An assessment of corporate entrepreneurship in the alloy mining environment

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ABSTRACT

This study highlighted the influence of the 13 corporate entrepreneurial constructs on the entrepreneurial climate in corporate organisations. The primary objective of this study was to assess the level of corporate entrepreneurship in the South African alloy mining environment, with specific reference to Xstrata Alloys and to make recommendations on the encouragement and promoting of a climate conducive to corporate entrepreneurship in Xstrata South Africa (Pty) Ltd - Alloys.

The empirical study was conducted by means of a self-completion questionnaire administered to middle managers in Xstrata South Africa (Pty) Ltd – Alloys. The questionnaire was distributed to 252 middle managers by e-mail or in hard copy format. 103 usable questionnaires were gathered from middle managers in Xstrata South Africa (Pty) Ltd - Alloys.

Cronbach's alpha coefficient values were used to determine the internal consistency amongst items in the research instrument. In only three of the constructs' alpha values of less than 0.80 were calculated, indicating a relatively high level of internal reliability of the research instrument.

The 13 constructs of an entrepreneurial climate in an organisation, as well as five factors evaluating the perceived success of an organisation were investigated. The relationships between the demographic variables (being male and female; and black and white) were discussed for the 13 constructs as well as for the factors measuring the perceived organisational success in order to identify statistically significant variances in perceptions.

An assessment of the corporate entrepreneurial climate in Xstrata SA (Pty) Ltd – Alloys was conducted and the average mean for the study calculated. The means of six constructs were lower than the average mean ($\bar{x}$ = 3.556) while seven constructs were ranked higher. The two constructs with the highest mean were **Vision and strategic intent** ($\bar{x}$ = 3.882) and **Entrepreneurial leadership** ($\bar{x}$ = 4.066).

Recommendations and practical ways in which a corporate entrepreneurial climate could be enhanced and maintained in Xstrata SA (Pty) Ltd – Alloys was discussed. It was recommended that systems and processes should be revisited and adapted to ensure adherence to the requirements of a corporate entrepreneurial climate. Procedures must be simplified to facilitate the rapid implementation of new processes.

An action plan to facilitate the fostering of corporate entrepreneurial constructs in the organisation was proposed. The action plan included actions such as:

- Give feedback to top management on findings of study and recommendations made.
- Revisit corporate values and get buy-in from employees.
- Develop a strategic plan to ensure incorporation of corporate entrepreneurial constructs.
- Develop a procedure and process outlines for allocation of resources.
- Revisit rewarding system to recognise and reward entrepreneurial behaviour.
- Recognition for corporate entrepreneurs.
- Develop procedures and processes regarding tolerance for risks, mistakes and failures.
- Revisit the organisational structure of the organisation.
- Establish a communication strategy.
- Implement the mentoring process in all departments, focussing on departments with entrepreneurial potential.
- Build strong multidiscipline teams.
- Ensure rapid implementation of new processes.
- Align the following goals to each other as well as to the organisational strategy.
- Staff development.
- Assessment and evaluation system revisited to incorporate corporate entrepreneurial behaviour patterns.

The report concluded by addressing the achievement of all the objectives, and by recommending possible future research that could be undertaken based on this study.

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CHAPTER 1
NATURE AND SCOPE OF THE STUDY

1.1 INTRODUCTION

The mining sector in South Africa is facing fundamental challenges currently which entail productivity of labour and capital, rising input costs pressures, volatility of the rand, logistical constraints and various other human resources concerns (Chamber of Mines of South Africa, 2005:14). This could be linked to an entrepreneurial climate and must be addressed in order to remain competitive and to be financially strong.

While in recent years the mining industry saw commodity prices rise, and profits follow, the global economic downturn changed things over a period of months. Mineral deposits and mine developments are often in remote areas and host governments and other stakeholders often have stringent requirements for mining companies. These requirements on top of normal business challenges, such as commodity price movements, efficiency of operations, optimising taxes, environmental needs, health and safety challenges, and community needs, ensure that mining is challenging for all industry participants (Price Waterhouse and Coopers, 2008:1). Mining companies around the world are responding to these challenges through innovative strategies.

Research has been conducted in the mining environment regarding corporate entrepreneurship (Oosthuizen, 2006:1). However, the study conducted by Oosthuizen was conducted during 2006 while the mining economy was on a high. Further research is needed during a mining economy downswing. Oosthuizen's research also excluded Xstrata SA (Pty) Ltd.

Companies can no longer rely on the same leadership styles they have used in the past. A new entrepreneurial leadership style is required to ensure flexibility, change, innovation and responsiveness (Oosthuizen, 2006:1). Today's managers are faced with highly competitive environments which are continuously rapidly changing.

Managers also need to manage an interdependent global economy, heightened volatility, hyper competition, demographic changes such as the decrease of some sectors accompanied by enormous growth in others (Dess, Lumpkin & Covin, 1997:677).

Middle managers are important as the research population since the middle management level is where entrepreneurial activities are most likely to experience the actual implementation of strategies. Middle managers conduct information and actions such as those associated with entrepreneurship between top management and operating level managers (Morris, Kuratko & Covin, 2008:309-311).

According to Burns (2005:9), entrepreneurship is something that organisations of all sizes and forms wish to encourage and promote. It is about promoting change and managing rapid growth. During economic downturn periods it is important to identify opportunities and minimize failures and mistakes (Cornwall & Perlman, 1990:189).

1.2 PROBLEM STATEMENT

The mining industry by nature is a very competitive industry. The mining industry, however, experienced a violent downward tailspin in the last three months of 2008 (Price Waterhouse and Coopers, 2008:1). In the light of the current economic down turn the mining industry is even more competitive.

External turbulence is forcing companies into fundamental internal transformation. Companies need to ensure sustainable competitive advantage through adaptability, flexibility, speed, aggressiveness and innovativeness. All of these are distinctive of an entrepreneurial climate in a company (Morris & Kuratko, 2002:15).

According to Cornwall and Perlman (1990:29), entrepreneurial organisations are much more equipped to be competitive than any other traditional organisations. Entrepreneurial organisations are able to quickly and effectively respond to changes in the external environment.

In today's competitive corporate environment, organisations are striving to outwit, outsmart and outplay their competitors. New methods of managing and leading the companies are required to have the competitive edge. Entrepreneurial leadership is reckoned as a role-playing factor in companies that is moving ahead today. Xstrata SA (Pty) Ltd is a fast growing company with a very flat (decentralised) management philosophy. If the entrepreneurial climate of Xstrata is evaluated, the company could build on what they are doing right, and change what they are doing wrong.

1.3 RESEARCH OBJECTIVES

The research objectives are divided into primary and secondary objectives.

1.3.1 Primary objective

The primary objective of this study is to assess the level of corporate entrepreneurship in the South African alloy mining environment, with specific reference to Xstrata Alloys and to make recommendations on the encouragement and promoting of an entrepreneurial climate.

1.3.2 Secondary objectives

In order to achieve the primary objective, the following secondary objectives were formulated:

- To define corporate entrepreneurship and entrepreneurial climate.
- To obtain insight into the dynamics of corporate entrepreneurship and entrepreneurial climate by means of a literature review.
- To gain insight into the business environment of Xstrata PLC as a company focussing on Xstrata Alloys as part of the South African mining sector.
- To assess the current corporate entrepreneurial climate in Xstrata Alloys by means of a questionnaire.
- To propose recommendations to ensure and promote an entrepreneurial climate in Xstrata Alloys.

1.4 SCOPE OF THE STUDY

1.4.1 Field and sector of study

The field of study falls within the subject discipline of entrepreneurship with special reference to corporate entrepreneurship.

1.4.2 Organisation under investigation

The study is carried out in the private sector and more specifically the business environment of the mining company Xstrata South Africa (Pty) Ltd – Alloys. The nine operational units within Xstrata South Africa (Pty) Ltd – Alloys are situated in the Northwest and Mpumalanga provinces of South Africa. Refer to chapter 2 for a detailed description of Xstrata South Africa (Pty) Ltd. The geographical location of the operational units under investigation within the boundaries of South Africa is indicated in figure 1.1 below.

Figure 1.1: Map of South Africa with Xstrata's operational units

Source: Xstrata Web (2008)

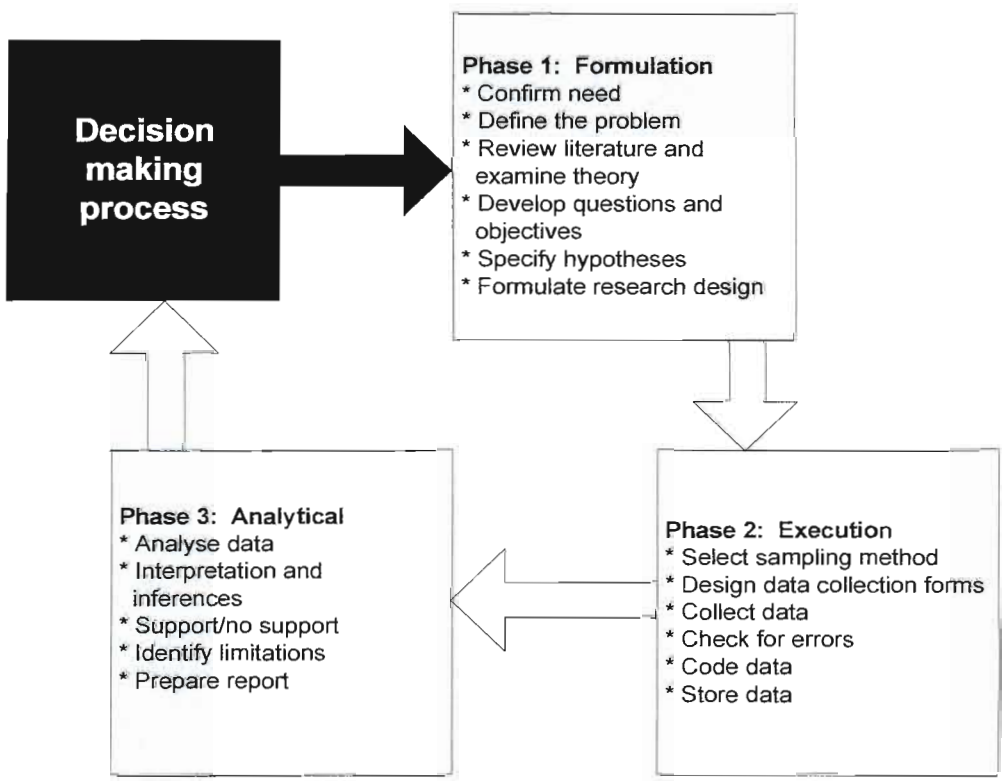
1.5 RESEARCH METHODOLOGY

Although many different research processes or research steps are identified by different authors, most of the processes have the same basic principles or steps. The systematic flow of the research process assists the researcher to proceed from an identified problem to proposing meaningful solutions or providing recommendations for improvement.

Welman, Kruger and Mitchell (2005:12-13) propose a six step research process, including the determination of the research topic, defining the research problem, planning the research, collecting data, interpreting data and writing a report.

Hair, Money, Samouel and Page (2007:32) provide a road map with directions for conducting a business research project. An example of their research process flow could be found in Figure 1.2.

Figure 1.2: The basic business research process



Source: Hair *et al.* (2007: 32)

For the purpose of this study, the seven steps as proposed by Brynard en Hanekom (2006:10-12) are applied and will be discussed below. The seven steps include:

- Phase 1: Select a researchable topic.
- Phase 2: Formulate a research question/problem.
- Phase 3: Plan the research.
- Phase 4: Implement the methods decided upon.
- Phase 5: Collect the data.
- Phase 6: Analyse and interpret the data.
- Phase 7: Write a research report.

The seven phases will now be discussed in more detail.

1.5.1 Phase 1: Select a researchable topic

According to Bak (2004:8-9), some areas in which a research topic can be found are:

- Interesting coursework or assignments.
- Literature.
- An existing research project.
- Find out what other students are working on.
- Suggestions from academics in the field of interest of the researcher.
- Official documents such as departmental files and reports of committees.
- Curiosity regarding a field of interest of the researcher.
- Personal experience.

Previous research done by Oosthuizen (2006:1) was utilised as a source for this study's research topic.

Hair *et al.* (2007:88) state that quality research topics are topics that address gaps in previously researched or existing knowledge that currently inhibit informed decision making.

The topic of this study, i.e. the entrepreneurial climate in a mining company was selected with this aim in mind. A previous study conducted on the entrepreneurial climate in the mining industry by Oosthuizen (2006:1) mainly focused on mining companies in the platinum, diamond, gold, coal and uranium commodities. This study will be conducted on a mining company in the Chrome and Vanadium commodities.

1.5.2 Phase 2: Formulate a research question/problem

The problem statement acts as a guide and focuses the planning of the research and the research itself. It requires an exact description as concise as possible of the research topic, which will convey as much information on the problem as possible (Bak, 2004:16). The problem statement for this study is discussed in section 1.2.

1.5.3 Phase 3: Plan the research

Two forms of studies will be conducted in order to gather information, namely a literature study and empirical study.

1.5.3.1 Literature review

The literature review will be discussed in chapter 2, chapter 3 and chapter 4. The following will be investigated in each of the chapters:

Chapter 2

In chapter 2 an overview of Xstrata PLC will be given, with special focus on Xstrata Alloys. The history and diverse commodities within Xstrata Alloys will be discussed.

The Xstrata PLC and Xstrata Alloys structure will be discussed to give understanding of the diverse commodities, and the flat organisational structure of Xstrata.

The causal factors which gave rise to this study will be examined.

Chapter 3

Chapter 3 will focus on a discussion of entrepreneurship within existing organisations; it will identify specific individual characteristics that promote the entrepreneurial climate in an organisation; and it will give attention to the activities of the entrepreneur (individual and in the corporate environment). Entrepreneurship and corporate entrepreneurship will be defined.

The five basic dimensions of corporate climate will be identified. In order to foster a corporate entrepreneurial climate within an organisation, the role of corporate culture and climate should be considered.

Chapter 4

In chapter 4 the entrepreneurial climate and culture will be defined and the thirteen constructs of the corporate entrepreneurial climate in an organisation will be discussed in detail.

The sources that will be consulted include:

- Journals such as *Harvard Business Review, Journal of Business Venturing, Journal of Small Business and Enterprise Development, Journal of Management, IIMB Management Review, Strategic Management Journal, Entrepreneurship Theory and Practice.*
- Various text books (see the reference list at the end of the proposal).
- Internet articles.
- Dissertations of previous doctorate and magister students.
- Annual reports of Xstrata and the Chamber of mines.

1.5.3.2 Empirical study

The empirical study consists of the research design, the measuring instrument, the study population and the statistical analysis.

Measuring Instrument

An existing questionnaire developed by Oosthuizen (2006) and adapted by Jordaan (2008) will be used to conduct the empirical study. The questionnaire will further be adapted for use in Xstrata SA (Pty) Ltd – Alloys. The questionnaire consists of three parts, namely:

Section A: Assessment of the entrepreneurial climate

This section consists of 65 items, based on the constructs of corporate entrepreneurship which evaluates the existing level of corporate entrepreneurship within the organisation.

Oosthuizen (2006:130-146) originally identified the thirteen constructs that seem necessary for an entrepreneurial climate in corporate organisations, i.e. visionary or entrepreneurial leadership, management support, the presence of a champion or sponsors, tolerance for risks, mistakes and failure, innovation and creativity - new ideas encouraged, appropriate rewards and reinforcement, vision and strategic intent, discretionary time and work, empowered teams, multi-disciplined teamwork and diversity, resource availability and accessibility, continuous- and cross-functional learning, strong customer orientation, and a flat organisational structure with open communication and strong sense of belonging.

Section B: Perceived organisational success

A total of 17 items were identified to measure the perceived success of the organisation in terms of financial, customer or market, process, people development and long term success. In respect of each item, subjects have to indicate the degree to which they agree or disagree with a certain statement.

Section A and B are completed by means of a Likert scale (also referred to as a summated scale). According to Huysamen (1994:125), a Likert scale comprises of a collection of statements and respondents are required to indicate a degree of agreement/disagreement with statements on a scale. A five point Likert scale is

incorporated in the questionnaire developed by Oosthuizen (2006) and adopted by Jordaan (2008).

Section C: Demographical information

Respondents have to indicate their age group, gender, race, highest academic qualification and the functional department in which they work.

Study population

Xstrata Alloys with specific focus on the chrome division was identified as the corporate entity to be held under the magnifying glass. The reason for choosing Xstrata Alloys is that it goes hand in hand with previous studies which also focused on the mining sector (Oosthuizen, 2006). Nine different operational units within Xstrata Alloys will be included in this evaluation, namely Head Office, Shared Service Centre, Rustenburg, Boshoek, Lydenburg, Eastern Mines, Western Mines, Lion and Wonderkop. Xstrata Alloys defines middle management as managers in D level positions as graded by the Patterson grading system. This means in Xstrata, middle management incorporates engineers, superintendents, head of departments, human resource managers and departmental managers. (Lower management will thus be on supervisory level, and top or senior management will be executive/directorial management level).

The Patterson (1972) job grading system is used in Xstrata Alloys to categorise jobs according to the level of decision making involved in the execution of tasks. The questionnaires will be distributed by hand or e-mailed to all employees on the D band (Patterson grading) within the nine Xstrata Alloys operational units as summarised in table 1.1.

Although the majority of employees on the D band are middle managers, the researcher might find that some of the employees on the D band are actually either junior- or senior managers. For the purpose of this study, these employees will be included in the population. The geographical distribution of the population is summarised in table 1.1.

Table 1.1: Geographical data of the study population

OPERATIONAL UNIT	NUMBER OF EMPLOYEES
Head Office (including Shared Services)	68
Lion Ferrochrome	24
Lydenburg	25
Wonderkop	30
Rustenburg	19
Boshoek	20
Eastern Mines	27
Western Mines	39
Total Xstrata Alloys	**252**

The study population of this study will thus include all the D band managers in the nine chrome operational units (as indicated above) within Xstrata Alloys. The questionnaires would not only be distributed to a sample of the population, but to all the middle managers.

1.5.4 Phase 4: Implement the methods decided upon

The permission of Xstrata's Managing Director for Chrome and the General Manager for Human Resources were obtained to conduct the study before the questionnaire was distributed to the respondents.

A name list of all employees within the population was obtained from the Xstrata human resources department and the information was verified on the Xstrata electronic information system (SAP).

1.5.5 Phase 5: Collect the data

Brynard and Hanekom (2006:11) state that during the data collection phase, the researcher must ensure that all the facts collected during the main investigation are relevant to the research problem/question.

The techniques to distribute and complete the questionnaires included: e-mail or facsimile and personal delivery of questionnaires. Confidentiality was ensured for each participant, and although names were known due to most of the questionnaires being sent back via e-mail, the names were used strictly for the purpose of capturing the relevant demographical data or to follow-up uncompleted questionnaires.

1.5.6 Phase 6: Analyse and interpret the data

The data collected will be statistically analysed, using Statistica (Statsoft, 2008) and *SPSS* (SPSS, 2005).

Internal consistency reliability: The reliability of the questionnaire will be assessed by means of calculating the Cronbach alpha coefficients.

Measures of central tendency: The arithmetic mean is the statistical measure most commonly used to determine central tendency. The arithmetic mean is the sum of the total values, divided by the number of values measured (Levine, Stephan, Krehbiel & Berenson, 2005:105). Other measures of central tendency include the median and the mode, but in this study the mean will be used to analyse data.

Measures of dispersion: Measures of dispersion indicate the spread of data (Levine *et al.,* 2005:112). Standard deviation is based on the mean and gives an average distance between all the scores and the mean. In this study the standard deviation will be used to indicate the dispersion of data around the mean.

Frequency distribution: Frequency distributions are the grouping of data into mutually exclusive classes showing the number of observations in each (Levine *et al.,* 2005:55). One of the most common ways to portray a frequency distribution is a histogram (Levine *et al,.* 2002:35) Percentages as well as numbers will be used, depending on the nature of date, to draft the frequency distributions.

The data interpretation section includes a discussion of the demographic information, the construct validity and reliability of the questionnaire and the relationship between the variables.

1.5.7 Phase 7: Write a research report/conclusions

It is important to take into consideration that the quality of the research report is not only judged by the conformity to the basic research requirements and by the quality of its contents, but also by the correctness of all the technical aspects such as referencing, use of figures, numbers in the text, headings and the list of sources (Brynard & Hanekom, 2006: 79-85). For the purpose of this study, a detailed research report will not be written, but the conclusions drawn from the empirical study will be discussed in detail.

1.6 LIMITATIONS/ANTICIPATED PROBLEMS

The sample frame was limited to a single organisation which ultimately provided data representative of the particular organisations' internal culture. The purpose of the research was not to extrapolate the data or results in order to make deductions but rather to learn about the entrepreneurial climate in the mining industry.

The possible impact of the current international economic situation on the research results should be taken into consideration.

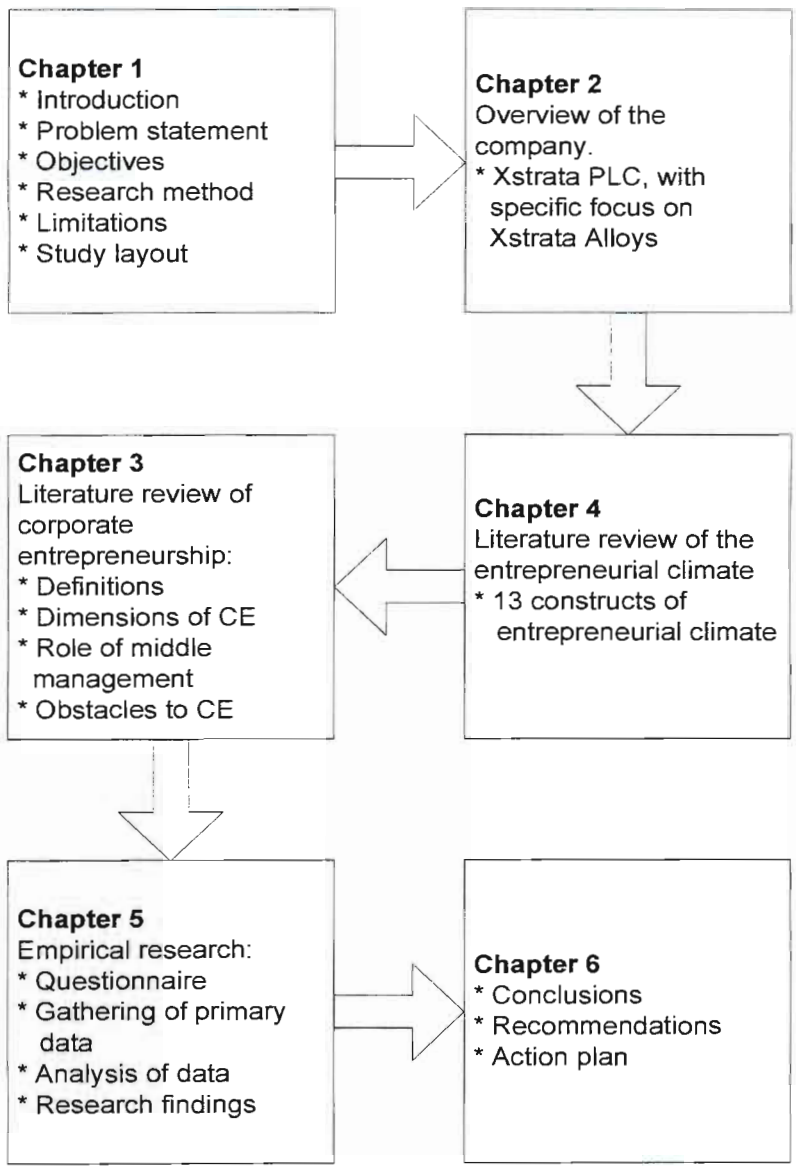
The scope of the study is limited to employees assumed to be on middle management level. The results of the study could not be generalised to the entire Xstrata Alloys population. The researcher recommends that future studies on this topic should include employees on supervisory and top management level.

The population identified is small (252), it might therefore be difficult to obtain enough responses to obtain a statistically valid sample, and it does limit the use of advanced statistical techniques such as scale validation or structural equation modelling.

1.7 THE LAYOUT OF THE STUDY

Figure 1.3 gives a graphical representation of the layout of the study per chapter.

Figure 1.3: Layout of the study



The chapters (2 to 6) in this mini-dissertation are presented as follows:

Chapter 2 comprises of a short overview and history of the company under investigation. In this instance the company is Xstrata PLC with specific focus on Xstrata SA (Pty) Ltd – Alloys, the South African based section of Xstrata PLC.

Chapter 3 covers a literature review on corporate entrepreneurship, conducted to investigate the definitions of entrepreneurship and corporate entrepreneurship, the characteristics of an entrepreneur, the dimensions of corporate entrepreneurship, the role of middle managers in an entrepreneurial organisation, concluding with the obstacles to corporate entrepreneurship.

Chapter 4 investigates corporate entrepreneurial climate in the format of a literature review. The thirteen constructs of corporate entrepreneurship as identified by Van der Merwe and Oosthuizen (2008) are reviewed. The organisational climate and the perceived success of the organisation will also be investigated.

Chapter 5 discusses the empirical study and its findings. The study consists of an approved survey. The objective of the survey is to determine the current level of entrepreneurship within Xstrata SA (Pty) Ltd – Alloys. Chapter 5 includes the process of data gathering, the presentation of the empirical research results and a discussion of the research results.

The conclusions and recommendations are covered in Chapter 6. This chapter draws a conclusion on the current state of entrepreneurship in Xstrata SA (Pty) Ltd – Alloys, and discusses recommendations for creating an entrepreneurial climate including entrepreneurial leadership and behaviour. The evaluation of the achievement of objectives and suggestions for further research will conclude this chapter.

CHAPTER 2
OVERVIEW OF XSTRATA SOUTH AFRICA (PTY) LTD - ALLOYS

2.1 INTRODUCTION

An overview of Xstrata PLC will be given in order to understand the strategy, history, group structure, and commodity businesses and extend of diversification of the organisation. During this overview, the place of Xstrata SA (Pty) Ltd – Alloys in Xstrata PLC will be identified.

This will be followed by an overview of Xstrata SA (Pty) Ltd – Alloys in order to understand the specific environment and to try and understand the status quo and how this potentially relates to the theory based literature study which will be conducted in chapters three and four.

The strategy, history and developments within Xstrata Alloys will be discussed in detail including a discussion on the commodity products mined and processed within Xstrata Alloys.

The chapter will conclude by addressing specific causal factors to the study which highlights the need and potential benefit of corporate entrepreneurship within Xstrata Alloys. These factors will be addressed under the following headings:

- Internal structures.
- Mergers and acquisitions.
- Competition.

2.2 OVERVIEW OF XSTRATA PLC

Xstrata is a global diversified mining group, listed on the London and Swiss Stock exchanges, with its headquarters in Zug, Switzerland. Xstrata's businesses maintain

a meaningful position in seven major international commodity markets: copper, coking coal, thermal coal, ferrochrome, nickel, vanadium and zinc. Xstrata also has a growing platinum group metals business as well as additional exposures to gold, cobalt, lead and silver, recycling facilities and a suite of global technology products, many of which are industry leaders. The Group's operations and projects span 19 countries (Xstrata, 2008a:i).

2.2.1 Mission statement

Xstrata's mission statement is: "We will grow and manage a diversified portfolio of metals and mining businesses with the single aim of delivering industry-leading returns for our shareholders."

Xstrata believe they can achieve this only through genuine partnerships with employees, customers, shareholders, local communities and other stakeholders, which are based on integrity, co-operation, transparency and mutual value-creation (Xstrata, 2008b:i).

2.2.2 Group overview and strategy

Xstrata PLC was created through an initial public offering on the London Stock Exchange in March 2002. Since that time, the Group's scale, scope, geographic spread and commodity diversification have been transformed through a combination of incremental acquisitions, organic growth projects, operational improvements and value accretive, company-transforming acquisitions. Xstrata is now the fifth largest diversified metals and mining company in the world, with operations and projects in 19 countries and top five market positions in each of its major commodities.

Xstrata's primary strategic aim is to create superior shareholder value by growing and managing a diversified portfolio of mining and metals businesses. Their mission statement recognises that to continue to grow and create value over the long term, they must operate in an ethical and transparent way, forming mutually beneficial partnerships with their stakeholders.

Xstrata PLC strategic objectives are:

- To manage an attractive portfolio of assets diversified by commodity, geography and currency.
- To uphold a rigorous and unwavering focus on value and growth, identifying and securing opportunities for value creation.
- To maintain and enhance their financial strength and discipline.
- To create further value through ongoing portfolio optimisation, delivery of capital and operational efficiencies and real cost reductions.
- To achieve and maintain the highest standards of health, safety and environmental performance at their operations and to work in partnership with local communities for mutual benefits, supporting the principles of sustainable development.
- To foster a high performance and entrepreneurial culture through a highly devolved structure, empowering management teams and minimising overheads.
- To conduct their business activities ethically and with the maximum transparency commercially possible.

2.2.3 History of Xstrata PLC

Xstrata was established in 1926 as Südelektra AG, a Swiss company with investments in infrastructure and electricity projects in Latin America. A number of disposals and acquisitions had transformed the company into a diversified natural resources group when Südelektra renamed itself Xstrata in 1999.

Throughout 1999 and 2000 Xstrata AG continued to dispose of non-core businesses such as aluminium, oil and gas and to focus on low-cost production in its key markets. In May 2001 Xstrata acquired Asturiana de Zinc, a Spanish listed zinc group.

The take over of Xstrata took place in October 2001, when it was a small, Swiss-listed mining company with a market capitalisation of around $500 million and largely

reliant on ferroalloys and zinc operations in South Africa and Europe. Mick Davis, formerly Billiton's Chief Financial Officer and an architect of the BHP Billiton merger, was appointed as Chief Executive Officer. Trevor Reid was appointed as Chief Financial Officer, joining from Standard Bank in London where he was Global Head of Resource Banking.

Xstrata PLC was created five months later through an initial public offering on the London Stock Exchange in March 2002, which raised just under £1 billion and was oversubscribed in excess of seven times at the offer price. Simultaneously, Xstrata acquired Glencore's Australian (Enex) and South African (Duiker) coal assets for $2.5 billion becoming the world's largest exporter of thermal coal and entered the FTSE100 index as the 100th largest company.

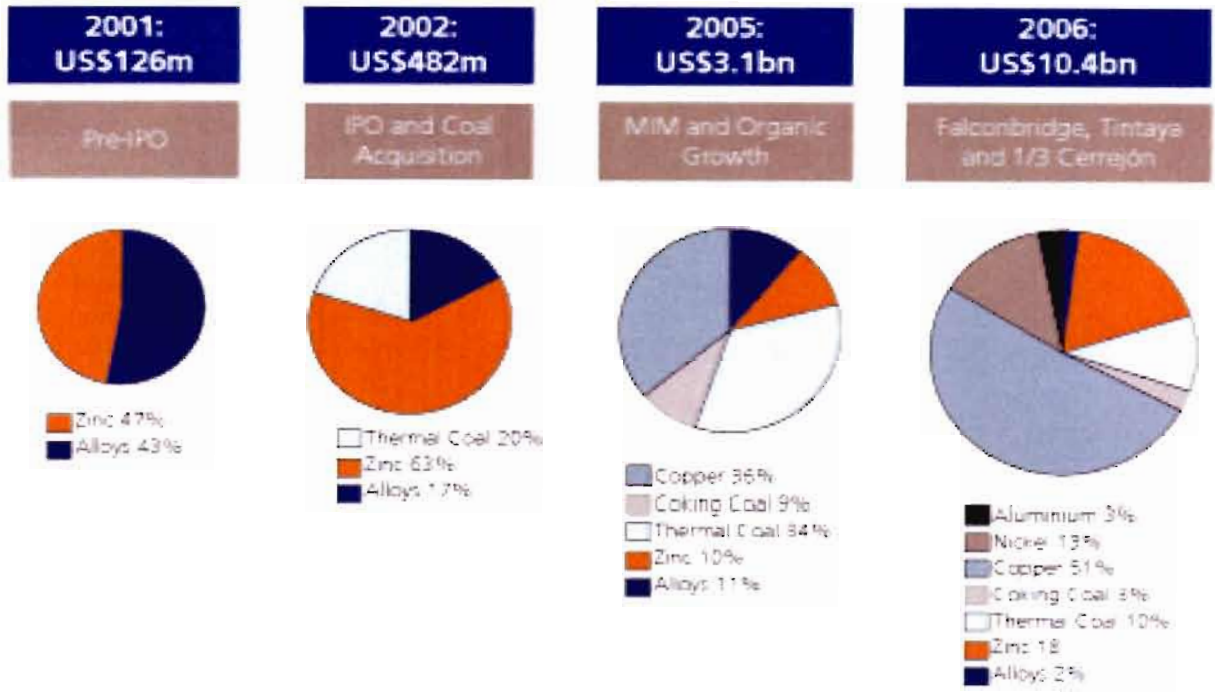
Since its listing on the LSE in 2002, key events include:

- January 2003: The German Nordenham zinc smelter purchased from Metaleurop for $100 million.
- June 2003: Xstrata completed the acquisition of MIM Holdings, an Australian metals and mining group (coking coal, copper, zinc, lead, silver and gold assets) for $2.9 billion. The acquisition provided additional geographic diversification, critical mass and entry into two new commodities: copper and coking coal.
- December 2003: Xstrata approved the construction of a new ferrochrome smelter in South Africa, the "Lion project", which has raised Xstrata's annual ferrochrome production capacity to one-third of current global capacity.
- February 2004: Xstrata PLC established a shared venture with SA Chrome & Alloys, which introduced meaningful and sustainable black empowerment participation in Xstrata's South African ferrochrome business.
- February 2004: The Rolleston project was approved, creating a long-life, open-cut thermal coal mine in Queensland, Australia.
- April 2004: Xstrata purchases a further 45% of the Cook Colliery for US$6.35 million, increasing its stake in the Queensland-based coking coal mine to 95%.

- August 2005: Xstrata purchased 19.9% of Falconbridge Limited and acquired the remaining 80% the following October, the total cost of Falconbridge was $18.8 billion. This acquisition brought a unique portfolio of organic growth opportunities, diversification into nickel, exposure to North America and a significantly enhanced South American copper business, together with additional scale for the zinc business, now the largest listed global producer.
- March 2006: A one-third stake in the Colombian coal operation, Cerrejón, was acquired from Glencore International, for $1.7 billion.
- June 2006: The Peruvian Tintaya copper operation was bought from BHP Billiton for $811 million.
- April 2007: The disposal of Xstrata Aluminum to Apollo Management LP for a total cash consideration of $1.15 billion was announced. Xstrata Aluminum was created from the former Falconbridge Group's aluminum assets, known as Noranda Aluminum.
- August 2007: Xstrata announced a $1 billion for Eland Platinum Holdings.
- August 2007: Xstrata announces its intention to purchase Iluka Resources Limited's 50% interest in the Narama thermal coal mine, located in the Hunter Valley of New South Wales, further consolidating Xstrata's interests in the Hunter Valley.

The pie charts below in Figure 2.1 show the impact of Xstrata's acquisitions, diversification and growth on its EBITDA (earnings before interest, tax, depreciation and ammortalisation).

Figure 2.1: Impact of Xstrata's acquisitions, diversification and growth on its EBITDA



Source: Xstrata Web (2008)

Today, Xstrata is the world's largest producer of export thermal coal, the largest producer of ferrochrome, the largest exporter of thermal coal, one of the top five producers of coking or metallurgical coal, the fourth largest global copper producers, the fourth largest global nickel producers and one of the world's largest miners and producers of zinc.

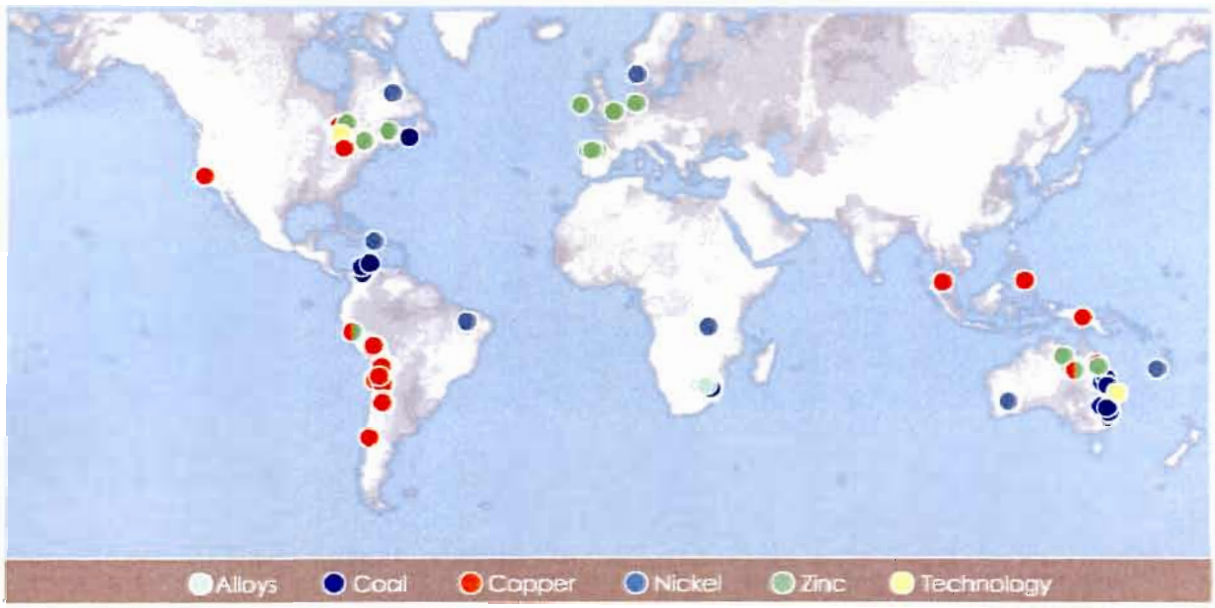
2.2.4 Group structure

Xstrata's activities are organised into five global commodity businesses and a technology business, each of which operates with a high level of autonomy. Xstrata differentiates itself from industry peers by devolving maximum responsibility and authority to its commodity business units. They believe this directly benefits their operations by creating a strong sense of local ownership, where entrepreneurial managers are empowered and incentivised to address site-specific challenges and seize opportunities (Xstrata Web, 2008).

Xstrata's devolved management structure provides a critical competitive advantage in this area. Operational management teams are incentivised and have the authority to implement innovative, localised initiatives to enhance efficiency that together amount to significant, cumulative savings, without the burden of centralised decrees and programmes that ignore the realities of individual operations (Xstrata, 2008a:14).

Xstrata's commodity businesses (as indicated in Figure 2.2) are supported by a small corporate centre, split between the head office in Zug, Switzerland and a corporate office in London, United Kingdom. Figure 2.2 indicates the logistical distribution of the Xstrata PLC commodity businesses and operational units.

Figure 2.2: Global view of Xstrata commodity businesses



Source: Adapted from Xstrata (2008a:4)

The six commodity businesses are now discussed in more detail.

2.2.5 Commodity businesses

Xstrata PLC's activities are organised into five global commodity businesses and a technology business, each of which operates with a high level of autonomy.

The businesses are as follows:

Xstrata Alloys is the world's largest producer of ferrochrome and a leading producer of primary vanadium. Xstrata Alloys also owns carbon and anthracite operations which supply key raw materials to its ferrochrome smelters and an interest in a joint venture platinum group metals mine and concentrator. Xstrata Alloys' headquarter is in Rustenburg, South Africa.

Xstrata Coal is the world's largest exporter of thermal coal and a significant producer of premium quality hard coking coal and semi-soft coal. Headquartered in Sydney, Australia, Xstrata Coal has interests in over 30 operating coal mines in Australia, South Africa and Colombia and an exploration project in Nova Scotia, Canada.

Xstrata Copper is the fourth largest global copper producer, with mining and processing facilities located in Australia, Chile, Peru, Argentina and Canada. It also manages a recycling business (Noranda Recycling) with plants in the USA and Asia. Xstrata Copper's world-leading portfolio of growth projects includes Las Bambas in Peru, Tampakan in the Philippines, El Morro in Chile, El Pachòn in Argentina and Frieda River in Papua New Guinea.

Xstrata Nickel, headquartered in Toronto, Canada, is the fourth largest global nickel producer and one of the world's largest producers of cobalt. Xstrata Nickel's operations include five mines and processing facilities in Canada, a ferronickel mine and processing facility in the Dominican Republic and a refinery in Norway. Xstrata Nickel's promising portfolio of growth projects includes Nickel Rim South in Canada, Kabanga in Tanzania, and Koniambo in New Caledonia.

Xstrata Zinc is one of the world's largest miners and producers of zinc. Xstrata Zinc's operations span Spain, Germany, Australia, the UK and Canada, with an interest in the Antamina copper-zinc mine in Peru. Xstrata Zinc's growth projects include interests in the Lady Loretta deposit in Queensland, Australia, and the Perseverance zinc deposit in Quebec, Canada.