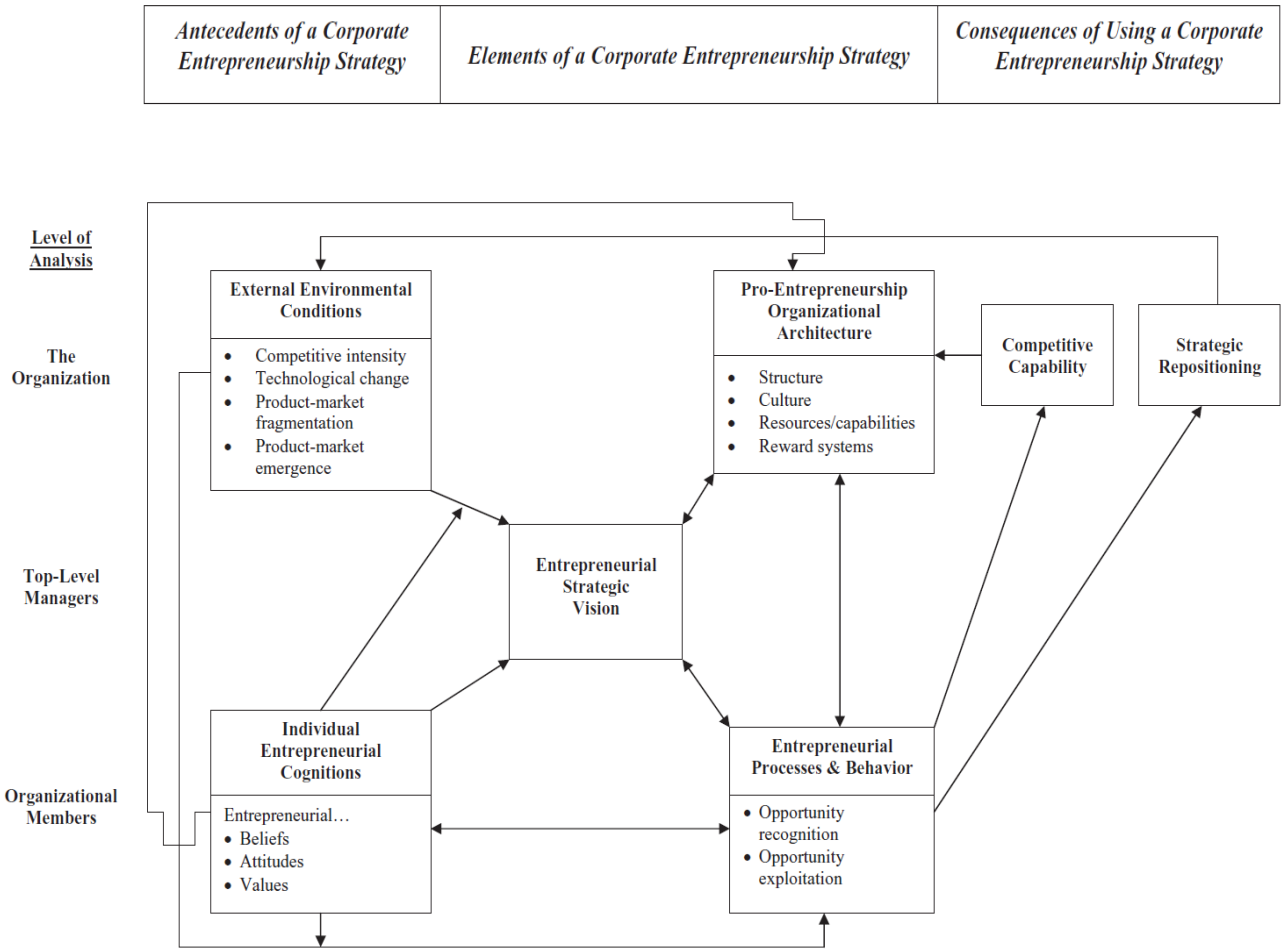
Zahra (1993) revised model identifies four subsets of variables: (1) managerial values and background (including age, past experience, and functional expertise); (2) organisational structure (including centralisation, formalisation, complexity, and organicity); (3) managerial process (including participation and fairness); and (4) organisational culture (including openness, and empowerment). Since the relationship among the four sets is empirical in nature, it is important for future researchers to examine their links to determine if a more parsimonious classification of the subsets can be found (Zahra, 1993). The revised model also considers both financial and non-financial outcomes of entrepreneurial activities; it proposes that some non-financial benefits from entrepreneurship can produce financial results (Zahra, 1993).

According to Zahra (1993), the revisions help to refocus the 44 propositions offered by Covin and Slevin (1991). Table 1, Zahra (1993), presents a proposed set of propositions that reduces redundancy in the original set offered by Covin and Slevin (1991). To enhance the clarity of the presentation, the original propositions are listed first and then the suggested revisions are presented (Zahra, 1993).

Figure 3 (Ireland, Covin, and Kuratko, 2009), suggested that a Corporate Entrepreneurship strategy is manifested through the presence of three elements: an

entrepreneurial strategic vision, a pro-entrepreneurship organisational architecture, and entrepreneurial processes and behaviour as exhibited across the organisational hierarchy. According to Ireland, Covin, and Kuratko (2009), their conceptualisation of Corporate Entrepreneurship as a strategy uses two of Mintzberg's (1987a,b) five definitions of strategy: (1) strategy as perspective, and (2) strategy as pattern.

Figure 3: An Integrative Model of Corporate Entrepreneurship Strategy (Ireland, Covin, and Kuratko, 2009)



The perspective as a Corporate Entrepreneurship strategy represents a shared ideology favouring the pursuit of competitive advantage principally through innovation and entrepreneurial behaviour on a sustained basis (Russell, 1999). As pattern, Corporate Entrepreneurship strategy denotes a continuous, consistent reliance on entrepreneurial behaviour, whether intended or not (Mintzberg, 1987a, p. 12). The pro-entrepreneurship organisational architecture in figure 3 is a recursive path through which entrepreneurial vision and behaviours interact to create a Corporate Entrepreneurship strategy (Ireland, Covin, and Kuratko, 2009).

Consistent with what Meyer and Heppard (2000) refer to as an entrepreneurial dominant logic, an entrepreneurial strategic vision represents a commitment to innovation and entrepreneurial processes and behaviour that is expressed as the organisation's philosophical modus operandi (Ireland, Covin, and Kuratko, 2009). An effective entrepreneurial strategic vision is more a reflection of an entrepreneurial mind-set, or a way of thinking about business that captures the benefits of uncertainty (McGrath and MacMillan, 2000).

An entrepreneurial strategic vision is the mechanism by which top-level managers paint the picture of the type of organisation they hope to lead in the future - an organisation that is opportunity-focused, innovative, and self-renewing (Ireland, Covin, and Kuratko, 2009). The presence of pro-entrepreneurship cognitions suggests that individuals have broadly favourable thoughts about entrepreneurship as a phenomenon, and that these thoughts are non-context-specific, that is, they exist as personal cognitions rather than as products of the specific situations in which individuals may find themselves (Ireland, Covin, and Kuratko, 2009). When

pro-entrepreneurship cognitions are broadly descriptive of members, they are reflected in the organisation's culture (Ireland et al., 2009). While entrepreneurial behaviour can be manifested through many specific actions, recognising and exploiting opportunity, and defining processes are the essence of entrepreneurial behaviour (Shane and Venkataraman, 2000). The expectation that pro-entrepreneurship cognitions will lead to entrepreneurial opportunity recognition is consistent with arguments by Mitchell et al. (2002), Shane and Venkataraman, and Eckhardt and Shane that cognitions can predispose individuals toward recognising entrepreneurial opportunity (Ireland et al., 2009). Zahra (1991) argued that greater amounts of environmental hostility, dynamism, and heterogeneity call for Corporate Entrepreneurship strategy. Lumpkin and Dress (1996) suggested that firms facing rapidly changing, fast-paced competitive environments might be best served by implementing a Corporate Entrepreneurship strategy.

Organisational members' pro-entrepreneurship cognitions facilitate recognising entrepreneurial opportunity, i.e. these individuals are well attuned to the presence of such opportunities (Kuratko et al., 1993; McGrath and MacMillan, 2000). Competitive intensity, technological change, and product-market domain evolution will be conducive to the emergence of entrepreneurial opportunities (Ireland et al., 2009). The vision for Corporate Entrepreneurship is the responsibility of top-level managers, they need to promote entrepreneurial behaviour when a Corporate Entrepreneurship strategy is used. However, the responsibility for entrepreneurship does not solely rest with top-level managers; it is a shared responsibility according to Bartlett and Ghoshal, (1997) and Covin and Slevin, (2002). A pro-entrepreneurship organisational architecture is not a unique organisational form but an internal context

that exhibits certain attributes that individually and collectively encourage entrepreneurial behaviour (Ireland et al., 2009).

2.3.1 Implications of the Model of Middle-Level Managers' Entrepreneurial Behaviour

Interrelated outcomes accrue to organisations and managers as a result of middle-level managers' entrepreneurial behaviour (Kuratko et al., 2005). What is important for middle-level managers' is the impact their entrepreneurial behaviour has on the firm and whether it has a positive impact on their skill levels. It is imperative that there is a positive relationship between the entrepreneurial behaviours of middle-level managers and firm performance. The firm must be able to expand its markets share through entrepreneurial initiatives. Firms use reward systems to motivate employees to be entrepreneurial by providing incentives for innovative ideas.

One implication of the model is that managers will choose to engage in entrepreneurial behaviour if they perceive that the outcomes received from their actions will meet or exceed their expectations (Kuratko et al., 2005). Porter and Lawler (1968), stated that the relationship between individual effort and performance is moderated by individual skills, abilities, and role perceptions and the relationship between performance and outcomes affects whether or not the individual is likely to repeat the behaviour. According to Kuratko et al., (2005), if entrepreneurial managers are equity sensitive (which Hornsby and Kuratko, 2003 find to be the case for middle-level managers), they will compare the outcomes received for their entrepreneurial actions to the outcomes by those who choose not to act

entrepreneurially. This is in accordance with the work of Porter and Lawler (1968) who state that to sustain entrepreneurial behaviour, managers acting entrepreneurially must believe that their efforts will affect performance and that performance will result in desired outcomes (Gatewood, Shaver, Powers, and Gartner, 2002).

Changes in the external and internal environments may lead to pressure for change by providing feedback that a firm is misaligned with its economic environment (Kuratko et al., 2005). This misalignment in turn decreases the effectiveness of continuing with the strategy and increases the efficiency of engaging in multifaceted and radical change (Friesen and Miller, 1986). Success of entrepreneurial actions can be based on either financial outcomes such as increased sales, productivity, market share, reduced waste and labour efficiencies or behavioural criteria such as number of ideas suggested and implemented, amount of time spent working on new ideas, and amount of time spent outside of normal channels to pursue the ideas (Hornsby et al., 1999).

Porter and Lawler (1968), stated that the perceptions of the outcomes made by the organisation's top-level executives play a key role in Corporate Entrepreneurship, top-level managers must believe that entrepreneurial actions will lead to specifically desired organisational-level outcomes such as emergence of a pro-entrepreneurship organisational culture, reestablishment of competitive and enhancement of the firm's innovation capability (Kuratko et al., 2005). Entrepreneurial initiatives should be beneficial to the individual manager, middle-level manager and the organisation, i.e. both parties must benefit from entrepreneurial actions. Appropriate individual

rewards should foster and sustain entrepreneurial behaviour while achieving desired organisational outcomes and in turn this reinforces the firm's decision to support Corporate Entrepreneurship (Kuratko et al., 2005). Hornsby and Kuratko (2003) investigated the relationship between the previously identified antecedents and self-reported outcomes from managers including the number of new ideas suggested, the number of new ideas implemented, the number of times recognised for new ideas, method of recognition, time spent thinking about new ideas, and job satisfaction.

Bower (1970) was among the first scholars to draw attention to the importance of middle-level managers as agents of change in contemporary firms. Several other authors (Drucker, 1985; Kanter, 1983; Peters and Walterman, 1982 and Pinchott, 1985) have discussed different aspects of middle-level managers' contributions to entrepreneurship. Quinn (1985) was among the first to recognise the valuable contributions and important roles of middle-level managers in the innovation process in an established company. Quinn (1985) also highlighted the crucial importance of the roles middle-level managers play in fostering communication about the company's mission, goals, and priorities. Middle-level managers also communicate their ideas for innovation to top-level managers, thereby creating an opportunity where these ideas are evaluated and considered within the context of the firm's overall strategic priorities (Burgelman, 1983a, and b). Kanter (1985, 1988) and Quinn (1985) also note the importance of middle-level managers in promoting autonomous informal corporate entrepreneurial activities. Middle-level managers achieve this by providing rewards that encourage employees to experiment with and explore the feasibility of innovative ideas. Managers also use different approaches to make the

organisational structure less resistant to change and, as a result, allowing corporate entrepreneurial activities to flourish (Hornsby, Kuratko, and Zahra, 2002).

Floyd and Woolridge (1992) argue that middle-level managers frequently play pivotal roles in championing strategic alternatives and making them accessible to senior executives. Middle-level managers synthesise and integrate information, thereby crystallising the strategic issues facing the company and setting the stage for strategic change; facilitating adaptability by altering the formal structure; and implementing the formal strategy and providing feedback (Hornsby, Kuratko, and Zahra, 2002). When the results of Floyd and Woolridge (1992) are connected to the early findings of Burgelman and Sayles (1986), it becomes clearer that middle-level managers play a key role in shaping their companies' strategic agenda by influencing the types and intensity of corporate entrepreneurial activities (Hornsby, Kuratko, and Zahra, 2002).

Nonaka and Takeuchi (1995) also highlight the role of middle-level managers. Nonaka and Takeuchi (1995), suggests that most innovations emanate from middle-level managers and the promising ones are then sent to upper management for further analysis and evaluation. In this model of innovation, middle-level managers actively and diligently gather innovative ideas from within and outside the firm (Hornsby, Kuratko, and Zahra, 2002). According to the model developed by Nonaka and Takeuchi, middle-level managers, being in the best position to identify innovation opportunities and risk taking initiatives, transfer their knowledge and expertise to other employees within the company. Another noteworthy feature the Nonaka and Takeuchi model is the fact that it recognises that middle-level managers

frequently work on their ideas, often closely with employees, hoping to refine them and determine their potential (Hornsby, Kuratko, and Zahra, 2002).

Through their effective communication and use of rewards, middle-level managers create the social capital and trust needed to foster the corporate entrepreneurial process (Hornsby, Kuratko, and Zahra, 2002). Bartlett and Ghoshal (1996) observe that middle-level managers create an environment in their respective divisions or subsidiaries where innovations and entrepreneurial activities flourish. According to Bartlett and Ghoshal (1996), middle-level managers are believed to link different skills, resources, and knowledge in pursuit of those strategic goals defined by senior managers.

2.3.2 Factors that influence Corporate Entrepreneurship

Hornsby, Kuratko, and Zahra (2002), stated that there are five dimensions that have an impact on Corporate Entrepreneurship. The first dimension is the appropriate use of rewards (Scanlan, 1981; Souder, 1981; Kanter, 1985; Barringer and Milkovich, 1998). Theorists stress that an effective reward system that spurs entrepreneurial activity must consider goals, feedback, emphasis on individual responsibility, and results-based incentives (Hornsby, Kuratko, and Zahra, 2002). The use of appropriate rewards can also enhance middle-level managers' willingness to assume the risks associated with entrepreneurial activity (Hornsby, Kuratko, and Zahra, 2002).

The second dimension indicates the willingness of managers to facilitate and promote entrepreneurial activity in the firm (Quinn, 1985; Hisrich and Peters, 1986; Sykes and Block, 1989 and Damanpour, 1991). Middle-level managers are supportive of innovative ideas and share their expertise with operational-level managers (and other employees within the organisation), thus, creating a culture of entrepreneurship within the firm.

Kuratko et al, (2005), third dimension is based on resources and their availability for entrepreneurial activity. Employees must perceive the availability of resources for innovative activities (Kanter, 1985; Sathe, 1985; Sykes, 1986; Hisrich and Peters, 1986; Slevin and Covin, 1997). The availability of slack resources usually encourages experimentation and risk-taking behaviours (Burgelman and Sayles, 1986).

The fourth dimension is the existence of a supportive organisational structure (Souder, 1981; Sathe, 1985; Hisrich and Peters, 1986; Sykes, 1986; Sykes and Block, 1989; Covin and Slevin, 1991). The structure also provides the administrative mechanisms, by which ideas are evaluated, chosen, and implemented (Burgelman and Saykes, 1986). The organisational structure needs to embrace entrepreneurship and create an environment where employees can be innovative and creative.

The fifth dimension is risk taking which indicates the middle-level managers' willingness to take risks and show a tolerance for failure when it occurs (Sathe, 1985, 1989; Sykes, 1986; Sykes and Block, 1989; Quinn, 1985; Kanter, 1985; Stopford and Baden-Fuller, 1994). The middle-level manager must impart risk taking

behaviour with operational-level managers and other employees within the organisation, and he/she must accept failure from employees who engage in risk taking behaviour.

Kuratko et al. (1990) presented an exploratory study that used these five conceptually distinct internal factors that support Corporate Entrepreneurship. Kuratko et al. (1990) empirical analysis reduced these factors to three: managerial support, organisational structure, and reward and resource availability (Hornsby, Kuratko, and Zahra, 2002). The results of the study conducted by Kuratko et al. (1990) showed that a company's pursuit of entrepreneurship is influenced by tangible (communication, scanning, integration, differentiation, and control) and intangible (dominant organisational values) internal factors.

A firm's strategy influences the internal factors that affect Corporate Entrepreneurship (Burgelman, 1983 a,b). Middle-level managers perceptions of these internal factors determine their relative emphasis on the various activities they undertake to encourage or facilitate Corporate Entrepreneurship (Kuratko et al., 1990, 1993). Firms that exhibit Corporate Entrepreneurship are typically viewed as dynamic, flexible entities prepared to take advantage of new business opportunities when they arise (Kuratko, Goldsby, and Hornsby, 2012). Deviation from prior routines, strategies, business models, and operating environments are typically modes of operation in innovation-minded companies (Kuratko, Hornsby, and Covin, 2014), Kuratko et al., 2014, also states that Corporate Entrepreneurship flourishes in established firms when individuals are free to pursue actions and initiatives.

2.3.3 Management support for Corporate Entrepreneurship

The support of management for Corporate Entrepreneurship is important for the successful implementation of any corporate entrepreneurial strategy. Management support refers to the willingness of managers to facilitate and promote entrepreneurial activity in the organisation (Quinn, 1985; Hisrich and Peters, 1986; Sykes and Block, 1989; Stevenson and Jarillo, 1990; Damanpour, 1991; Kuratko, Hornsby, and Montagno, 1993; Pearce, Kramer and Robbins, 1997, Hornsby et al. 1999). According to Barringer and Bluedorn (1999) and Zahra et al. (1999) the ability of the firm to increase its entrepreneurial behaviour is largely determined by the compatibility of its management practices with its entrepreneurial intentions. Leadership plays a critical role in creating an entrepreneurial culture within the organisation. According to Kemelgor (2002) strategic leadership implies the facilitation of managers who commit to both incremental and radical innovations as strategically important to the competitiveness of the organisation and tactically important to its operations and processes.

2.3.4 Dominant logic of Corporate Entrepreneurship

Bettis and Prahalad (1995), refers to dominant logic as the way in which managers conceptualise the business and make critical resource allocation decisions. Organisations do have a dominant way of thinking that identifies with the way the firm operates; there is one dominant logic by which the firm operates. Dominant logic formally or informally, consciously or unconsciously provides filters in the interpretation of information from the environment, attenuates complexity and guides

the strategies, systems and behaviour of the organisation (Bettis and Prahalad, 1995). According to Morris and Kuratko (2002) for any firm to achieve an entrepreneurial sustainable competitive advantage it must examine its dominant logic. The crucial risk in dominant logic is the firm's vulnerability to obsolescence. Morris and Kuratko (2002) also assert that the dominant logic must be periodically unlearned and the openers to these unlearning and de-learning processes should be an integral part of the organisation's culture.

Morris and Kuratko (2002) argue that a powerful tool for creating what they call a dynamic dominant logic is to make entrepreneurship the basis upon which the organisation is conceptualised and resources allocated. Dominant logic allows firms to be more attentive to opportunity identification and allow them to be more innovative and creative with the discovery of new product and services within the market. Morris and Kuratko (2002) embed the dominant logic within the cultural paradigm of the organisation and argue that a dynamic logic can revitalise an entrepreneurial culture.

Within Corporate Entrepreneurship there should be some overlap in managerial beliefs about the substance of strategic priorities and the need for strategic change, i.e. what is described as consensus on the dominant logic (Dress, Ireland, Zahra, Floyd, and Janney, 2003). It is essential that there should be an overlap as alluded to above, if not, middle-level managers will become frustrated by top-level managers who consistently reject their proposals. In addition to the substance of entrepreneurial initiatives, consensus on the dominant logic includes shared understanding on the need for change, i.e. which types of exchange (regeneration,

rejuvenation, renewal, or redefinition) are needed (Dress, Ireland, Zahra, Floyd, and Janney and Lane, 2003). Consensus on the dominant logic increases the likelihood that managers will share a common set of expectations for role performance and that they will seek and receive the information necessary to perform in that role (Dress, et al., 2003). Consensus thus reduces uncertainty about different managerial roles.

2.4 The Growth of Telecommunications Industry in South Africa

Figure 4: Growth of Telecommunications Industry in South Arica

Table: Market Overview

	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14
Subscriptions ('000)									
Total mobile subscribers	66,280	67,244	67,049	67,903	69,897	72,538	75,509	78,535	80,543
Q-o-Q growth (%)	1.6	1.5	-0.3	1.3	2.9	3.8	4.1	4	2.6
Y-o-Y growth (%)	17.1	11.6	7.7	4.1	5.5	7.9	12.6	15.7	15.2
Prepaid*	45,183	45,635	44,718	44,730	45,691	46,818	46,409	47,534	49,030
Postpaid*	9,049	9,260	9,422	9,553	9,683	9,846	9,986	10,251	10,284
No. of net additions	1,060	964	-195	854	1,994	2,641	2,971	3,026	2,008
Market penetration (%)	130.8	132.7	131.0	132.7	136.6	141.8	146.1	152.0	155.8

(South Africa Telecommunications Report Q1 2015, Business Monitor International)

The South African telecommunication industry continues to grow, especially with the range of services that are available and the use of such services by an increasing number of customers. The total mobile subscribers within South Africa grew from 66

million in 2012 to 80 million in 2014; this growth in the telecommunications industry forces firms to be more innovative when developing products and services. South Africa moved up one place into 3rd position according to the Business Monitor Index Risk/Reward Ratings for Sub-Saharan Africa, behind Gabon and Nigeria, following a 1 point increase in its aggregate score, according to the South Africa Telecommunications Report Quarter 1 2015.

The Telecommunications Report 2015, Quarter 1, also states that South Africa remains one of the region's most developed markets and operators boast a healthier subscriber mix than much of the rest of the region, keeping its scores above the regional average. The South African mobile market is more mature and this means that growth prospects are slower than many of its neighbours. The report expects operators to diversify their revenue streams in order to sustain revenue growth. Diversifying revenue streams provides an ideal opportunity for entrepreneurship within the telecommunications industry, finding creative ways to increase revenue growth. Corporate Entrepreneurship should be a key motivator for the industry to compete locally and internationally. New innovations, like the mobile financial services, are expanding within South Africa and this allows middle-level managers to play an important role in promoting Corporate Entrepreneurship within the telecommunications industry. They need to motivate and create an environment where entrepreneurship forms part of the organisational culture. Innovation should be part of the organisational culture and middle-level managers must ensure that operational-level managers also drive this behaviour.

Figure 5 below show the industry forecast for the telecommunications industry within South Africa, derived from the South Africa Telecommunications Report Q1 2015, Business Monitor International.

The index states that the expectation is that the cellular mobile subscribers will grow from 80 million subscribers in 2014 to 85 million subscribers in 2018. There was a 10.7% increase in the amount of subscribers between 2013 and 2014; a reduction in the MTR (Mobile Termination Rate), the fee that mobile operators levy each other when they use each other's network, contributed to the increase in subscriber base. The reduction in the mobile termination rate also led to an increase in completion within the telecommunication's industry.

Figure 5

Industry Forecast

Mobile

Table: Telecoms Sector - Mobile - Historical Data & Forecasts (South Africa 2011-2018)

	2011	2012	2013	2014f	2015f	2016f	2017f	2018f
Cellular Mobile Phone Subscribers, '000	60,276.0	68,351.0	72,538.0	80,879.9	82,578.3	84,081.3	84,922.1	85,431.6
Mobile Phone Subscribers/100 Inhabitants	120.2	134.9	141.8	156.5	158.2	159.5	159.5	158.9
3G & 4G phone subscribers, '000	13,500.0	20,000.0	24,350.0	28,173.0	31,102.9	33,653.4	35,840.8	37,346.2
3G & 4G market, % of mobile market	22.4	29.3	33.6	34.8	37.7	40.0	42.2	43.7
Monthly Blended ARPU, ZAR	115.6	107.9	101.1	92.7	92.5	92.1	91.7	91.2

(South Africa Telecommunications Report Q1 2015, Business Monitor International)

According to the Telecommunications Report Q1 2015, competition has the potential to further depress mobile tariffs and drive network expansion to underserved areas. This will result in an increase in new subscriber acquisition, and the discounting of inactive SIM cards could result in a severe market correction. The Business Monitor International (The Telecommunications Report Q1 2015) does not expect the market to degenerate into a price war, especially as the market is developed to a level that allows mobile operators to compete on other fronts apart from prices. The major competitive battles for market share include network quality and coverage, data services and advanced mobile content, and telecoms crossovers. This scenario provides an ideal opportunity for middle-level managers within the telecommunications industry to ensure that the entrepreneurial strategy of their firms is implemented successfully.

The competitive landscape within the mobile industry is dominated by four major firms: Vodacom, MTN, Telkom and Cell C with Vodacom and MTN being the two dominant firms within the local market. Products and services offered are similar within the industry; even tariffs reductions are no longer providing a competitive advantage for firms. Organisations need to be more innovative and creative to have a competitive edge over rivals within the industry. Entrepreneurship should be part of the firm's core focus areas in order to enhance employee performance and overall company financial performance.

The declining mobile termination rates will continue to affect the mobile operators' revenue and new subscribers are coming from the lower end of the market. The post-paid offering to the lower segment of the market still have opportunities for

growth within South Africa. Middle-level managers will have an important role to play to ensure that their firms get a share of this market through an effective corporate entrepreneurial strategy. Top-level executives must create a strategic vision that includes Corporate Entrepreneurship and provide the platform for the rest of the organisation to implement the Corporate Entrepreneurship strategy.

The Telecommunications Report Q1 2015 confirms that mobile operators must continue to improve their subscriber mix and increase the number of post-paid customers on their networks relative to prepaid users, and includes the success with which mobile operators encourage the uptake of higher value data services.

The Business Monitor International of the Q1 Report of 2015 stated that there were almost 6.9 million broadband connections in South Africa at the end of 2013. The broadband market faces rapid changes with the introduction of significantly lower cost mobile broadband services, doing much to increase broadband subscriber numbers. The lowering of prices reflects the increasing availability of bandwidth and cheaper services for end users also reflect the growth of competition in the mobile broadband sector. Entrepreneurship will play a strategic role ensuring that firms within the telecommunications industry remain competitive.

Figure 6

Wireline

Table: Telecoms Sector - Wireline - Historical Data & Forecasts (South Africa 2011-2018)								
	2011	2012	2013	2014f	2015f	2016f	2017f	2018f
Main telephone lines in service, '000	4,164.0	3,997.0	3,917.0	3,845.3	3,783.3	3,729.9	3,688.9	3,659.7
Main Telephone Lines/100 Inhabitants	8.3	7.9	7.7	7.4	7.2	7.1	6.9	6.8
Internet users, '000	14,961.6	21,497.9	24,475.0	26,866.2	28,679.5	29,546.0	30,317.2	30,836.2
Internet users/100 inhabitants	29.8	42.4	47.8	52.0	54.9	56.0	56.9	57.3
Broadband internet subscribers, '000	4,156.0	6,005.0	6,875.0	7,589.3	8,147.6	8,441.7	8,711.8	8,912.2
Broadband internet subscribers/ 100 Inhabitants	8.3	11.9	13.4	14.7	15.6	16.0	16.4	16.6

(South Africa Telecommunications Report Q1 2015, Business Monitor International)

The Business Monitor International Report on the South African Telecommunications industry stated that there has been an expansion of the fibre-optic network deployments for residential and business connections with service providers such as Telkom SA, Vodacom and MTN. The report also informs that this development is changing the landscape of South Africa's wireless sector with intense competition between the mobile operators driving investments and the roll out of new services that have the potential to support long-term growth within the sector. Figure 4 shows a downward trend in fixed-line connections from 4 million subscribers in 2011 to 3.8 million in 2014. The report also expects the downward trend in fixed-line connections to continue to 3.6 million in 2018. This is due to limited competition in the market and a movement from fixed-line to mobile substitution.

In contrast, internet users increased from 14.9 million in 2011 to 26.8 million users in 2014. A 55% increase is an indication of the rapid expansion of internet usage. The

report also predicted that internet subscribers will grow to 30.8 million in 2018. Broadband internet subscribers grew from 4.1 million in 2011 to 7.5 million in 2014 and the forecast is that the subscriber base will grow to 8.9 million in 2018. Internet growth should be a strategic focus for firms within the telecommunications industry; organisations should focus on increasing their market share and being innovative within this segment of the market.

According to the Telecommunications Report Q1 2015, the Telecoms Risk/Reward Index within Sub-Saharan Africa declined from 40.5 in Q4 2014 to 40.1 in Q1 2015. The report confirms that the average Industry Rewards score dropped 0.3 points to 32.7, and Country Rewards was down 0.9 points to 43.2 and Country Risks score also fell 0.3 points to 47.6. Although Sub-Saharan Africa has long term growth prospects, it has one of the lowest regional Telecoms scores globally; the Telecommunications Report Q1 2015 attributed this to the developmental state of the economies of these countries and many have high political risk profiles and relatively immature telecoms markets.

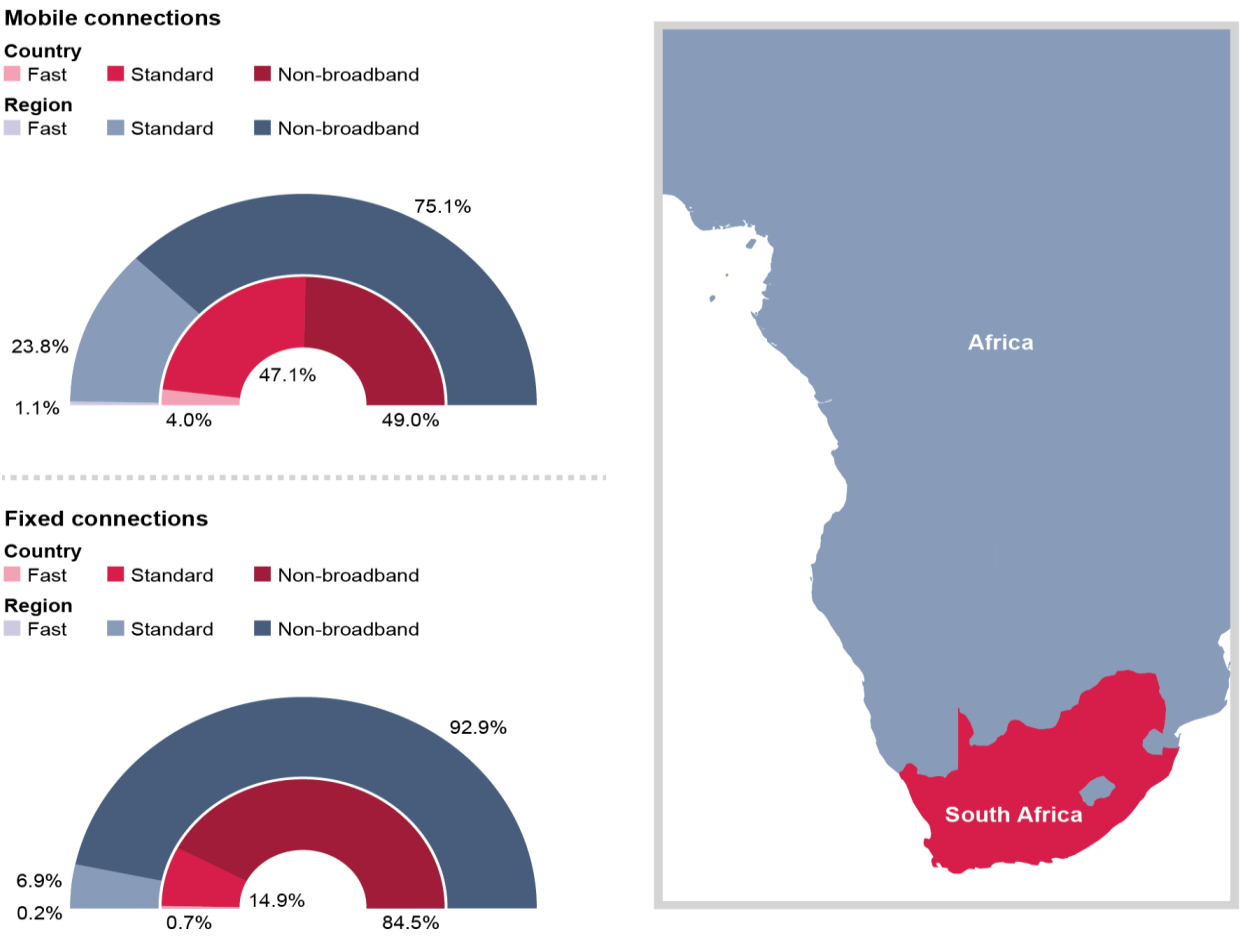
This provides an ideal opportunity for Corporate Entrepreneurship within the telecommunications industry. Middle-level managers will have a critical role to play to ensure that firms are more innovative when it comes to growth within this sector.

2.5 South Africa telecommunication update – 2015

The data market is heating up in both the mass-market and high-end segments because of increased data competition. Recent fibre deployment is expected to speed up broadband take-up and have an impact on content deployment such as

Voice over Data. Mobile revenue is expected to grow marginally (9%) over the next five years, while fixed-line revenue will decline by 8% (Morgue, 2014). In both cases, the trend is fuelled by declining voice usage and data will become the main revenue generator (60% of mobile revenues by 2019), (Morgue, 2014).

Figure 7: Broadband take-up speed

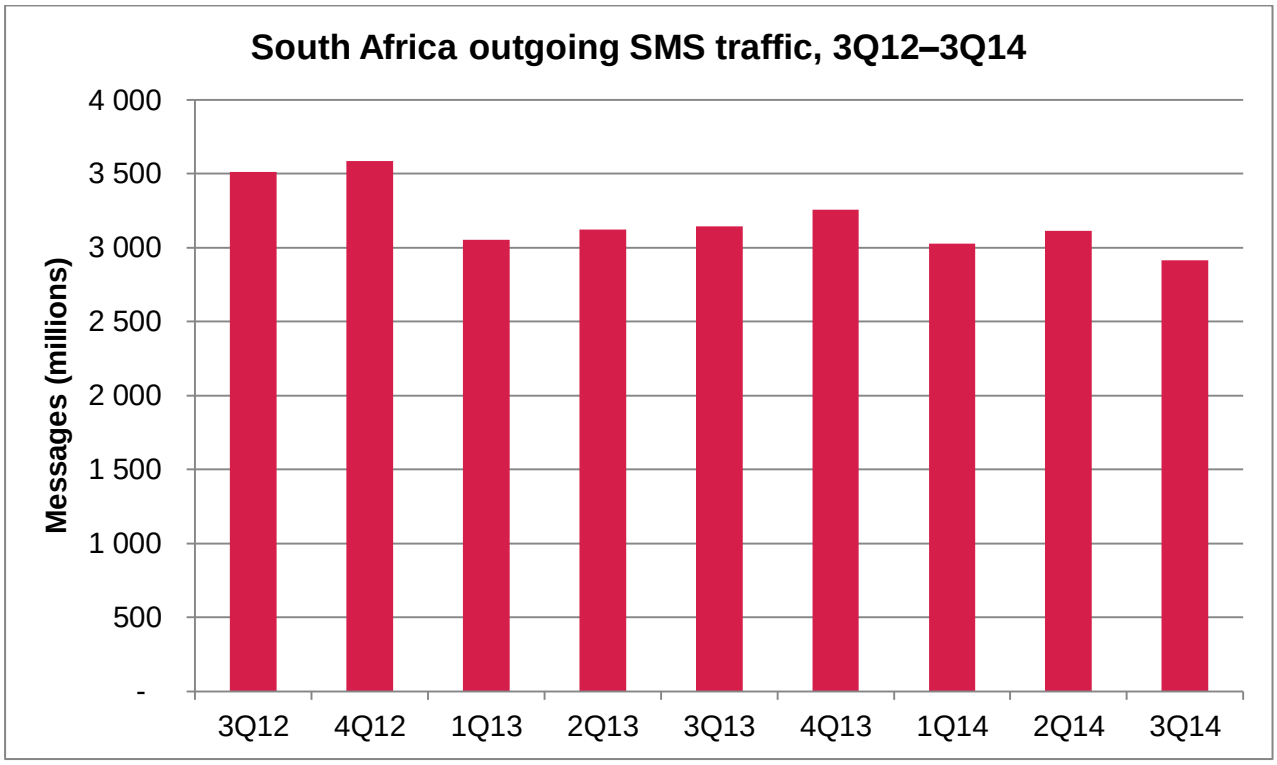


Source: Ovum

The potential for broadband expansion is undoubted, (non-broadband mobile connections outside South Africa is at 75%.1%), opportunities for the telecommunications industry to penetrate this market. South Africa has a standard mobile connection rate of 47.1%. There are opportunities for expansion for mobile

operators within South Africa. Unlike operators in many African countries, South African operators do not promote many service-based data plans (e.g. Facebook or What Sapp bundles). Notwithstanding, Cell C launched free What Sapp usage in 4Q14.

Table 1: South African Messaging trends



Source: Ovum

Table 1 is an indication that SMS traffic is in decline due to increased usage of social network platforms. Traffic is largely sustained by free Mses, often used by operators as a reward and loyalty tool, and by premium messaging. Ovum estimates that the country's outgoing SMS traffic remained relatively stable in 3Q14, at around 3 billion. In September 2014, the Independent Communications Authority of South Africa (ICASA) published new mobile termination rates (MTRs). ICASA had released new

rates in 1Q14. However, in a case brought by mobile operators, a court ruled that the regulation under which larger players had to pay twice as much as smaller ones was unlawful. Rates were adjusted to R0.20 for calls from smaller operators using larger networks and R0.30 for the inverse, have been implemented from 01 October 2014. This in turn will have an impact on the profitability of larger companies; they must be innovative and creative to maintain profitability levels. Corporate Entrepreneurship must be a key strategic initiative for companies within the industry.

Table 2: Telecoms market context (South Africa telecommunication update – 2015)

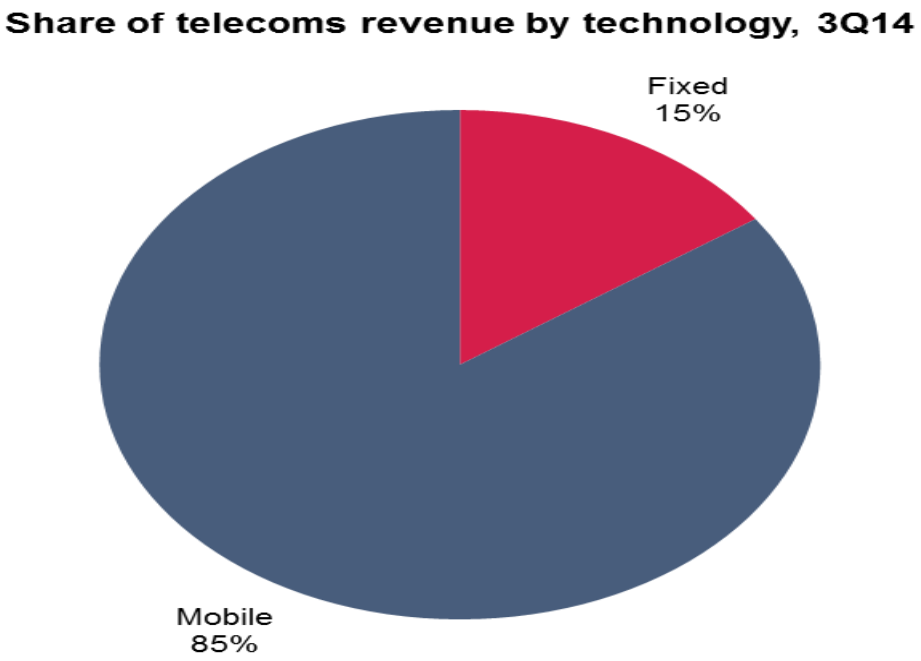
Statistics	3Q14
Population	51,185,486
Median age	26.21
Urban population (%)	63.31
Households	10,447,598
% of households with broadband	14
GDP ($ban)	711.77
GDP per capita ($)	13,382.75
Yoyo change in GDP (%)	3.10
Annual telecoms spend change (%)	-13%
Annual telecoms spend ($ban)	1.7
Monthly mobile ARPU ($)	9

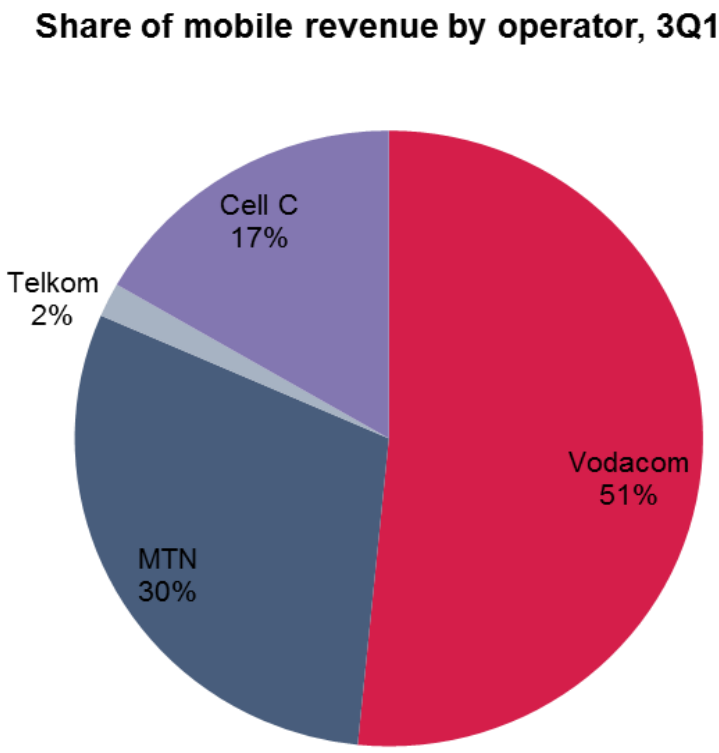
Notes: GDP statistics are based on purchasing-power parity

Sources: Ovum, IMF, World Bank

South Africa had one of the continent's five highest mobile penetration rates, with a figure of 151%, at the end of Q3, 2014 (Morgue, 2014). Though the country has one of the most mature telecoms markets, fixed broadband household penetration stood at 14% and mobile broadband penetration stood at 58%.

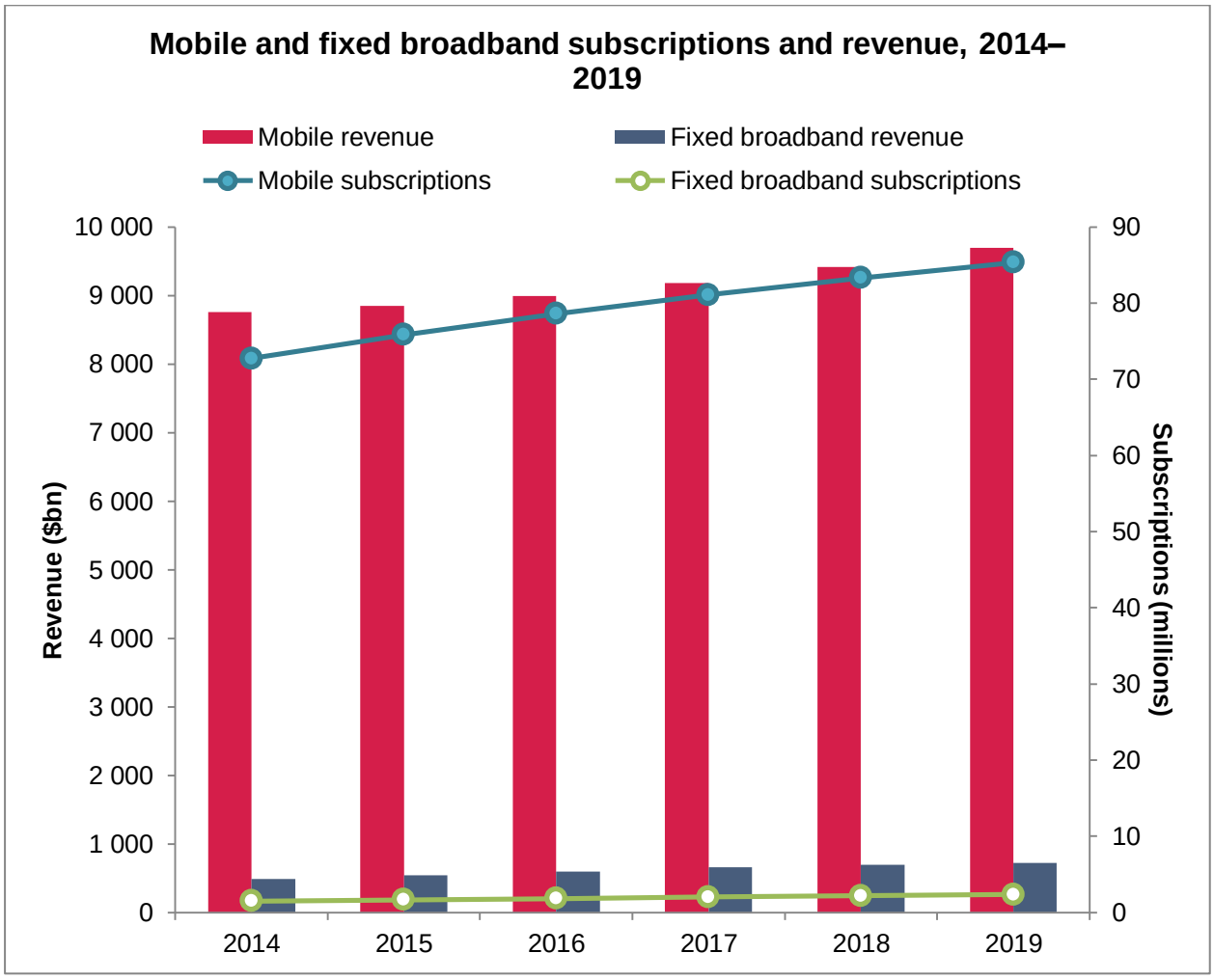
Figure 8: Telecoms revenue shares (South Africa telecommunication update, 2015)





With regards to mobile revenue, 85% is the highest revenue generation for the telecommunications industry, and in terms of the fixed line, 15% has decreased over the last 20 years. Mobile development has become a key focus for the telecommunications industry with the expansion of smart phones adding to the increase in mobile revenue. Vodacom has the highest share of the South African mobile revenue (51%), followed by MTN (30%), Cell C (17%), and Telkom (2%).

Table 3: Forecast



Note: Subscription data refers to year-end
Source: Ovum

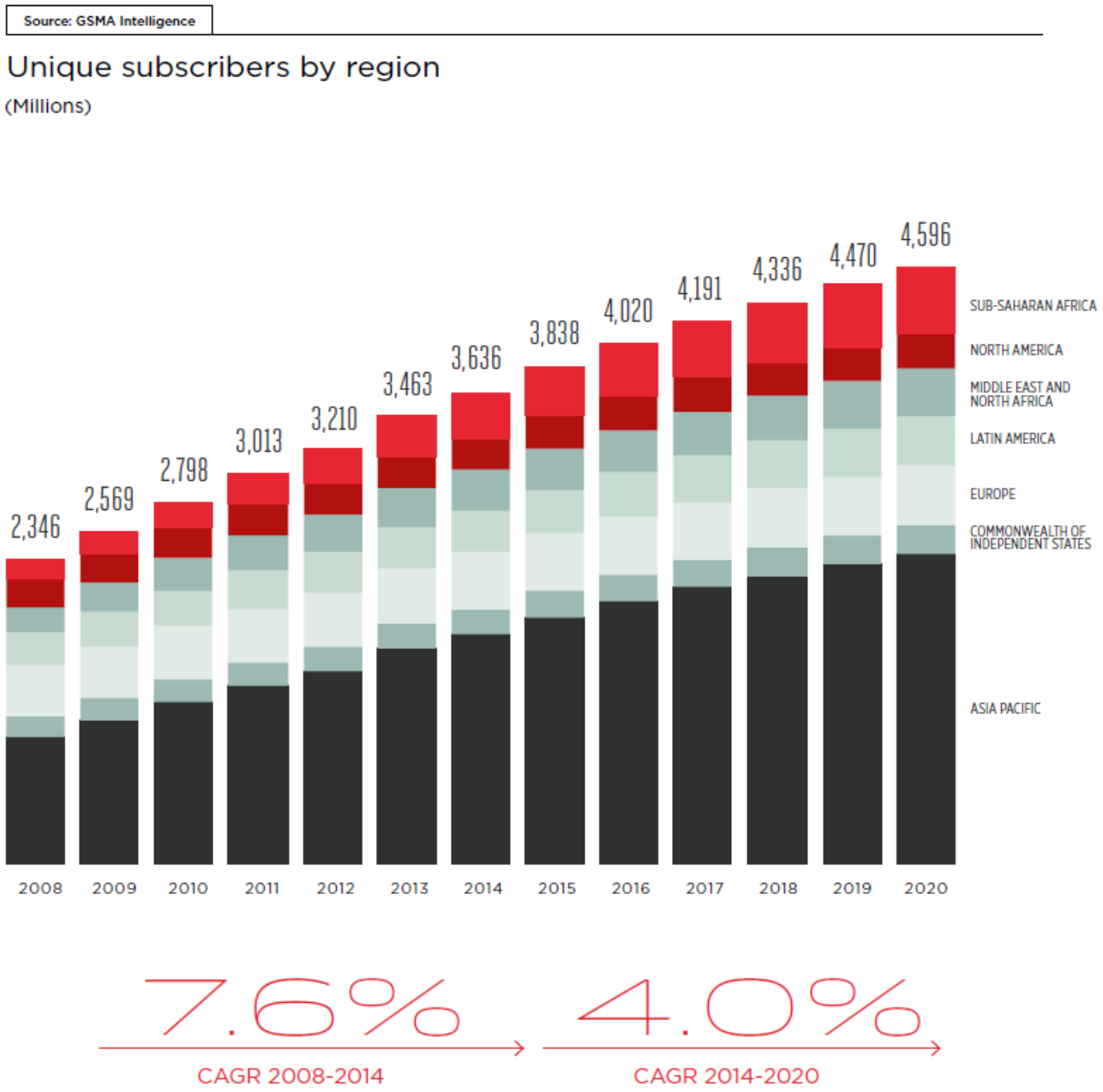
The forecast predict that mobile broadband revenue will increase between 2014 until 2019. Fixed broadband subscriptions growth will stabilise and the expansion will be flat, an indication that fixed broadband subscription will be declining whilst there is an increase in mobile broadband subscription.

2.6 The mobile economy

The world is seeing a rapid technology migration to both higher speed mobile broadband networks and the increased adoption of smartphones and other connected devices. Mobile broadband connections will account for almost 70% of the global base by 2020, up from just fewer than 40% at the end of 2014. Smartphone adoption is already reaching critical mass in developed markets, with the devices now accounting for 60% of connections. It is the developing world driven by the increased affordability of devices that will produce most of the future growth, adding a further 2.9 billion smartphone connections by 2020 – “The Mobile Economy Report 2015”.

Fuelled by the growing range of new services and applications, data traffic is expected to see an almost ten-fold increase by 2019. Slowing subscriber numbers, as well as competitive and regulatory pressures, have led to a slowdown in industry revenue growth in recent years. Revenue growth is forecast to slow further over the coming years, with a compound annual growth rate (CAGR) of 3.1% per annum through to 2020, down from 4% in the period 2008-2014. More encouragingly, operators are showing an increasing ability to monetise the explosive growth in data traffic - “The Mobile Economy Report 2015”.

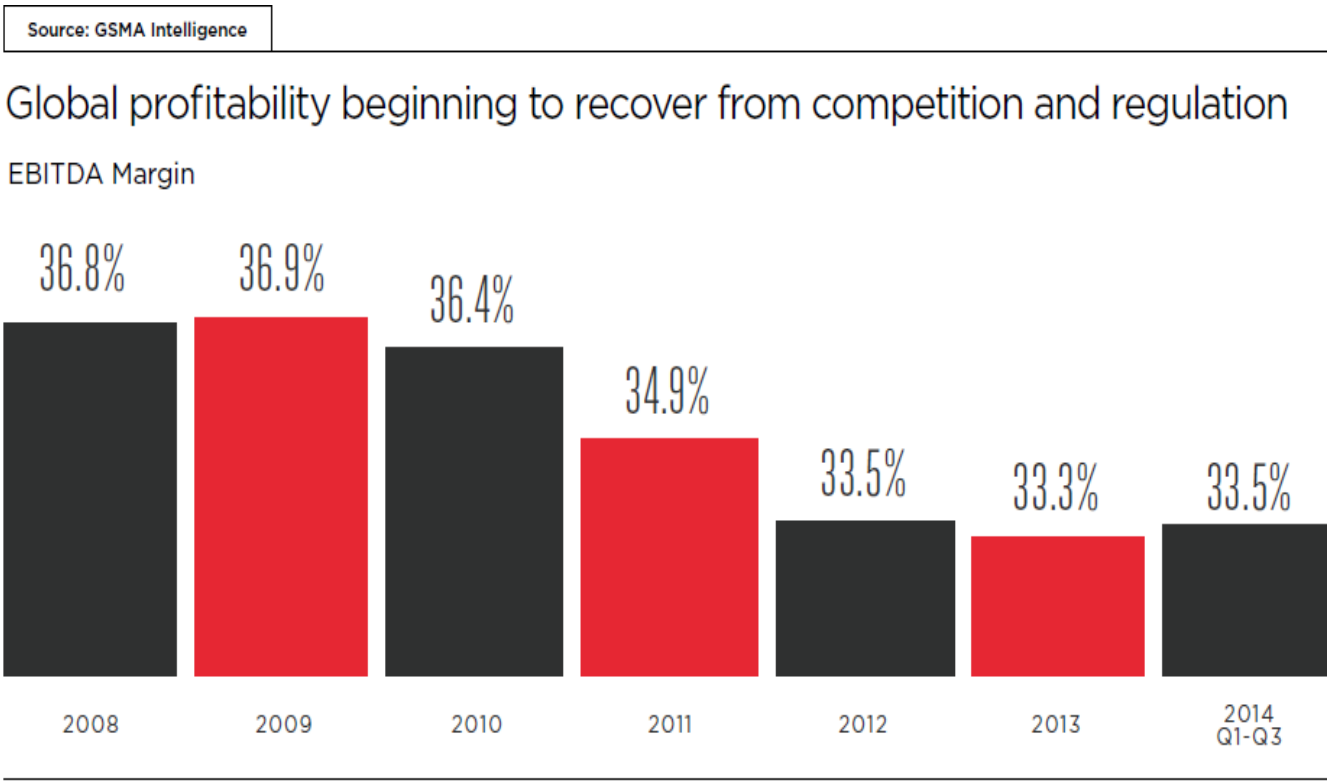
Figure 9: Mobile subscribers by region (The Mobile Economy Report, 2015)



Unique subscriber penetration in the developed world is already very high and approaching saturation, standing at 79% at the end of 2014 - “The Mobile Economy Report 2015”. The mobile economy report 2015 stated that the penetration rate will climb only modestly to around 81% by the end of the decade. There is significant

room for growth and strategic entrepreneurial initiatives should be employed to identify growth opportunities. One of the major challenges facing the mobile operators and other industry stakeholders is connecting the still unconnected populations in the developing regions. The mobile economy report also stated that the increasing level of maturity in developed markets combined with the recent strong growth in developing markets, means that there will inevitably be a slowdown in global subscribers.

Figure 10: Global Mobile Profitability (The Mobile Economy Report, 2015)



An increase in competition and regulatory intervention had an impact on global mobile markets. Regulatory measures to increase competition have included the introduction of mobile virtual network operators (MVNOs) and mobile number

portability. Between 2008 and 2013, Earnings Before Interest, Tax, Depreciation and Amortization (EBITDA) margins at the global level fell 350 basis points – “The Mobile Economy report 2015”. The margins trends stabilised in 2014. Operators across many developed markets have also been taking steps to rationalise their cost bases, as well as move away from handset subsidies – “The Mobile Economy report 2015”. These trends has been spearheaded by North American companies; T-Mobile was one of the first operators to move away from traditional handset subsidies and develop new financing an device upgrades – “The Mobile Economy report 2015”. This gives consumers the option of keeping their existing handset or paying for a new one through an instalment plan.

2.7 Conclusion of the literature Review

Entrepreneurial behaviour continues to be seen as an important path to competitive advantage and improved performance in firms (Lumpkin and Dress, 1996). This study will focus on the important role middle-level managers’ play in the corporate entrepreneurial strategy of the firm and how middle-level managers ensure that corporate entrepreneurial strategies are effectively communicated from top-level managers to operational-level managers. Entrepreneurial behaviour does not occur in a vacuum, it takes place within the context of the organisation’s full array of actions (Dress, Lumpkin, and Covin, 1997).

Floyd and Lane, 2000, argued that middle-level managers’ entrepreneurial behaviours involve the sub-processes of championing, synthesizing, facilitating, and implementing. According to Wang (2008) entrepreneurial firms must foster

organisational learning in order to maximise the effect of Entrepreneurial Orientation on company performance. Corporate Entrepreneurship is important for organisational survival, growth, profitability and renewal (Sebola and Theerapatvong 2009; Covin and Miles 1999; Limpkin and Dress 1996).

Corporate Entrepreneurship is a type of proactive behaviour through which organisations seek several outcomes such as the creation of new organisation, instigation of innovation, and strategic renewal (Sharma and Chrisman, 1999). The Model of Middle-Level Managers' Entrepreneurial Behaviour used in the research integrates previous work in Corporate Entrepreneurship (Kuratko, Ireland, Covin, and Hornsby, 2005). This research will compare the outcomes of middle-level managers' entrepreneurial behaviour compared to entrepreneurial action within the telecommunications industry.

Notwithstanding the fact that middle-level managers implement corporate entrepreneurial strategies of top-level managers, they also identify potential entrepreneurial opportunities and acquire the necessary resources to exploit those opportunities. Middle-level managers also evaluate the implementation of corporate entrepreneurial strategies implemented by operational-level managers focusing on providing the relevant support to operational-level managers, hence, middle-level managers endorse corporate entrepreneurial perspectives coming from top-level executives and sell their value-creating potential to the primary implementers, operational managers (Kuratko, D.F., Ireland, R.D., Covin, J.G., Hornsby, J.S., 2005). How entrepreneurial initiatives take place is in the domain of middle-level

managers; they play a critical role in the successful implementation of the corporate entrepreneurial strategy of the firm.

The telecommunications industry within South Africa plays an important role in the economy. Communications are becoming more important to business globally, the demand for technological accessibility has increased in households within South Africa. The impact middle-level managers have within the telecommunications' industry on corporate entrepreneurial initiatives will be analysed in the research. Technological developments within the telecommunications industry have been rapid over the last decade and corporate entrepreneurial strategies are essential to maintaining a competitive advantage within the industry. The research will investigate the important role middle-level managers have in the implementation of the corporate entrepreneurial strategy within the telecommunications industry in South Africa.

The hypotheses of the study are as follows:

H1: There is a strong correlation between entrepreneurial orientation and innovativeness amongst middle-level managers within organisations.

H2: Middle-level managers perceive that there is a strong relationship between entrepreneurial orientation and organisational performance.

H3: There is a strong correlation between middle-level managers who incorporate risk taking and pro-activeness within their organisations and entrepreneurial orientation.

Chapter 3: Research Methodology

3.1 Introduction

This chapter will describe the research methodology used in this study. The research methodology specifies how the study was conducted to reach the stated objectives. The main objective of this research is to evaluate the role of middle-level managers on Corporate Entrepreneurship within the telecommunications industry in South Africa. The study assesses the relationship between Corporate Entrepreneurship (Innovation, Performance, Risk taking, and Pro-activeness) and Entrepreneurial Orientation. The methodology explains the relationship between the independent variables (Innovation, Performance, Risk Taking, and Pro-activeness) and the dependent variable (Entrepreneurial Orientation). This study followed a quantitative cross-sectional research method. Cross-sectional research examines information on many cases at one point in time (Neuman, 2011).

The research adopted the following methodological process based on the Structural Equation Model (Suhr, 2006):

1 Review the relevant theory and research literature to support the research model;
2 Specify the research model;
3 Determine model identification;
4 Select the measures for the variables represented in the research model;
5 Collect the data through an online questionnaire;
6 Conduct preliminary descriptive statistical analysis;

7 Estimate parameters within the research model;

8 Assess the model fit;

9 Interpret and present results.

The research methodology describes the method used to address the following hypotheses:

H1: There is a strong correlation between entrepreneurial orientation and innovativeness amongst middle-level managers within organisations.

H2: Middle-level managers perceive that there is a strong relationship between entrepreneurial orientation and organisational performance.

H3: There is a strong correlation between middle-level managers who incorporate risk taking and pro-activeness within their organisations and entrepreneurial orientation.

3.2 Research Methodology

The research will use a quantitative approach to analyse the data. Quantitative research methods are needed for more rigorous tests and hypotheses (Perry 2002). Quantitative research is 'Explaining phenomena by collecting numerical data that are analysed using mathematically based methods (Aliaga and Gunderson, 2000). Quantitative research is essentially about collecting numerical data to explain a particular phenomenon, particular questions seem immediately suited to being

answered using quantitative research (Aliaga and Gunderson, 2000). Quantitative research use strategies of enquiry, such as experiments and surveys, and the research method collects data on predetermined instruments that yield statistical data (Creswell 2003).

Gathering quantitative research with the use of online questionnaires will provide information that measures the impact of middle-level managers on Corporate Entrepreneurship within the telecommunications industry in South Africa. The study will be able to collect a wide number of data through the quantitative research method by the use of online questionnaires. The research structure includes the target population, sampling method, instruments used for data collection and procedures for data collection.

Quantitative results can be applied to other contexts and situations through statistical or mathematical modelling, in other words, this type of research can be used to make predictions about what was being studied, whether phenomena, opinions, or experiments (Hickerson, B.D., and Beggs, B.A., 2007). This research made use of probability sampling which will allow statistical references to be made which is the focus of quantitative research. Experiments used during a quantitative research method includes, quasi-experiments and correlation studies (Newman, 2011). The researcher is allowed to study a specific culture in their natural setting over a specified period by collecting the relevant data using quantitative research (Newman, 2011).

3.3 The Research Design

The key focus of the research design is to create a plan to obtain answers for the research problems. The plan constitutes the overall scheme or program of the research (Kerlinger and Lee, 2000). The study will use online questionnaires to gather the relevant data. Online questionnaires will allow for a broader range of data allowing for a bigger sample of respondents. The online questionnaire was amended to ensure to suit the telecommunications industry in South Africa. Relevant research in the academic literature was used as a guideline for the online questionnaire.

The following advantages and disadvantages of an online research questionnaire as discussed by Wright (2006):

Advantages

1) One advantage of online survey research is that it takes advantage of the ability of the Internet to provide access to groups and individuals who would be difficult, if not impossible, to reach through other channels;
2) Online surveys allow a researcher to reach thousands of people with common characteristics in a short amount of time;
3) Online survey researchers can also save money by saving paper and using the electronic format instead;
4) It allows the researcher to reach a larger population size;
5) Data collection is also streamlined and rapid.

Disadvantages

1) Researchers can encounter problems with regards to sampling, that is, if the data is self-reported, there is no guarantee that participants from previous surveys provide accurate demographic or characteristics information;
2) E-mail lists are not accurate which can make it difficult to reach participants;
3) Self-selection bias is another major limitation of online survey research;
4) Online research questionnaires have a low response rate;
5) Online computer security is also a concern when it comes to forwarding online questionnaires.

The questionnaires will be self-administered which means that respondents complete it at their own pace within the 3 week deadline. The disadvantage of the methodological strategy is that it is difficult to ensure that a large group finishes the questionnaire and the quality of the answers are accurate.

3.4 The Experimental Design

The study will focus on listed and non-listed telecommunications companies within South Africa. Middle-level managers of the telecommunications companies will be used for this study with a special focus on their roles in Corporate Entrepreneurship.

3.5 The Population and Sample

3.5.1 The Population

The population of this study consisted of middle-level managers (permanently employed) within the telecommunications industry within South Africa. The participants of this study comprised of 402 middle-level managers. The target population only included permanent employees. E-mails with an official letter containing the instruments, were forwarded to the 402 middle-level managers within the telecommunications industry. The letter confirmed that the study was about entrepreneurial orientation. Only 172 questionnaires were completed and returned to the researcher. The middle-level management employees in the study included those working in Information Technology, Finance (Credit and Risk), Corporate and Business Division, Commercial Division and Human Resources. The response represented a rate of 43%. The middle-level managers were requested to complete the questionnaire as part of research on Corporate Entrepreneurship.

In formation on the Demographic variables were obtained:

- Gender
- Level of qualification
- Number of years in the organisation
- The geographical area of work
- Functional area within which the individual works

3.5.2 Sample and sampling method

The data for the research was collated by using an online questionnaire. This study used a non-probability research method. Non-probability sampling is appropriate when there are time constraints for the research study (Cooper & Schindler, 2008). The sample focused on listed and non-listed telecommunications companies within South Africa. The sampling frame consisted of permanent, middle-level management employees per company. The company data was obtained by using the Information Technology Website and also company websites.

The sample frame consisted of middle-level managers within the telecommunications industry in South Africa. This research had a sample size of n=288 within the telecommunications industry which was appropriate for the study. This research report has 172 valid usable responses from the online questionnaires. The study had 113 online questionnaires that were not completed. This resulted in a response rate of 59.7%. The study used e-mails and telephone calls to encourage respondents to complete the online questionnaires. Refer to **Appendix B** for a snapshot of all the responses.

Participation to the study was voluntary and all participants were informed accordingly, and they were made aware that they can withdraw from the study at any time. The participants were aware of the associated risks involved in the research and that their consent was needed to participate in the research. The 172 responses received ensured a generalised look across the telecommunications industry within South Africa. This study focused on the mobile industry (within the telecoms

industry), which was an important contributor towards the analysis of the data. Refer to **Appendix C** for the names of the companies within the mobile industry that participated.

3.6 Procedures for gathering data

The online questionnaires included a cover letter describing the study and assuring confidentiality which was distributed to all respondents. In the mobile industry the online questionnaires (via a link) was forwarded to senior managers who then distributed it to middle-level managers. Middle-level managers were given a total of three weeks to complete the online questionnaires. A follow-up e-mail was forwarded to senior managers to ascertain the progress of the online questionnaires.

3.7 The Research Instrument

The research used statistical analysis (Barrett and Weinstein, 1998), to evaluate the relationship between the dependent variable (entrepreneurial orientation) of the company's corporate entrepreneurial strategy and several independent variables (Innovativeness, Performance, Risk taking and Pro-activeness). The research used a seven point Likert scale. The data analyses was directly linked to the research problem. The research will use the Structural Equation Model (SEM) to analyse the data.

Likert scales are of the most widely used tools in marketing research and commercial market research; they are used to capture information on a range of

phenomena (Dawes, 2007). A study by Finn (1972) reported the means and variances for scales 1 to 9. This study suggested that 7 and 9 point likert scales produced comparatively higher scores.

According to Dawes (2007) there are three reasons why the scale format is influencing data:

- The sophistication of analytical methods is increasing;
- The data from a survey is not just reported rather they are analysed with the objective of explaining or accounting for the variance in a dependent variable;
- Many organisations periodically track consumer sentiment and often scales are a major type of the research.

The relation between the original scale values and the real identified scale values is very close (Dawes, 2007). A study by Burns and Bush (2000) support the treatment of such scales as if they are equal intervals. Likert scales are desirable from the viewpoint of obtaining data that will be used for regression analysis (Dawes, 2007). A seven point likert scale is comparable for analytical tools such as the structural equation model.

Structural Equation Model:

- Is a comprehensive statistical approach to testing hypothesis about relations among observed and latent variables (Hoyle, 1995);
- Is a methodology for presenting, estimating, and testing a theoretical network of linear relations between variables (Rigdon, 1998);

- Tests hypothesised patterns of directional and non-directional relationships among a set of observed (measured) and un-observed (latent) variables (MacCallum and Austin, 2000).

The purpose of SEM is to account for variation and covariation of the measured variables (Suhr, 2000). Refer to previous research conducted by Roth and Fillingim (1988), studying the fitness questionnaire using the SEM model. The SEM analysis found hardiness mediated by stress and exercise mediated by fitness (Roth, et al., 1989). This study hypothesises two latent constructs related to wellness, physical, and mental. SEM therefore compares the relationship, if any exist, between a dependent and independent variables.

3.7.1 The Structural Equation Model (SEM)

The research used the structural equation model (SEM) to evaluate the data. The structural equation model (SEM) is one of the most important quantitative techniques in research today (Lee, 2014). The SEM model proposes that either higher satisfaction or investment associates with higher commitment and higher levels of alternatives are associated with lower commitment (Lee, 2014). The SEM literature tends to use the following terminology (Lee, 2014: 1) In SEM objectivity measured variables are called Indicators or Manifest variables, 2) Subjective underlying inferred constructs are called Latent factors, Latent constructs or Latent variables.
This study used SEM to establish if there is a direct link between the dependent variable (entrepreneurial orientation) and the independent variables (Innovativeness, Performance, Risk taking and Pro-activeness) – Endogenous Variables.

The use of structural equation modelling has been growing in psychology and the social sciences, providing researchers with a comprehensive means for assessing and modifying theoretical models (Anderson and Gerbing, 1988). A confirmatory measurement or factor analysis model specifies the relations of the observed measures to their posited underlying constructs with the constructs allowed to intercorrelate freely (Anderson and Gerbing, 1988). An important strength of the Structural Equation Model is its ability to bring together psychometric and econometric analyses in such a way that some of the best features of both can be exploited (Fornell and Larcker, 1981). The Structural Equation Model is tested by two methods: (1) T-test and (2) Chi square test.

3.7.1.1 T-test

The t-test (the ratio of the parameter estimate to its estimated standard error) indicates whether individual parameter estimates are statistically different from zero (Fornell and Larcker, 1981). According to Fornell and Larcker (1981), two problems are associated with the application of t-tests in structural equation models: (1) the estimation procedure does not guarantee that the standard errors are reliable and (2) the t-statistic tests the hypothesis that a single parameter is equal to zero. Although the computation of standard errors by inverting the Fisher information matrix is less prone to produce unstable estimates than earlier methods, complete reliance on t-tests for hypothesis testing is not advisable (Lee and Jennrich, 1979). The use of t-tests on parameters understates the overall Type I error rate and multiple comparison procedures must be used (Bielby and Hauser, 1977). The evaluation of

the structural models is more commonly based on a likelihood ration test (Joreskog, 1969).

3.7.1.2 Chi-square test

The chi-square statistic compares the “goodness of fit” between the covariance matrix for the observed data and covariance matrix derived from a theoretically specified structure (Fornell and Larcker, 1981). According to Cooper and Schindler (2008), the chi-square test is useful in tests involving nominal data, but can be used for higher scales. Based on the null hypothesis, the chi-square test can be used to test for significant differences between the observed distribution of data among categories and the expected distribution. To test if the two variables are independent, that is, statistical independence, the chi-square test is the primary statistic used. The first problem with the chi-square test is that its power is unknown (Bielby and Hauser, 1977). Knowledge of the power curve of the chi-square is critical for the theory evaluation in structural equation models because the testing is organised so that the researcher a priori expects that the null hypothesis will not be rejected (Fornell and Larcker, 1981). If the power of the chi-square test is low, the null hypothesis will seldom be rejected and the researcher using structural equation models may accept a false theory, thus making a Type II error (Fornell and Larcker, 1981). The second limitation of the chi-square test is related to the impact of sample size on the statistic (Joreskog, 1969).

Linear regression was also used for the research. There is a correlation between SEM and linear regression and both measure the impact of variables against each other.

Regression is about associations between multiple variables where you believe that one of the variables (the dependent variable) is explained or predicted by others (the independent variables), (Lee, 2014). Regression analysis is one of the most widely used techniques for analysing factor data (Montgomery, Peck, and Vining, 2012). Its broad appeal and usefulness result from the conceptually logical process of using an equation to express the relationship between a variable of interest (the response) and a set of related predictor variables; regression analysis is therefore a statistical technique for investigating and modelling the relationship between variables (Montgomery, Peck, and Vining, 2012).

An important objective of the regression analysis is to estimate the unknown parameters in the regression model; the process is called fitting the model to the data (Montgomery, Peck, and Vining, 2012). The research will measure the impact of the dependent variable (entrepreneurial orientation) on the independent variables (Innovativeness, Performance, Risk taking and Pro-activeness), and if the dependent variable can explain or predict the independent variables.

3.8 Procedure for data collection

A good data collection scheme can ensure a simplified and generally more applicable model whilst a poor data collection scheme can result in serious problems for the analysis and its interpretation (Montgomery, D.C., Peck, E.A., and Vining, G.C., 2-12).

The research will establish if there is a direct correlation between middle-level management and Corporate Entrepreneurship by measuring the relationship between middle-level management and corporate entrepreneurial strategy. The data for the research was collated by an online questionnaire and a seven point Likert scale. The scale represented the dependent (Entrepreneurial Orientation) and independent variables (Innovativeness, Performance, Risk taking and Pro-activeness). The company data was obtained through the ITWEB website. With the reduction of costs for computer hardware and computer software, and the increase in the usage of the internet and its popularity among society, it will be a viable option for this research. The research used https://drive.google.com to select the on-line survey option.

The number of businesses that have moved online and use the Internet as an advertising tool is an indication of the positive impact of the Internet on organisations. This study will benefit from this medium since it uses online questionnaires to gather the relevant data.

The Internet makes it easier to reach individuals or groups. These groups can be difficult to reach through alternative channels and online surveys allow the researcher to save time and gathering data is not delayed. The Internet allows the researcher to have access to a global audience and populations separated by geographical distances. The online questionnaires allowed the respondents to complete the questions within the comfort of their work or home environment.

3.9 Data analysis and interpretation

This study used descriptive and inferential statistics, i.e. descriptive statistics described the data and inferential statistics described the level of relationship between dependent and independent variables (Lee, 2014). Descriptive statistics describe the main characteristics of the respondents: Examples include - frequencies, means, modes, medians, standard deviation and coefficients of variation to summarise the characteristics of the data. Descriptive statistics are the basic analysis of centrality of variables, spread and other distributional features of variables and other elements describing variables (Lee, 2014).

SEM (Structural Equation Model) is regression type relationship; multiple regressions take the correlation/covariance and formalise it into a linear relationship, where one of the variables is assumed to cause the other (Lee, 2014). Structural regression attempts to make assumptions about direct relationships. The commitment under structural regression becomes endogenous, resulting in a disturbance. Structural regression allowed for the extraction of measurement error in the manifest variables and it better represents the latent variables.

Descriptive statistics provided the research with various relevant aspects that helps with a pre-assessment of each variable for data checking purposes. For each variable, a descriptive analysis can give you information such as the number of observations with data (N), amount of missing data, Mean (average), Median, Standard Deviation, Interquartile range (data points at 25^{th} and 75^{th} percentiles of answers), (Saunders, M, Lewis, P, and Thornhill, A., 2009). Descriptive statistics helped to identify inappropriate data points in advance.

Chapter 4: Results of the study

4.1 Introduction

This chapter describes the results of the research analysis in order to provide answers to the research problems that underpin the study. The research problems were tested using the Structural Equation Model (SEM). This study used descriptive and inferential statistics; descriptive statistics described the data and inferential statistics described the level of relationship between dependent and independent variables (Lee, 2014). Multiple regression analysis studies the effects and magnitudes of the effects of more than one independent variable on one dependent variable (Hair, Anderson, Tathan and Black, 1998; Kerlinger and Lee, 2000).

The data analysis that was obtained will be included in this chapter. The results of the research will be structured as follows: firstly, the geographical location of the respondents used in the research is described; secondly, the area of the business where the respondents work is described. Thereafter, the SEM (Structural Equation Model) will be used to analyse the data, using descriptive stats e.g. means, medians, measures of variability, standard deviations for asymmetry used, and Cronbach's coefficient alpha for internal consistency reliability.

The aim of this study, as mentioned in chapter 1, is to determine the role of middle-level managers on Corporate Entrepreneurship within the telecommunications industry within South Africa. Corporate Entrepreneurship is measured by analysing

the independent variables (Innovativeness, Performance, Risk taking and Pro-activeness) and dependent variable (Entrepreneurial orientation).

4.1.1 Reliability

The research will measure reliability for the different scales derived from the SEM (Structural Equation Model).

4.1.2 Validity

The quantitative research methodology relate to the positivist approach to social research. A positive approach implies that the researcher begins with a cause-effect relationship logically derived in general theory and then engages in precise measurements of a social world (Neuman, 2011, pp. 90-121). The quantitative research method allows the researcher to remain detached, neutral and objective, examining the evidence and replicating other research in order to test empirically and confirm the laws of social life as outlined in the theory presented (Neuman, 2011). Factor analysis will be used to check the validity of the study (Cooper and Schindler 2008). The Structural Equation Model (SEM) was used to assess the validity of the research results. Factor analysis was performed on all the items of the scales to measure each of the constructs of the model.

4.1.3 Assumptions of the study

This section describes the score distribution of the study using comparisons of the different scales used in terms of their descriptive statistics to see if they do meet the

required statistical testing. The researcher can use this information to make the relevant adjustments to the measurement scales.

4.1.4 Group Comparability

This study focused on the telecommunications industry in South Africa concentrating on four sectors within this industry. The researcher used the SEM model to test for the relationship between the dependent variable (Entrepreneurial Orientation) and the independent variables (Innovation, Performance, Risk taking, and Pro-activeness); any deviation from the ideal test will result in the combined sample being problematic. The sample compares the entrepreneurial orientation of middle-level managers within the telecommunications industry in South Africa. The research compared the correlation of the dependent variable and the independent variables in order to identify the importance of entrepreneurship within this industry.

4.1.5 Testing the Hypothesis

The hypotheses of the study were tested by using regression analysis based on the Structural Equation Model (SEM), by the empirically derived scales. The hypotheses were framed as research hypotheses rather than statistical null and alternative hypotheses. The results obtained during the research, i.e. test of the research hypotheses served as the empirical evaluation of the model used.

H1: There is a strong correlation between entrepreneurial orientation and innovativeness amongst middle-level managers within organisations.

H2: Middle-level managers perceive that there is a strong relationship between entrepreneurial orientation and organisational performance.

H3: There is a strong correlation between middle-level managers who incorporates risk taking and pro-activeness within their organisations and entrepreneurial orientation.

4.2 Sample description

4.2.1 Organisational characteristics: gender, qualifications, work experience, and functional areas.

The gender distribution of the respondents

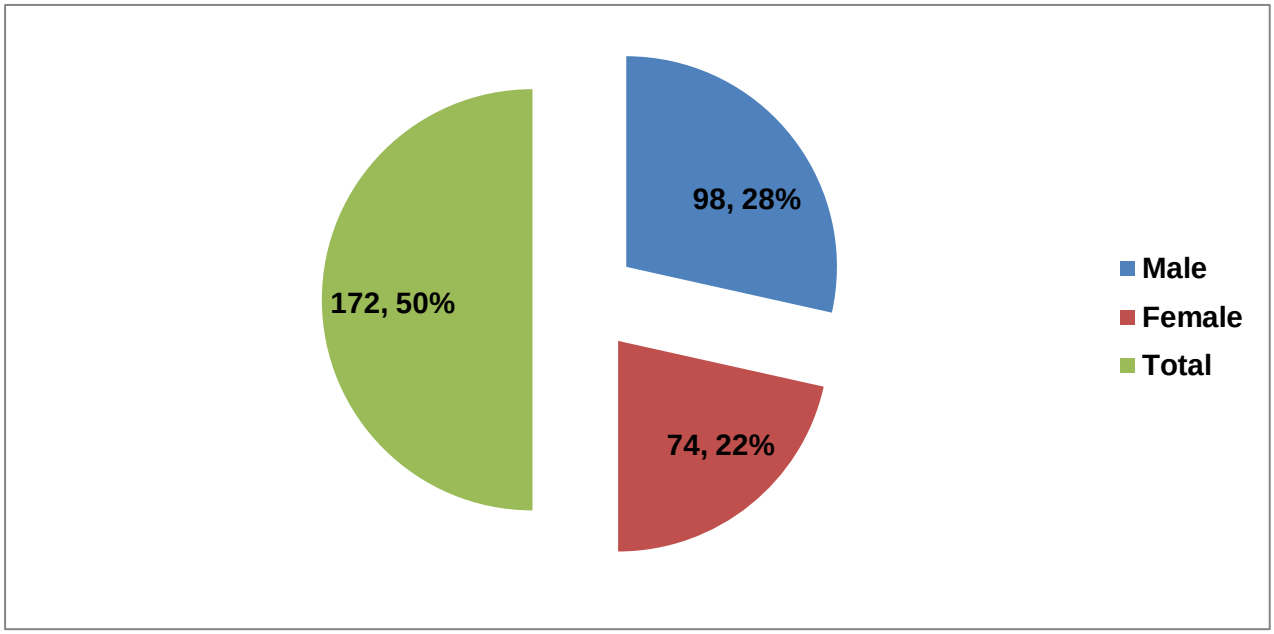
Data was collected from a total of 172 respondents out 402 online questionnaires forwarded to middle-level managers. The respondents consisted of 98 males (57%), and 74 females (43%). The figure below shows the sample results between the two gender groups. The sample of this study indicates that more than half (57%) of respondents were male middle-level managers.

The body of data on the status of women in leadership suggests black females continue to be the most poorly represented group in leadership and management positions although all women in South Africa face the proverbial glass-ceiling phenomenon. Moreover, South Africa is dominated by white males in management (Booysen, 1999a). Research also suggests women in South Africa face similar barriers to their progress and upward mobility as their female counterparts in the rest of the world (Erwee, 1994; Erasmus, 1998; and Mathur-Helm, 2002).

Table 4: Gender distribution of the respondents (n=172)

Gender	Count	Percent (%)
Male	98	57%
Female	74	43%
Total	**172**	**100%**

Figure 11 – Gender Distribution



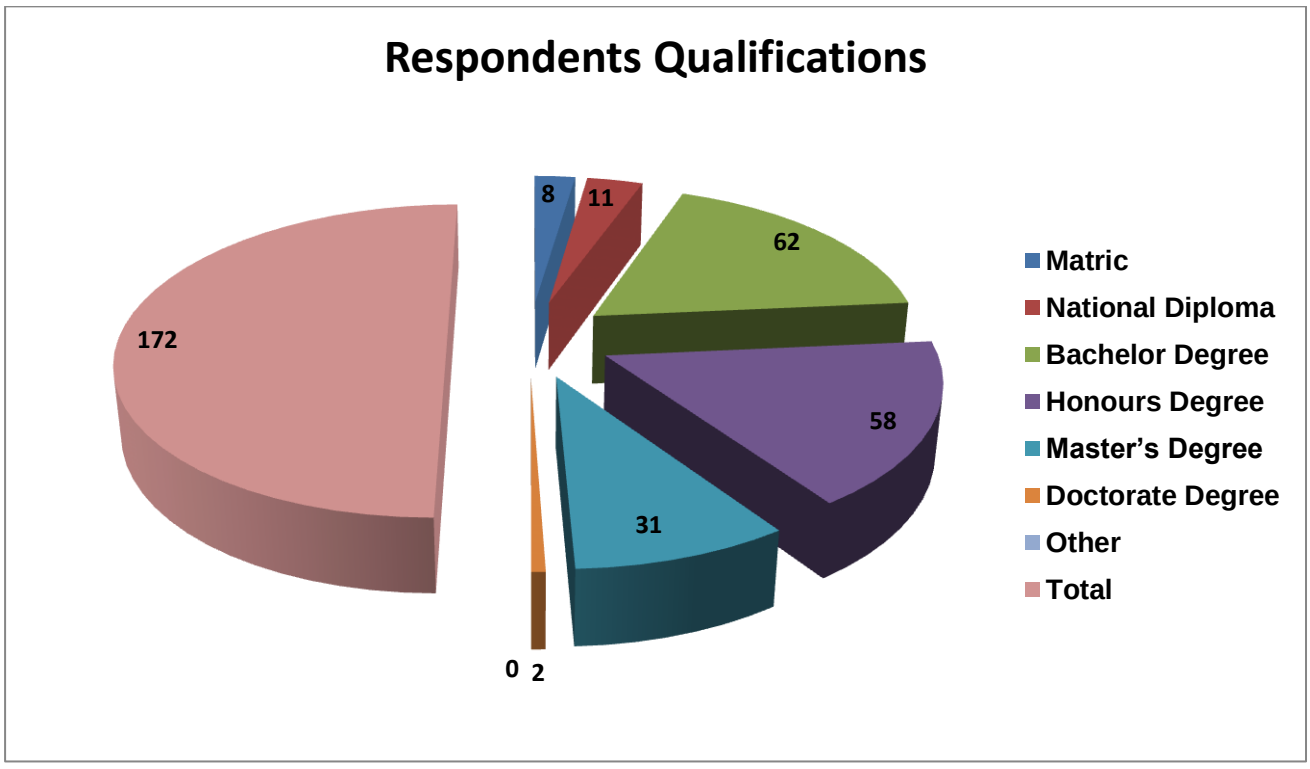
The respondent's qualifications

The qualification of the respondents ranged from 36% with Bachelor's degrees and 34% with Honour's degrees; an indication that most middle-level respondents have post matric qualifications. The telecommunications industry identified the importance of skilled middle-level managers on enhancing entrepreneurship within the industry.

Table 5: Distribution of respondents educational level (n=172)

Educational level	Count	Percent (%)
Matric	8	5%
National Diploma	11	6%
Bachelor Degree	62	36%
Honours Degree	58	34%
Master's Degree	31	18%
Doctorate Degree	2	1%
Other	0	0%
Total	**172**	**100%**

Figure 12: Respondents Qualifications



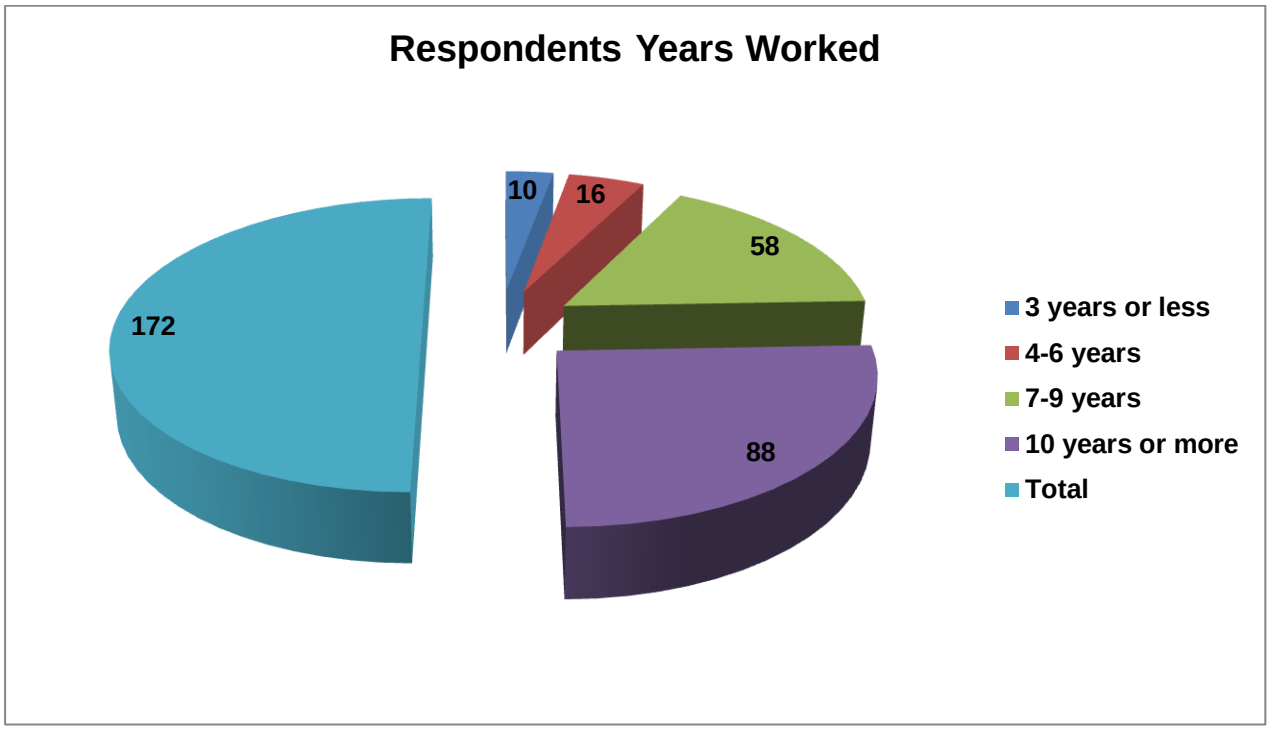
The number of years worked by the respondents

More experienced workers are less likely to be emotionally disturbed by negative incidents because they do not perceive the negative consequences of each and every non-fulfilment as dramatic (Bedeian, Ferris, & Kacmar, 1992). More experience workers are more likely to accept changes within the work environment and indirectly react positively towards entrepreneurial initiatives. The research results indicate that 51% of middle-level managers had 10 years or more experience within the telecommunications industry.

Table 6: Distribution of years worked by respondents (n=172)

Years Worked	Count	Percentage
3 years or less	**10**	6%
4-6 years	**16**	9%
7-9 years	**58**	34%
10 years or more	**88**	51%
Total	**172**	**100%**

Figure 13: Years worked by respondents



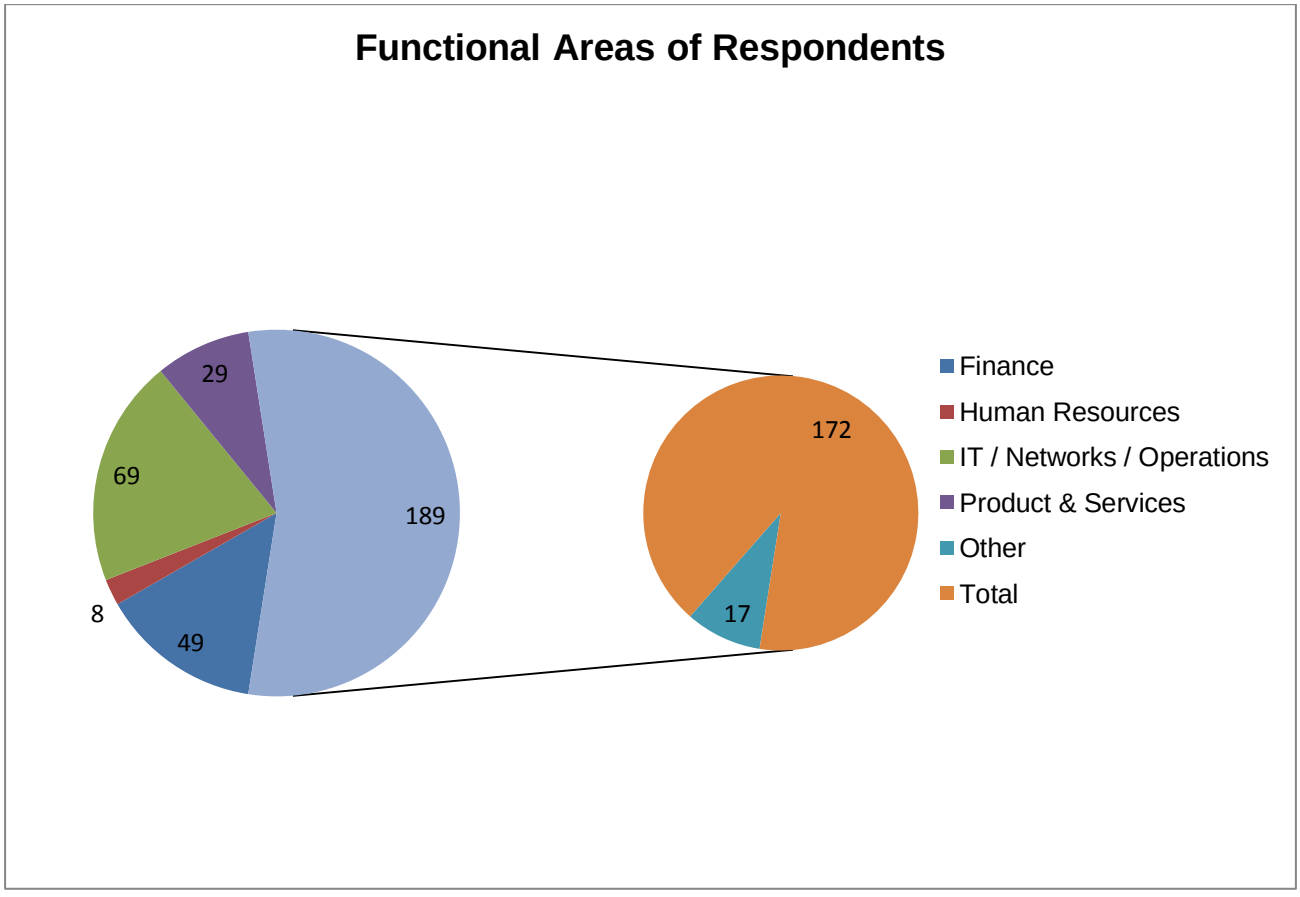
Functional areas of the respondents

It is not surprising that 40% of the respondents were from the IT / Networks / Operations departments, a key focus area of the telecommunications industry within South Africa. Another key focus area within the telecommunications industry is the finance department, closely linked to the credit vetting of applications. Analysis of both consumer and business applications is the core function of the finance department and responsible lending is paramount to the financial stability of the industry.

Table 7: Distribution of functional areas of respondents (n=172)

Division	Count	Percentage
Finance	49	28%
Human Resources	8	5%
IT / Networks / Operations	69	40%
Product & Services	29	17%
Other	17	10%
Total	**172**	**100%**

Figure 14: Functional areas of respondents



4.2.2 Statistical analysis of the variables

Structural equation modelling (SEM) is one of the most important quantitative techniques in research today, gaining widespread use and popularity in many research areas including management studies, medicine, biology, sociology, psychology, education, and engineering (Lee, 2014). Results of this research are based on various tables within SEM. Corporate Entrepreneurship were measured using a 7-pont Likert-type scale, where high scores reflect high values on the construct.

Table 8: Summary of fit data

Indices obtained from Structural Equations Analysis model 1 (N=172)

The CALIS Procedure

Covariance Structure Analysis: Maximum Likelihood Estimation

Fit Summary

Absolute Index	**Chi-Square**	**1096.9979**
	Chi-Square DF	145
	Pr > Chi-Square	<.0001
	Standardized RMR (SRMR)	0.1262
Parsimony Index	RMSEA Estimate	0.1657
	RMSEA Lower 90% Confidence Limit	0.1567
	RMSEA Upper 90% Confidence Limit	0.175
	Akaike Information Criterion	1186.9979
	Bozdogan CAIC	1388.6267
	Schwarz Bayesian Criterion	1343.6267
Incremental Index	Bentler Comparative Fit Index	0.584
	Bentler-Bonett Non-normed Index	0.5095

The fit table compare the actual data covariance to the predicted covariance produced by the SEM model. The chi-square statistic, which has a p-value, is the most basic measure of whether the actual and predicted covariances are similar.

A significant p-value suggests significant differences between the actual and predicted covariances, which is technically bad if true because you optimally want the actual and predicted covariances to be exactly equal (Lee, 2014). According to Hoyle (1995), the goodness-of-fit index is seen as the most common index of fit between the model and the data. Fit indices varying between 1.0 and 0.90 are commonly seen as acceptable indices for a model to be viewed as consistent with the estimated data (Hoyle, 1995). The indices in figure 1 therefore indicate a good fit with the data with a high level of parsimony.

The results of the chi-square conclude that the chi-square statistic values for all the variables are large and the corresponding p-values are small, an indication that the proposed theory does not fit reality well. The RMSEA index values for all the variables and second order are all greater than 0.05, indicating a weak model fit. The p-value (which in table 5 is designated the Pr > Chi-Square). The p-values give the researcher definite cut-offs, a benchmark to evaluate the significance of by the measurement, i.e. if the p-value is less than .05. It will have statistical significance to the findings of the research.

If the p-value is low enough in the research, i.e. it is <.0001, then it can be concluded that a straight line fits the data sufficiently to continue with the study. In table 5 the p-value is <.0001, which is lower than .05 or even .01, we can say that based on the

estimates of error, this Chi-Square statistic is significant at a level of .01, giving the researcher one extra basis for accepting that a straight line fits the data. Taking into account the indices in table 5, it can be stated that the causal model indicates a good fit with the data.

Table 9: Satisfaction Cronbach Analysis

T -Test Analysis of the variables (n=172)

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
Q7	172	6.12209	1.10933	1053	1	7
Q8	172	5.70349	1.30648	981	1	7
Q11	172	3.78488	1.92709	651	1	7
Q12	172	3.83721	2.07948	660	1	7
Q13	172	5.77326	1.16518	993	1	7
Q14	172	5.70349	1.10786	981	2	7
Q15_Innovation	172	5.6686	1.23807	975	1	7
Q16_Performance	172	5.47093	1.39098	941	1	7
Q17_Risk_taking	172	5.96512	1.12336	1026	2	7
Q18	172	5.80814	1.21074	999	2	7
Q19	172	5.73256	1.315	986	1	7
Q20	170	5.68235	1.26127	966	1	7
Q21_Proactiveness	172	5.47093	1.277	941	1	7
Q23_Innovation_3	172	6.27907	1.0885	1080	1	7
Q24	172	5.47674	1.35704	942	1	7
Q25	172	5.0814	1.56134	874	1	7
Q26	172	5.78488	1.19707	995	1	7
Q27	172	4.94186	1.78594	850	1	7
Q28	172	5.97674	1.30206	1028	1	7
Q29	172	5.80233	1.10628	998	1	7

Correlation analysis indicates the strength of the linear association. It is a measurement between -1 and +1. If the correlation is +1 there will be a perfect positive linear association and the scores between 0 and +1 indicate how close to

positive linearity the analysis will get. A correlation of -1 indicates perfect negative linear associations and an association close to zero indicates no linear association. Means is a measurement where the research will establish weather a quantitative dependent variable differs across various possible categories in one or more categorical variable. This method of analysis wants to compare whether a certain dependent variable differs between multiple independent groups of observations. The reason for comparisons in groups is that a set of discrete categorical groupings in the data are the cause of differences in some other continuous dependent variable. The research can test whether a dependent variable will differ between groups; this can be tested in isolation.

This research tested whether the independent variables: innovation, performance, risk taking and pro-activeness have an impact on the dependent variable - entrepreneurial orientation (H1, H2, and H3). The t-test will allows for a statistical significance test for whether the difference in the mean is large. The aim is to assess whether the difference in the mean is zero which is an indication that the independent variables do not differ significantly on the dependent variable.

Table 8 presents the descriptive statistics of the independent variables to be used in testing the researcher's model. There is no significant difference between the mean scores of innovation, performance, risk taking, and pro-activeness (independent variables), the mean scores range between 5 and 6. The standard deviation scores are also consistent amongst the independent variables (a midpoint value of 1.2). The mean values of the scales are all close to the scale midpoint value of 5.8. The midpoint value is considered as a neutral point with values greater than 5.8 indicative

of respondents' positive perceptions of the entrepreneurial orientation of their organisation. It appears that the mean entrepreneurship scores of the telecommunications industry tend to range from somewhat higher than neutral, towards positive or high. The differences in the means amongst the independent variables are effectively zero concluding that the independent variables do not differ significantly on the dependent variable (entrepreneurial orientation).

Table 10: Entrepreneurial Orientation Cronbach Analysis (n=172)

2 Variables: Q9_EO1 Q10_EO2						
Simple Statistics						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
Q9_EO1	172	5.97674	1.08122	1028	1	7
Q10_EO2	172	5.9186	1.17692	1018	1	7
Pearson Correlation Coefficients, N = 172						
Prob > |r| under H0: Rho=0						
		Q9_EO1	Q10_EO2			
	Q9_EO1	1	0.76596			
			<.0001			
	Q10_EO2	0.76596	1			
		<.0001				

Table 9 represents the descriptive statistics of the dependent variable (OE) to be used to test the researcher's model. There is no significant difference between the mean scores of Q9 and Q10 (entrepreneurial orientation). The average mean scores for both questions are 5.9. The standard deviation scores are consistent (similar to

table 6 – tested the independent variables). There is a strong correlation between EO, dependent variable and its underlying constructs. The correlation of EO is 1 in Q9 and also 1 in Q10 (which is a perfect linear relationship). The dependent variable is perfectly associated with itself.

There is supportive evidence of the construct validity of EO.

Table 11: Mean score correlation (n=172)

The CORR Procedure						
4 Variables: Q11 Q12 Q13 Q14						
Simple Statistics						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
Q11	172	3.78488	1.92709	651	1	7
Q12	172	3.83721	2.07948	660	1	7
Q13	172	5.77326	1.16518	993	1	7
Q14	172	5.70349	1.10786	981	2	7

Table 10 compares the means scores for Q11, Q12, Q13, and Q14. The mean scores for Q11 and Q12 are lower than the mean scores for Q13 and Q14 with an average mean score of 4.7. Q11 and Q12 are below the average mean score of 4.7, indicative that there is a difference between the pair of questions. The average standard deviation for Q11, Q12, Q13, and Q14 is 1.6 stating that there is no significant difference between the standard deviation scores.

Table 12: Comparison analysis of the dependent and independent variables (n=172)

Simple Statistics						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
Q7	172	6.12209	1.10933	1053	1	7
Q8	172	5.70349	1.30648	981	1	7
Q9_EO1	172	5.97674	1.08122	1028	1	7
Q10_EO2	172	5.9186	1.17692	1018	1	7
Q11	172	3.78488	1.92709	651	1	7
Q12	172	3.83721	2.07948	660	1	7
Q13	172	5.77326	1.16518	993	1	7
Q14	172	5.70349	1.10786	981	2	7
Q15_Innovation	172	5.6686	1.23807	975	1	7
Q16_Performance	172	5.47093	1.39098	941	1	7
Q17_Risk_taking	172	5.96512	1.12336	1026	2	7
Q18	172	5.80814	1.21074	999	2	7
Q19	172	5.73256	1.315	986	1	7
Q20	170	5.68235	1.26127	966	1	7
Q21_Proactiveness	172	5.47093	1.277	941	1	7
Q22_Innovation_2	172	6	1.21395	1032	1	7
Q23_Innovation_3	172	6.27907	1.0885	1080	1	7
Q24	172	5.47674	1.35704	942	1	7
Q25	172	5.0814	1.56134	874	1	7
Q26	172	5.78488	1.19707	995	1	7
Q27	172	4.94186	1.78594	850	1	7
Q28	172	5.97674	1.30206	1028	1	7
Q29	172	5.80233	1.10628	998	1	7
Q30_Performance	172	5.67442	1.20856	976	1	7

Table 13: Comaprisons of the indepenedent variables						
Simple Statistics						
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
Q15_Innovation	172	5.6686	1.23807	975	1	7
Q16_Performance	172	5.47093	1.39098	941	1	7
Q17_Risk_taking	172	5.96512	1.12336	1026	2	7
Q21_Proactiveness	172	5.47093	1.277	941	1	7
Q22_Innovation_2	172	6	1.21395	1032	1	7
Q23_Innovation_3	172	6.27907	1.0885	1080	1	7
Q30_Performance	172	5.67442	1.20856	976	1	7

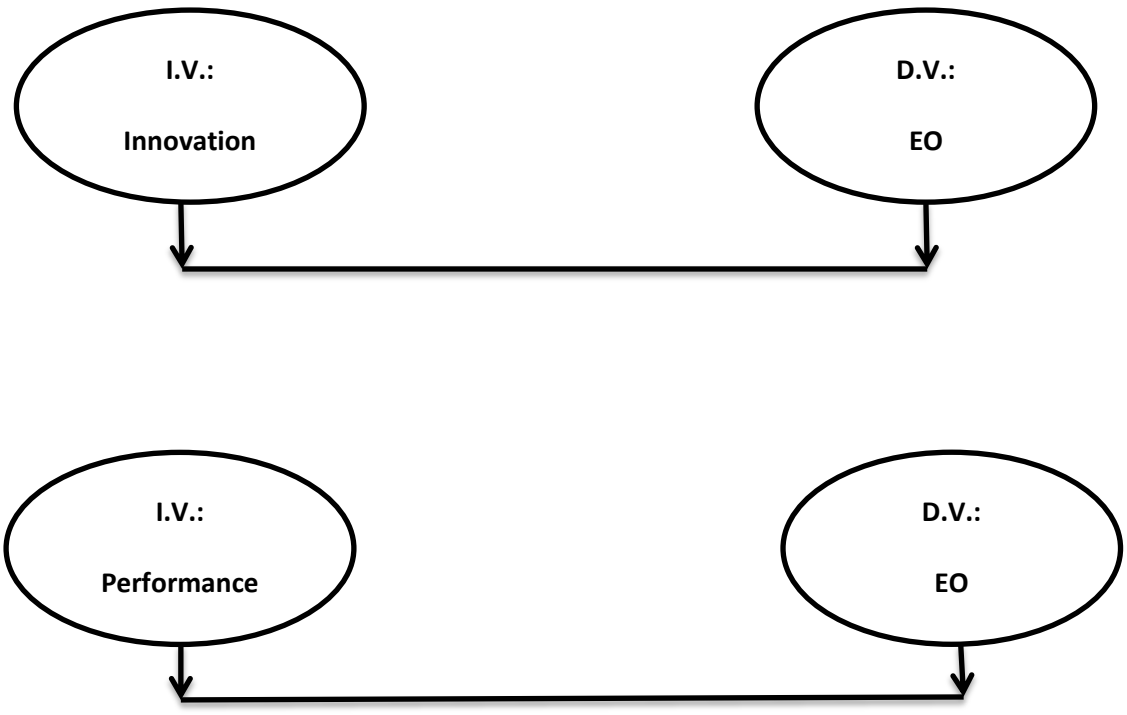
Table 11 compare the mean scores of the dependent variable (entrepreneurial orientation) with the mean scores of the independent variables (innovation, performance, risk taking, and pro-activeness) to establish if there is a causal link between the two variables. Table 12 have the same comparison but only compares the mean scores of the independent variables. The average mean score for the dependent variable is 5.9 and the average mean score for the independent variables is 5.7. The difference in the means between the dependent variable and the independent variables is 0.2. The aim in any t-test is to establish if the difference in the means is zero. The confidence interval for the difference will tell the researcher whether to accept or reject the proposition. If the interval lies entirely above or below zero, the researcher can conclude that the means are significantly different. This research has a difference of 0.2 between the dependent variable and the independent variables which is effectively zero. The average standard deviation score of the dependent variable is 1.2 compared to the average standard deviation score of the independent variables 1.2; the difference between the two variables is

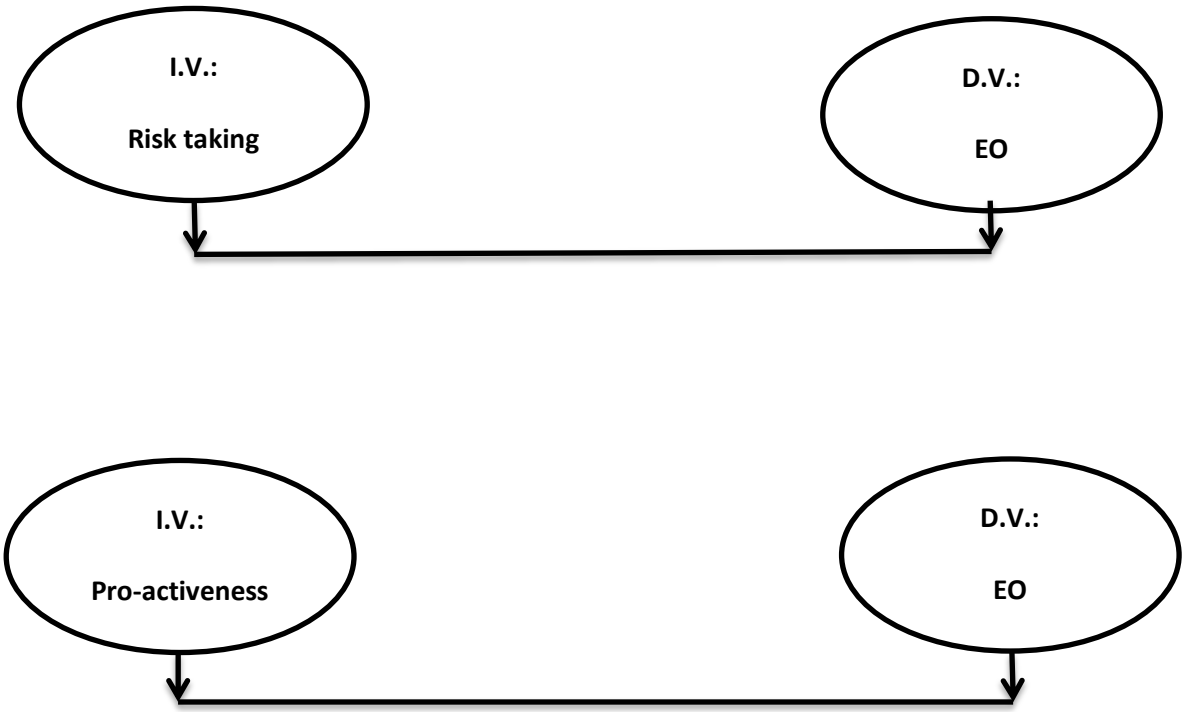
zero. There is no significant difference between the standard deviation scores of the dependent variable and the independent variables. The proposition is therefore accepted thus supporting H1, H2, and H3.

Covariance arrows in SEM

Covariances are the basis for both multiple regression and SEM. It is fair to say that covariances are the heartland of SEM (Lee, 2014). The only data that SEM needs is the covariance between each variable; no information is actually required to run an analysis. An important reminder is that association does not prove causality just which two variables happen to occur in some relatively synchronised way (Lee, 2014). The basis for SEM model is the presentation of the researcher's pre-conceived ideas about how the variables relate to one another.

Figure 15: Correlation between variables (Lee, 2014)





Covariances are the correlations scaled for the standard deviations of the variables (Lee, 2014). In table 8 we concluded that there are no significant differences between the standard deviation scores of the dependent variable (entrepreneurial orientation) and the independent variables (innovation, performance, risk taking, and pro-activeness). There is a strong correlation between entrepreneurial orientation as the dependent variable and the four dependent variables supporting the evidence of the construct validity of EO. A correlation does exist between the dependent variable and the independent variables (Figure 5) confirming H1, H2, and H3 of the research.

Table 14: Pearson Correlation Coefficients, N = 172												
Prob > |r| under H0: Rho=0												
Column1	Q7	Q8	Q9_EO1	Q10_EO2	Q15_Innovation	Q16_Performance	Q17_Risk_taking	Q21_Proactiveness	Q22_Innovation_2	Q23_Innovation_3	Q30_Performance	
Q7	1	0.64651	0.63621	0.63921	0.30214	0.48173	0.53371	0.49996	0.60795	0.43655	0.43984	
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	
Q8	0.64651	1	0.54155	0.53568	0.42336	0.4731	0.44715	0.54687	0.57889	0.46975	0.48664	
	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	
Q9_EO1	0.63621	0.54155	1	0.76596	0.39175	0.49337	0.58191	0.5247	0.5391	0.4279	0.50883	
	<.0001	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	
Q10_EO2	0.63921	0.53568	0.76596	1	0.52319	0.50937	0.5994	0.62876	0.50755	0.4378	0.5034	
	<.0001	<.0001	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	
Q15_Innovation	0.30214	0.42336	0.39175	0.52319	1	0.60731	0.53826	0.55425	0.38131	0.46392	0.46291	
	<.0001	<.0001	<.0001	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	
Q16_Performance	0.48173	0.4731	0.49337	0.50937	0.60731	1	0.66177	0.59542	0.52295	0.39935	0.50918	
	<.0001	<.0001	<.0001	<.0001	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001	
Q17_Risk_taking	0.53371	0.44715	0.58191	0.5994	0.53826	0.66177	1	0.55778	0.60894	0.51018	0.50847	
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001		<.0001	<.0001	<.0001	<.0001	
Q21_Proactiveness	0.49996	0.54687	0.5247	0.62876	0.55425	0.59542	0.55778	1	0.66393	0.56121	0.64936	
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001		<.0001	<.0001	<.0001	
Q22_Innovation_2	0.60795	0.57889	0.5391	0.50755	0.38131	0.52295	0.60894	0.66393	1	0.68155	0.55006	
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001		<.0001	<.0001	
Q23_Innovation_3	0.43655	0.46975	0.4279	0.4378	0.46392	0.39935	0.51018	0.56121	0.68155	1	0.48289	
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001		<.0001	
Q30_Performance	0.43984	0.48664	0.50883	0.5034	0.46291	0.50918	0.50847	0.64936	0.55006	0.48289	1	
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001		

N=172, findings within the research must be treated with caution.

Interpretation for table 13:

- 6 – 10% is seen as a useful conceptual correlation
- 11 – 15% is seen as a moderate conceptual correlation
- 16 – 24% is seen as a high conceptual correlation
- >25% is seen as a very high conceptual correlation

H1: There is a strong correlation between entrepreneurial orientation and innovativeness amongst middle-level managers within organisations.

The first research problem investigates the significant relationship between entrepreneurial orientation and innovation (H1).

- The common variance between Q15, innovation, and Q9 + Q10, entrepreneurial orientation is 39% (0.39) and 52% (052).
- The common variance between Q22, innovation, and Q9 + Q10, entrepreneurial orientation is 54% (0.54) and 51% (0.51).
- The common variance between Q23, innovation, and Q9 + Q10, entrepreneurial orientation is 43% (0.43) and 44% (0.44).

Conclusion: The relationship between entrepreneurial orientation and innovation is modest to average. The relationship between entrepreneurial orientation and innovation is stronger at Q22, 54% and 51% respectively. The relationship between the two variables is minimal at Q15, 39% and 52%, although an increase to 52% is evident. There is minimal increase in the explained variances of innovation generation (Q15 = 13% increase, Q22 = 3% decrease, and Q23 = 1% increase).

Innovativeness is positively related to EO. If an organisation is serious about developing its internal environment to promote entrepreneurial activity then it must seek to measure the specific dimensions associated with an innovative environment (Kuratko, Hornsby, and Covin, 2014). The Corporate Entrepreneurship Assessment Instrument (CEAI) tool developed by Hornsby, Kuratko, and Zahra (2002), assess the five major dimensions critical to creating an entrepreneurial innovative environment. Innovation is now widely recognised as the path to competitive

advantage and success in organisations of all types and sizes (Kuratko et al., 2012). A sustainable Corporate Entrepreneurship strategy will drive organisations towards innovation needed to operate in the challenging global economy (Kuratko, 2009). Innovation assists organisations to be ahead of their competitors, gaining competitive advantage that leads to improved financial results. Innovative behaviour within an organisation enhances its entrepreneurial orientation, hence, a positive correlation between the independent (innovation) and dependent variable (entrepreneurial orientation).

H2: Middle-level managers perceive that there is a strong relationship between entrepreneurial orientation and organisational performance.

The second research problem investigates the significant relationship between entrepreneurial orientation and organisational performance (H2).

- The common variance between Q16, organisational performance and Q9 + Q10, entrepreneurial orientation, is 49% (0.49) and 51% (0.51).
- The common variance between Q30, organisational performance, and Q9 + Q10, entrepreneurial orientation, is 51% (0.51) and 50% (0.50).

Conclusion: There is support for H2 that moderates the relationship between entrepreneurial orientation and organisational performance. The relationship between entrepreneurial orientation and organisational performance is strong at Q16 (51%), and Q30 (51%). There is minimal change in the explained variance of organisational performance at Q16 – a 2% increase. There is a 1% decrease in the explained variance of organisational performance at Q30.

The thrust argument for a positive influence of EO on performance is related to the first-mover advantages and the tendency to take advantage of emerging opportunities implied by EO (Wiklund, 2000). Zahra (1991) found a positive and growing correlation between Corporate Entrepreneurship and performance during three consecutive years. Zahra and Covin (1995) produced more solid findings and were able to show that EO influenced performance during each year of the five years studied. The research findings suggest a positive relationship between EO and performance. The results also corroborate the findings from previous research and provide additional grounding for statements about the positive effects of EO (Wiklund, 2000). The results of this study suggest that EO contributes to both growth and financial performance thereby, affirming a research study conducted by Zahra, 1993b; Zahra and Covin, 1995.

H3: There is a strong correlation between middle-level managers who incorporates risk taking and pro-activeness within their organisations and entrepreneurial orientation.

The third research problem investigates the significant relationship between entrepreneurial orientation, risk taking and pro-activeness (H3).

- The common variance between Q17, risk taking, and Q9 + Q10, entrepreneurial orientation, is 58% (0.58) and 60% (0.60).
- The common variance between Q21, pro-activeness, and Q9 + Q10, entrepreneurial orientation, is 52% (0.52) and 63% (0.63).

Conclusion: The relationship between entrepreneurial orientation and risk taking is even stronger at 60%, and the relationship between entrepreneurial orientation and pro-activeness is also stronger at 63%. There is minimal change in the explained variance of risk taking at Q17, 2%. There is a significant change in the explained variance of pro-activeness at Q21, 9%.

According to Miller (1983), Covin and Slevin (1991), EO can be defined as implying the presence of organisational behaviour reflecting risk taking, innovativeness, and pro-activeness. Consistent with Lumpkin and Dress (1996) definition of EO and Covin and Slevin's (1991, p. 8) assertions involving this phenomena, organisational behaviour is regarded as the means through which an EO can be recognised (Ireland, Covin, and Kuratko, 2009). The pursuit of entrepreneurial opportunities necessitates the identification (being pro-active) of resources needed to convert the entrepreneurial concept into a business reality (Kuratko, Ireland, Covin, and Hornsby, 2005). Knowing which resources will be needed to pursue any given entrepreneurial opportunity will be difficult inasmuch as entrepreneurial initiatives tend to evolve in their scope, content, and focus as they develop (McGrath & MacMillan, 1995). Corporate Entrepreneurship is a type of pro-active behaviour through which organizations seek several outcomes such as the creation of a new organization, instigation of innovation, and strategic renewal (Sharma & Chrisman, 1999). Concluding that the independent variables (risk taking and pro-activeness) does have a positive relationship with the dependent variable (EO).

4.3 Summary of the results

The results chapter of the research present the data analysis according to the following headings: sample description, the measurement aspects of SEM, and

analysis of the results based on the model. The presentation of the results included graphs, data tables, and data figures to present the results of the data analyses performed. The results of the model confirmed the following in terms of the three hypotheses:

Hypothesis 1: The research hypothesis is supported, although, moderate to high. The results indicated a modest to strong linear relationship between EO and innovation. EO explained 39% and 52% respectively of the covariance in innovation. The highest common variance between innovation and EO is 54%.

Hypothesis 2: The research hypothesis is supported, although, indicates not a strong relationship. The results indicated that there is a linear relationship between EO and organisational performance. EO explained 49% and 51%respectively of the covariance in organisational performance. The highest common variance between organisational performance and EO is 51%.

Hypothesis 3: The research hypothesis is supported, i.e. a strong relationship exist. The results indicate that there is a strong linear relationship between EO and risk taking, and a strong linear relationship between EO and pro-activeness. EO explained 58% and 60% of the covariance in risk taking. EO also explained 52% and 63% of the covariance in pro-activeness. The highest common variance between risk taking and EO is 60%, and the highest common variance between pro-activeness and EO is 63%.

The research results supports H1, H2, and H3 indicating a correlation between the dependent variable (entrepreneurial orientation) and the independent variables (innovation, performance, risk taking, and pro-activeness).

Table 15: Summary of the results of the research hypothesis tests

Research Hypothesis	Description of path	Outcome
H1 A positive correlation exists between innovation within the telecommunications industry and entrepreneurial orientation (EO).	EO → Telecommunications industry innovation	Supported
H2 A positive correlation exists between organisational performance within the telecommunications industry and entrepreneurial orientation (EO).	EO → organisational performance within the telecommunications industry	Supported
H3 A positive correlation exist between risk taking and	EO → risk taking within the telecommunications industry	Supported

entrepreneurial orientation (EO) A positive correlation exist between pro-activeness and entrepreneurial orientation (EO)	EO → pro-activeness within the telecommunications industry	Supported

Chapter 5: Discussion, Conclusions, and Recommendations

5.1 Introduction

In this final chapter, the results of this study will be evaluated and interpreted with respect to the three hypothesis / research problems. Thereafter, the contributions of the present study, limitations of the study, and recommendations for future research will be made.

5.2 Discussion of the results

5.2.1 Statistical analysis of the study

The research used a quantitative approach which involved descriptive analysis for data collation. The analysis reveals for the entrepreneurial orientation (EO) scale above the midpoint scores across items for the telecommunications industry. This is based on the three independent variables that correlate to EO: innovativeness, organisation performance, risk taking and pro-activeness.

Innovation at Q15 is below the midpoint score (4) for the telecommunications industry; organisational performance, risk taking and pro-activeness are all above the midpoint scores. The total scores for EO are above the midpoint score (4), suggesting that middle-level managers has medium to high levels of EO.

Descriptive analysis reveals that innovativeness is above the midpoint score, but it is below the midpoint score at Q15, suggesting that middle-level managers have low to medium levels of innovation within the telecommunications industry. Middle-level managers have lower levels of innovation at Q15 within the telecommunications industry.

Conclusion: middle-level managers have low to medium levels of innovation within the telecommunications industry.

Descriptive analysis for organisational performance is above the midpoint score. Middle-level managers contribute towards an increase in organisational performance through entrepreneurial orientation initiatives. This suggests that middle-level managers within the telecommunications industry contribute towards organisational performance by incorporating corporate entrepreneurial strategies within their firms.

Conclusion: middle-level managers contribute towards an increase in firm performance.

The descriptive analysis for risk taking and pro-activeness is above the midpoint score for entrepreneurial orientation. The scores are above 50% for all the questions related to risk taking and pro-activeness. Middle-level managers who are risk averse and pro-active to incorporate Corporate Entrepreneurship strategies within their organisations contribute to an increase in firm performance.

Conclusion: middle-level managers within the telecommunications industry are risk averse and proactive.

The following relational hypotheses were tested:

Hypothesis 1: There is a strong correlation between entrepreneurial orientation and innovativeness amongst middle-level managers within organisations.

Hypothesis 2: Middle-level managers perceive that there is a strong relationship between entrepreneurial orientation and organisational performance.

Hypothesis 3: There is a strong correlation between middle-level managers who incorporates risk taking and pro-activeness within their organisations, and entrepreneurial orientation.

5.2.2 First Research Problem

The first research problem relates to the possible significant relationship between entrepreneurial orientation and innovativeness amongst middle-level managers within the telecommunications industry. Innovation amongst middle-level managers shows a negative (39%) to positive (52%) common covariance at Q15.

This shows a low to medium level of innovation amongst middle-level managers within the telecommunications industry. Higher levels of innovation exist amongst middle-level managers at Q22 (54%) and (51%) and at Q23 (43%) and (44%). This would mean that middle-level managers are innovative within the telecommunications industry.

This significant relationship between entrepreneurial orientation and innovativeness amongst middle-level managers within the telecommunications industry is confirmed by previous studies, Kuratko et al., 2005.

5.2.3 Second Research Problem

The second research problem states that middle-level managers perceive that there is a strong relationship between entrepreneurial orientation and organisational performance. The correlation matrix shows that organisational performance had a significant common variance of > 25%, seen in table 10. The common variance for organisational performance is between 49% and 51%. There is a correlation between entrepreneurial orientation and organisational performance.

Previous researchers, (Rauch, Wiklund, Lumpkin and Frese, 2001), reveal that there is a significant relationship between entrepreneurial orientation and organisational performance.

5.2.4 The Third Research Problem

The third research problem investigates the relationship between middle-level managers who incorporates risk taking and pro-activeness within their organisations, and entrepreneurial orientation. The common variances between risk taking and entrepreneurial orientation are strong (>25%) at Q17 – 58% and 60%, indicating that there is a correlation between being risk averse and entrepreneurial orientation.

The common variances between pro-activeness and entrepreneurial orientation are strong (>25%) at Q21 – 52% and 63%, indicating that there is a correlation between being proactive and entrepreneurial orientation. This is an indication of a positive relationship between risk taking and pro-activeness, and entrepreneurial orientation.

Previous studies by Lumpkin and Dress, (2009) and Lumpkin and Dress, (1996) confirms that there is a strong correlation between middle-level managers who incorporates risk taking and pro-activeness within their organisations and entrepreneurial orientation.

5.3 Contributions of the study

This research contributes towards current literature on Corporate Entrepreneurship. This study builds on the Model of Middle-level Managers Entrepreneurial Behaviour, (Kuratko, Ireland, Covin, and Hornsby, 2005). The study contributes to the body of

knowledge of entrepreneurship by identifying a set of constructs that should be present for Corporate Entrepreneurship to occur. The results of this study also show the importance of middle-level managers in the Corporate Entrepreneurship strategy of the firm. It is crucial for firms that middle-level managers support Corporate Entrepreneurial initiatives and that Corporate Entrepreneurship is supported by the firm's policies. This study focussed on Corporate Entrepreneurship within the telecommunications industry in South Africa; the important role middle-level managers play in Corporate Entrepreneurship within this industry.

The study contributed to the literature of Corporate Entrepreneurship by focusing on the role of middle-level managers on the corporate entrepreneurial strategy of the firm. The study also contributed towards previous studies, e.g. Hornsby, J.S., Kuratko, D.F. and Zahra, S.A. (2002): Middle managers' perception of the internal environment for Corporate Entrepreneurship: assessing a measurement scale. The study provided an understanding of what motivates middle-level managers to create a culture of entrepreneurship within their organisations.

The focus of previous research has been based on a generalisation of Corporate Entrepreneurship within organisations, however, this research focused on the specific impact of middle-level mangers on the corporate entrepreneurial strategy within the telecommunications industry.

A research report by Thokozani Nkosi (Wits 2011) focused on Corporate Entrepreneurship and organisational performance in the Information and Communications Technology Industry: focusing primarily on the impact of Corporate Entrepreneurship on the performance of the organisation. This research differed by concentrating on the managerial aspect within an organisation and how it impacted

the Corporate Entrepreneurial strategy. This study that concentrated on the important role middle-level manager's play in the relationship between top-level managers and operational-level managers, will add value to current studies.

The research findings states that there is a low to medium correlation between EO and innovation, providing support for the proposition that if organisations are to be innovative, they need EO. This study also found that middle-level managers who are innovative, contribute to an increase level of Corporate Entrepreneurship within their firms. Overall, this finding suggests that the telecommunications industry must invest in creating a culture of innovation amongst middle-level managers.

This research also shows a medium to strong relationship between organisational performance and entrepreneurial orientation. The results suggest that Corporate Entrepreneurship initiatives within the telecommunications industry in South Africa lead to an increase in organisation performance. The research has revealed the importance of entrepreneurial orientation (EO) in organisational performance, and provides additional support that there is a strong positive effect of EO on organisational performance (Zahra and Covin 1995; and Covin and Slevin 2008). Corporate Entrepreneurship initiatives are a key driver for an increase in firm performance within the telecommunications industry. The results of this study show that the South African telecommunications industry regulatory framework has low to medium regulatory factors present to create a culture of innovation.

The results further revealed that there is a strong correlation between middle-level managers who incorporate risk taking and pro-activeness within their firms, and entrepreneurial orientation. There is a positive moderation effect for regulation on the relationship between risk taking and pro-activeness within the telecommunications

industry. The finding is in line with the expectation of the researcher that a positive moderation result exists between middle-level managers who incorporate risk taking and pro-activeness within their organisations, and EO.

The literature supports the view that there is a correlation between the independent variables (innovation, performance, risk taking, and pro-activeness) and the dependent variable (entrepreneurial orientation).

The study supports the three hypotheses:

Hypothesis 1: There is a strong correlation between entrepreneurial orientation and innovativeness amongst middle-level managers within organisations.

Hypothesis 2: Middle-level managers perceive that there is a strong relationship between entrepreneurial orientation and organisational performance.

Hypothesis 3: There is a strong correlation between middle-level managers who incorporates risk taking and pro-activeness within their organisations, and entrepreneurial orientation.

5.4 Implications for the telecommunications industry

The findings of this research have various implications for the telecommunications industry within South Africa; 1) to ensure that the telecommunications industry has the relevant internal innovation strategies in place to drive innovation amongst middle-level managers, 2) to ensure that their firms' key focus is to drive entrepreneurial orientation initiatives that will ensure that firm's performance increase, 3) to implement strategies that allow middle-level managers to be free to

take calculated risks and be pro-active to create a culture of Corporate Entrepreneurship.

Regulation also needs to be adopted to ensure and assist the telecommunications industry to develop Corporate Entrepreneurship strategies within their firms. The driver for pro-entrepreneurship within the telecommunications industry is senior executives within these firms. Top-level executives must implement strategies that will create a culture of entrepreneurship within their organisations and ensure that it is implemented by middle-level managers.

The regulator can assist telecommunications industry by:

- Assisting the telecommunications industry with support in how to implement Corporate Entrepreneurship initiatives
- Creating a reward system for firms that successfully implement Corporate Entrepreneurship strategies
- Providing cost saving incentives for the industry (e.g. lower mobile terminations rates for companies that ensure that Corporate Entrepreneurship initiatives are part of its vision and key strategic objective).
- Investing in the development of new technology and infrastructure development.

The telecommunications industry has low levels of strategic regulatory factors present in South Africa. The telecommunications industry is viewed as a critical component in driving growth within South Africa; an ideal would be to drive growth through entrepreneurship.

5.5 Limitations of this study

The research will be limited to telecommunications companies in South Africa with the focus on middle-level managers. The South African context of the study limits the generalizability of the research findings. This study will only focus on the impact of middle-level management on the Corporate Entrepreneurial strategies within the telecommunications industry. It will exclude other employees that do have an impact on the Corporate Entrepreneurial strategy.

The results of this study cannot be used outside of South Africa; the study is limited to South Africa and should not be generalised to other telecommunications companies outside of South Africa. The disadvantage of the methodological strategy is that the sample of the online questionnaires taken should have comprised a very large sample, there was no guarantee in getting all respondents to complete the online questionnaire and the quality of the answers may not be absolutely accurate. The study used a quantitative research method, positivism, observations may involve error and the theory can be modified, and reality cannot be known with certainty.

5.6 Recommendations for future research

Future studies should investigate the measured variables in countries outside of South Africa and a wider area of business sectors. Future research should also explore the causal relationship between entrepreneurial orientation and job satisfaction amongst middle-level managers within the telecommunications industry. The study did not specify the impact of culture amongst middle-level managers and the impact culture has on their entrepreneurial orientation. South Africa has a rich

cultural diversity and this provides an opportunity to do research on the impact of cultural diversity on Corporate Entrepreneurship.

Broad Based Black Economic Empowerment (BBBEE) is a key policy of government to ensure the participation of all races within the South African economy. Future research could focus on the important relationship between Corporate Entrepreneurship and BBBEE, and how companies can use Corporate Entrepreneurship to embrace BBBEE.

This study focused on the role of middle-level managers on Corporate Entrepreneurship within the telecommunications industry. Future research can focus on all three levels of management (top-level management, middle-level management, and lower-level management), or focus on top-level or lower-level managers.

The research did not focus on the impact of regulation on the implementation of Corporate Entrepreneurship strategies within the telecommunications industry. The impact of regulation on Corporate Entrepreneurship within the telecommunications industry should be explored further.

References

Aloulou, W. & Fayolle, A. (2005). A conceptual approach of entrepreneurial orientation within small business context. Journal of Enterprising Culture, 13, 21-45.

Antoncic, B. & Hisrich, R. D. (2001). Intrapreneurship: Construct refinement and cross cultural validation. Journal of Business Venturing, 16, 495-527.

Antoncic, B. & Hisrich, R. D. (2004). Corporate Entrepreneurship contingencies and organizational wealth creation. Journal of Management Development, 23, 518-550.

Alterowitz, R. (1988). New Corporate Ventures. Wiley, New York

Baden-Fuller, C. (1995). Strategic innovation, Corporate Entrepreneurship and matching outside-in to inside-out approaches to strategy research. Br. J. Manage. 6, S3–S16

Barringer, M.S., Milkovich, G.T. (1998). A theoretical exploration of the adoption and design of flexible benefit plans: a case of human resource innovation. Acad. Manage. Rev. 23, 305–324

Bartlett, C.A., Ghoshal, S. (1993). Beyond the m-form: toward a managerial theory of the firm. Strategic Manage. J. 14, 23–45

Bloch, C. (2007). Assessing recent developments in innovation measurement: the third edition of the Oslo Manual. Science & Public Policy, 34, 23-34.

Branzei, O. & Vertinsky, I. (2006). Strategic pathways to product innovation capabilities in SMEs. Journal of Business Venturing, 21, 75-105.

Burgelman, R.A. (1983b). Corporate Entrepreneurship and strategic management: insights from a process study. Manage. Sci. 29, 1349–1363

Burgelman, R.A. (1984). Designs for Corporate Entrepreneurship. Calif. Manage. Rev. 26, 154–166

Burgelman, R.A., Sayles, L.R. (1986). Inside Corporate Innovation: Strategy, Structure, and Managerial Skills

Collins, C., Locke, E., & Hanges, P. (2000). The relationship of need for achievement to entrepreneurial behaviour: a meta-analysis

Cooper, A., Woo, C., & Dunkleberg, W. (1989). Entrepreneurship and the initial size of firms. Journal of Business Venturing, 3, 97–108

Cooper, D. R. Schindler, P. S. (2008) Business Research Methods, tenth edition, McGraw-Hill, New York

Corman, J., Perles, B., & Vancini, P. (1988). Motivational factors influencing high-technology entrepreneurship. Journal of Small Business Management, 26, 36–42

Covin, J. G., Ireland, R. D. & Kuratko, D. F. (2003). The exploration and exploitation functions of corporate venturing. Paper presented at the Academy of Management meetings. Seattle, WA.

Covin, J. G. & Slevin, D. P. (1989). Strategic planning of small firms in hostile and benign environments. Strategic Management Journal, 10, 75-87.

Covin, J.G., Miles, M.P. (1999). Corporate Entrepreneurship and the pursuit of competitive advantage. Entrepreneurship Theory Pract. 23 (3), 47–64

Covin. J. G., & Slevin, D. P. (1988). The influence of organization structure on the utility of an entrepreneurial

Creswell, J.W. (2003) Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (2nd edition)

Creswell, J.W., Plano Clark, V.L., Gutman, M.L. and Handson, W.E. (2003) 'Advanced Mixed Methods Research Designs', in A. Tashakkori and C. Teddlie (eds) Handbook of Mixed Methods in Social and Behavioural Research

Damanpour, F. & Wischnevsky, J. D. (2006). Research on innovation in organisations: distinguishing innovation-generating from innovation-adopting organisations. Journal of Engineering and Technology Management, 23, 269-291.

Damanpour, F. (1991). Organizational innovation: a meta-analysis of effects of determinant and moderators. Acad. Manage. J. 34, 55–390

Das, T.K., Teng, B.S. (1997). Time and entrepreneurial risk behaviour. Entrepreneurship Theory Pract. 22, 69–88

Dress, G. G., Ireland, R. D., Zahra, S. A., Floyd, S. W., Janney, J. J. & Lane, P. J. (2003). Emerging Issues in Corporate Entrepreneurship. Journal of Management, 29, 351-378.

Dress, G. G. & Lumpkin, G. T. (2005). The Role of Entrepreneurial Orientation in Stimulating Effective Corporate Entrepreneurship. Academy of Management Executive, 19, 147-156.

Dress, G.G., Lumpkin, G.T., McGee, J.E. (1999). Linking Corporate Entrepreneurship to strategy, structure, and process: suggested research directions. Entrepreneurship Theory Pract. 23 (3), 85–102

Dress, G. G., Lumpkin, G. T. & Covin, J. G. (1997). Entrepreneurial strategy making and firm performance. Strategic Management Journal, 18, 677-695.

Drucker, P.F. (1985). The discipline of innovation. Harv. Bus. Rev. 63, 67–72

Evans, D., & Leighton, L. (1989). Some empirical aspects of entrepreneurship. American Economic Review, 79, 519–535

Evans, J. R. (2010) Statistics, Data Analysis, and Decision Modelling, fourth edition, Pearson Education, New Jersey

Floyd, S.W. & Lane, P.J. (2000). Strategizing throughout the organization: Managing role conflict in strategic renewal. Academy of Management Review, 25, 154–177

Floyd, S.W. & Wooldridge, B. (1990). The strategy process, middle management involvement, and organizational performance. Strategic Management Journal, 11, 231–242

Floyd, S.W. & Wooldridge, B. (1992). Middle management involvement in strategy and its association with strategic type. Strategic Management Journal, 13, 53–168

Fini, R. Grimaldi, R. Marzorcchi, G. L. and Sobrero, M. (2010) The Determinants of Corporate Entrepreneurial Intention within Small and Newly Established Firms, Entrepreneurship theory and Practice, 34(6), 1-28

Gartner, W. (1985). A conceptual framework for describing the phenomenon of new venture creation. Academy of Management Review, 10(4), 696–706

Gatignon, H. & Vosgerau, J. (2005). Moderating effects: The myth of mean centering. In: INSEAD (ed.). Fontainebleau Cedex, France: INSEAD Faculty and Research.

Gillwald, A. (2003a). Transforming telecom reform for development. Paper presented at IDRC meeting, ICT for poverty alleviation, Harvard University, Cambridge, MA

Ginsberg, A., Hay, M. (1994). Confronting the challenges of Corporate Entrepreneurship: guidelines for venture managers. Eur. Manage. J. 12, 82–389

Goedhuys, M. & Veugelers, R. (2011). Innovation strategies, process and product innovations and growth: Firm-level evidence from Brazil. Structural Change and Economic Dynamics, Article in Press.

Greene, J.C., Caracelli, V.J. and Graham, W.F. (1989) Toward a Conceptual Framework for Mixed-method Evaluation Designs', Educational Evaluation and Policy Analysis 11(3): 255–74

Green, K. M., Covin, J. G. & Slevin, D. P. (2008). Exploring the relationship between strategic reactiveness and entrepreneurial orientation: The role of structure-style fit. Journal of Business Venturing, 23, 356-383

Grunow, D. (1995). The Research Design in Organization Studies: Problems and Prospects', Organization Science 6(1): 93–103

Guth, W.D., Ginsberg, A. (1990). Corporate Entrepreneurship. Strategic Manage. J. 11, 5–15 (special issue)

Hanan, M. (1976). Venturing corporations; think small to stay strong. Harv. Bus. Rev. 54, 139–148

Hill, R.M., Hlavacek, J.D. (1972). The venture team: a new concept in marketing organizations. J. Mark. 36, 44–50

Hisrich, R.D., Peters, M.P. (1986). Establishing a new business venture unit within a firm. J. Bus. Venturing 1, 307–322

Hornsby, J.S. & Kuratko, D.F. (2003). The influence of entrepreneurial environment on job satisfaction, reinforcement practices and behaviours. Paper presented at the United States Association for Small Business and Entrepreneurship, Hilton Head, SC

Hornsby, J.S., Kuratko, D.F., & Montagno, R.V. (1999). Perception of internal factors for Corporate Entrepreneurship: A comparison of Canadian and U.S. managers. Entrepreneurship Theory and Practice, 24(2), 9–24

Hornsby, J.S., Kuratko, D.F., & Zahra, S.A. (2002). Middle managers' perception of the internal environment for Corporate Entrepreneurship: Assessing a measurement scale. Journal of Business Venturing, 17, 49–63

Independent Communications Authority of South Africa (ICASA). (2002). Settlement agreement entered into between the Independent Communications Authority of

South Africa and The Chairperson of the Independent Communications Authority of South Africa and Telkom SA Ltd

International Telecommunications Union. (2002). World Telecommunications Development Report 2002. Geneva: International Telecommunications Union

Intven, H. (2000). Telecommunications regulation handbook. Washington, DC: infoDev, World Bank

Ireland, D.R. Covin, J. G. and Kuratko, D. F. (2009) Conceptualizing Corporate Entrepreneurship Strategy, Entrepreneurship theory and Practice, 33(1), 19-46

Kanter, R.M. (1985). Supporting innovation and venture development in established companies. Journal of Business Venturing, 1, 47–60

Katz, J., Gartner, W.B. (1988). Properties of emerging organizations. Acad. Manage. Rev. 13, 429–441

Kreiser, P. M. and Davis, J. (2010) Entrepreneurial Orientation and Firm Performance: The unique impact of innovativeness, Pro-activeness, and Risk-taking. Journal of Small business and Entrepreneurship, 23(1), 39-51

Kuratko, D.F., Montagno, R.V., Hornsby, J.S. (1990). Developing an intrapreneurial assessment instrument for an effective corporate entrepreneurial environment. Strategic Manage. J. 11, 49–58

Kuratko, D. F. Hornsby, J.S. and Bishop, J. (2005) Manager's corporate entrepreneurial actions and job satisfaction. International Entrepreneurship and Management Journal, 1(3), 275-291

Kuratko, D. F. and Audretsch, D. B. (2009) Strategic Entrepreneurship: Exploring Different Perspectives of an Emerging Concept, Entrepreneurship and Theory in Practice, 33(1), 1-17

Lumpkin, G.T. & Dress, G.G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. Academy of Management Review, 21, 135–172

Lumpkin, G. T. Cogliser, C. C. and Schneider, D. R (2009) Understanding and Measuring Autonomy: An Entrepreneurial Orientation Perspective, Entrepreneurship and Theory in Practice, 33(1), 47-69

Makhaya, G., and Roberts, S. (2003). Telecommunications in developing counties: reflections from the South African experience

Maxwell, J.A. and Loomis, D.M. (2003) 'Mixed Methods Design: An Alternative Approach', in A. Tashakkori and C. Teddlie (eds) Handbook of Mixed Methods in Social and Behavioural Research, pp. 209–40

Melody, W. H., Currie, W., & Kane, S. (2003). Preparing South Africa for Information Society E-Services. Southern African Journal of Information and Communication, Link Centre, Graduate School of Public & Development Management, University of the Witwatersrand, Johannesburg

Miles, M. P. Munilla, L. S. and Darroch, J. (2008) Sustainable Corporate Entrepreneurship, International Entrepreneurship and Management Journal, 5(1), 65-76

Miller, D. (1983). The correlates of entrepreneurship in three types of firms. Management Science, 27, 770–791

Miller A. & Camp B. (1985). Exploring determinants of success in corporate ventures. Journal of Business Venturing, 1, 87–105

Monsen, E. and Boss, R. W. (2009). The Impact of Strategic Entrepreneurship inside the Organisation: Examining Job Stress and Employee Retention, Entrepreneurship and Theory in Practice, 33 (1), 71-104

Montgomery, D.C. Peck, E.A. and Vining, G.G. (2012). Introduction to Linear Regression Analysis, 5th edition

Morris, M.H. Kuratko, D.F. and Covin, J.G. (2008), Corporate Entrepreneurship and Innovation, 2nd edition

Rauch, A. Wiklund, J. Lumpkin, G. T. and Frese. M. (2009) Entrepreneurial Orientation and Business Performance: An Assessment of Past Research and Suggestions for the Future, Entrepreneurship theory and Practice, 33(3), 761-787
Republic of South Africa. (2001). Telecommunications Amendment Act.

Samarajiva, R. (2000b). Establishing the legitimacy of new regulatory agencies. Telecommunications Policy, 24, 183–187

Sappington, E. M., & Stiglitz, J. (1987). Information and regulation. In Elizabeth E. Bailey (Ed.), Public regulation: New perspectives on institutions and policies

Shane, S. & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. Academy of Management Review, 25, 217–226

Shepherd, D. A. Patzelt, H. and Haynie, J. M. (2010) Entrepreneurial spirals: Deviation-Amplifying loops of an Entrepreneurial mind set and Organisational Culture, Entrepreneurship and Theory in Practice, 32(1) 59-82
Stevenson, H.H. and Jarillo, J.C. (1990). A paradigm of entrepreneurship: Entrepreneurial management. Strategic Management Journal, 17-27
Schumpeter, J. A. (1934, 1954). The theory of economic development. Cambridge, MA: Harvard University Press

Venter, A. Rwigema, H. and Urban, B. (2008) Entrepreneurship: theory in practice, 2nd edition, Oxford University Press Southern Africa (Pty) Ltd, Cape Town
World Wide Worx. (2002). Internet Access in South Africa
Wiklund, J. (1999). The sustainability of the entrepreneurial orientation-performance relationship. Entrepreneurship Theory and Practice, 24, 37-48.

Wiklund, J. & Shepherd, D. A. (2003). Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses. Strategic Management Journal, 24, 1307-1314.

Wiklund, J. & Shepherd, D. A. (2005). Entrepreneurial orientation and small business performance: A configurational approach. Journal of Business Venturing, 20, 71-91.

Wu, J. (2011). Technological collaboration in product innovation: The role of market competition and sectoral technological intensity. Research Policy, Article in Press.

Yu, C. H. 2001. An introduction to computing and interpreting Cronbach Coefficient Alpha. Proceedings of the twenty-sixth annual SAS User Group International Conference, 2001 Long Beach, CA. SAS Institute Inc.

Zahra, S.A. (1993). Environment, Corporate Entrepreneurship and financial performance: A taxonomic approach. Journal of Business Venturing, 8, 319–340

Zahra, S.A. & Covin, J.G. (1995). Contextual influences on the Corporate Entrepreneurship-performance relationship: A longitudinal analysis. Journal of Business Venturing, 10, 43–58

Zahra, S., & Dress, G. (2001). Entrepreneurship as a field of research: encouraging dialogue and debate. Academy of Management Review, 26(1), 8–11

Zahra, S.A., Jennings, D.F., & Kuratko, D.F. (1999). The antecedents and consequences of firm-level entrepreneurship: The state of the field. Entrepreneurship Theory and Practice, 24(2), 45–63

Zhao, Y. Li Y. Lee, S. H. and Chen, L. B. (2011) Entrepreneurial Orientation, Organisational Learning, and Performance: Evidence from China, Entrepreneurship and Theory in Practice, 35(2), 293-317

APPENDIX A

ACTUAL RESEARCH INSTRUMENT

Corporate Entrepreneurship: The role of middle-level management on Corporate Entrepreneurship within the Telecommunications Industry in South Africa.

Entrepreneurs play an important role in any economy, taking active roles in the creation of employment and employment opportunities in many countries. Some researchers see Corporate Entrepreneurship as embodying entrepreneurial behaviour requiring organisational sanctions and resource commitments for the purpose of developing different types of value-creating innovations (Alterowitz, 1988; Jennings and Young, 1990).

Please take a few minutes to complete this survey which is part of an academic research study. Your answers will be completely anonymous and confidential.

All the questions in the survey relate to Corporate Entrepreneurship within the telecommunication industry.

How many years have you been employed by the organisation?

- 3 years or less
- 4-6 years
- 7-9 years
- 10 years or more

What is your gender?

- Male
- Female

What is your highest level of education?

- Matric
- National Diploma
- Bachelor Degree
- Honours Degree
- Master Degree
- Doctorate Degree
- Other

In which geographical location are you based?

- Gauteng
- Cape Town
- Pretoria
- Port Elizabeth
- KZN

Which business area of the organisation do you work in?

- Finance
- Human Resources
- IT / Networks / Operations
- Product & Services
- Other (Please specify) _____

Please indicate to what extent you agree with the following statements using the rating scale: (1) Strongly disagree, (2) Disagree, (3) Somewhat disagree, (4) Neither agree nor disagree, (5) Somewhat agree, (6) Agree, (7) Strongly agree

1. I have a clear sense of the future of my organisation

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

2. I feel comfortable with organisational changes in my company

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

3. My organisation has a clear Corporate Entrepreneurship strategy

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

4. My company's top-level management has the capability and capacity to implement the corporate entrepreneurial strategy of the firm

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

5. New technological advancements create a challenge for my organisation

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

6. Changes in the competitive environment (telecommunications industry) negatively impacts my organisation

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

7. New products often require application of novel technologies

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

8. I play an important role in the implementation of the corporate entrepreneurial strategy

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

9. The organisational environment allow all employees to be innovative and creative

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

10. There is a correlation between employee performance and entrepreneurial behaviour within our organisation

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

11. I encourage employees to be pro-active and allow them to take risks with product or process development

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

12. I play an important role in the implementation of the corporate entrepreneurial strategy of our organisation

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

13. I do play an important role in communicating the corporate entrepreneurial strategy between top-level managers and operational-level managers

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

14. Entrepreneurial behaviour is part of the corporate culture within our organisation

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

15. Middle-level managers within my organisation have much to do with how entrepreneurial initiatives take shape

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

16. I support creativity and experimentation in introducing new products / services, technological leadership and research and development in developing new processes

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

17. Innovativeness allows our organisation to be ahead of competitors, “ahead of the pack”

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

18. Managers at all levels of the organisation has a clear understanding of the corporate entrepreneurial strategy of the firm

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

19. Employees are appropriately rewarded for the successful implementation of new products / services or processes

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

20. I propose and interpret entrepreneurial opportunities within my organisation that increase the firm’s competitiveness

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

21. My organisation tolerates failures from entrepreneurial initiatives, and provides decision-making latitude

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

22. I have or was part of a new initiative that was implemented in our organisation over the last six months

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

23. I do moderate the relationship between work discretion and the number of new ideas generated

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

24. The implementation of corporate entrepreneurial strategies has improved the overall performance of my organisation

1 2 3 4 5 6 7

Strongly Disagree Strongly Agree

APPENDIX B

Respondents' Snapshot

Recipents	
Total Count:	402
Unsent:	0
Sent:	402
Responded:	172
Unrespondents:	230
% Responded:	43%
% Unrespondents:	57%

APPENDIX C

CONSISTENCY MATRIX

Research problem

The study will assess the role of middle level management on Corporate Entrepreneurship within the telecommunications industry in South Africa. Empirical research in this area has been explored in the past; this research will focus on recent research exploring additional factors that have an impact on Corporate Entrepreneurship from a middle level management perspective. Quinn (1985) was among the first to recognise the valuable contributions and important roles of middle-level managers in the innovation process in an established company.

Purpose of the research study

The purpose of this study is to evaluate the role of middle-level managers on Corporate Entrepreneurship within the telecommunications industry within South Africa. The South African telecommunications industry has seen exponential growth over the last 24 years, especially within the cell phone industry (benefitting from the technological enhancements worldwide during the mid-nineties and early 2000's), (Makhaya, G, Roberts, R, 2003). There has been a strong correlation between the technological developments and entrepreneurship especially within Sillicon Valley (e.g. Apple and Microsoft). These entrepreneurial developments had an impact on South Africa, especially within the telecommunications industry.

Research Hypothesis	Description of path	Outcome
H1 A positive correlation exists between innovation within the telecommunications industry and entrepreneurial orientation (EO).	EO → Telecommunications industry innovation	Supported
H2 A positive correlation exists between organisational performance within the telecommunications industry and entrepreneurial orientation (EO).	EO → organisational performance within the telecommunications industry	Supported

H3 A positive correlation exist between risk taking and entrepreneurial orientation (EO) A positive correlation exist between pro-activeness and entrepreneurial orientation (EO)	EO → risk taking within the telecommunications industry EO → pro-activeness within the telecommunications industry	Supported Supported

APPENDIX D

Responded Companies

Company Name
Vodacom
MTN
Cell C
Telkom SA
Neotel
Vumatel
Internet Solutions