

Gordon Institute of Business Science

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Exploring the application of strategic foresight in South African Mines: Focusing on the
Platinum Mines

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Abstract

The purpose of this research was to investigate the extent to which strategic foresight was used by business leaders with a focus on the South African Platinum Mining Industry. The motivation for the research was the reports of prevailing conditions in the mining sector, which brought into question the level at which strategic foresight was used in planning. This raised a further question of whether academic research of the past 50 years was perceived as valuable by organisational leaders.

Because strategic foresight is a managerial tool that, among other things, takes into consideration the value of employees and other stakeholders, the researcher interviewed corporate Heads of Strategy, Business Development and Sustainability, and Risk, Assurance and Sustainability. Finance, Risk and Operations Managers in the operations were also interviewed.

Conclusions reached in this research were that use of strategic foresight, as explained by Rohrbeck & Gemünden, (2008), Slaughter, (1995) and Godet, (2008), seemed to be limited in the area of focus which was the South African Platinum Mining sector. This was due to the fact that all participating organisations seemed to have an idea of what it was but, either had no resources to properly implement it; lacked the understanding of the concepts; or simply felt that parts of the process, rather than the whole process, would be sufficient to guarantee success.

Keywords

Foresight, Strategic Foresight, La Prospective, Environmental Scanning and Organisational Competitiveness

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorization and consent to carry out this research.

Celiwe V. Xulu

09 November 2015

Table of Contents

Abstract.....	i
Keywords.....	i
Declaration.....	ii
1. Introduction to Research Problem.....	1
1.1. Introduction.....	1
1.2. Problem Statement.....	4
1.3. Purpose of Research.....	6
1.4. Research Objectives.....	7
2. Literature Review.....	9
2.1. Introduction.....	9
2.2. Foresight.....	9
2.3. Strategic Foresight.....	11
2.4. Strategic Foresight Process.....	13
2.4.1. Type of Organisation.....	15
2.4.2. Environmental Scanning.....	16
2.4.3. Analysis.....	18
2.5. Collaboration.....	22
2.6. Strategy.....	22
3. Research Questions.....	24
4. Research Methodology.....	25
4.1. Research Objectives.....	25
4.2. Research Design.....	25
4.3. Population.....	26
4.4. Unit of Analysis.....	27
4.5. Sample.....	27
4.6. Ethical Consideration.....	28
4.7. Interview Process and Data Collection.....	28
4.8. Data Analysis.....	30
4.9. Research Limitations.....	31
5. Results.....	32
5.1. Introduction.....	32
5.2. Respondent's profile in brief.....	32

5.3.	Maturity Level of strategic foresight	35
5.3.1.	Information Usage	35
5.3.2.	Method Sophistication	37
5.3.3.	People and Networks	40
5.3.4.	Organisation	41
5.3.5.	Culture	43
5.4.	Conclusion	45
6.	Discussion of Results	47
6.1.	Introduction	47
6.2.	Primary Research Question	48
6.2.1.	Information Usage	48
6.2.2.	Method Sophistication	49
6.2.3.	People and Networks	50
6.2.4.	Organisation	52
6.2.5.	Culture	52
6.3.	Research Sub-Question One	54
6.4.	Research Sub-Question Two	55
6.5.	Conclusion	56
7.	Conclusion	57
7.1.	Introduction	57
7.2.	Summary findings	57
7.3.	Research Findings	57
7.4.	Recommendations	59
7.5.	Future Research	60
8.	References	62
9.	Appendix A	71
10.	Appendix B	77
11.	Appendix C	78

Table of Figures

Figure 1: Trading Economics: South Africa GDP from Mining	1
Figure 2: WPIC: Platinum Price Over Last 40 Years.....	4
Figure 3: Trading Economics "South Africa Mining Production	6
Figure 4: Vecchiato & Rovenda (2010) "General Classification of Strategic Foresight.....	13
Figure 5: Capability approach to strategic foresight.....	15
Figure 6: Organizing dimensions of strategic foresight	18
Figure 7: Causal Layered Analysis - Medical mistakes illustration	19
Figure 8: Emerging Issues Analysis	20
Figure 9: The quadrants in Integral Theory.....	21

List of Tables

Table 1: Research Participants Profiles.....	34
Table 2: Extracted Environmental Factors scanned by Platinum Mining Companies	36
Table 3: Thematic table of internal communication.....	38
Table 4: The Thematic on the Scope of Networks	40

1. Introduction to Research Problem

1.1. Introduction

Over the past 5 years, the South African mining industry has experienced fluctuating growth, as indicated by figure 1 below. The fluctuating performance has not only impacted on the mining industry's performance, but it has also impacted on the country's economic growth. The mining sector is the biggest employer of skilled and mostly unskilled labour, employing 500 000 (Chamber of Mines of South Africa, 2014) directly and an additional 240 000 employed indirectly in this industry (Statistics South Africa, 2013). It is also one of the largest contributors to GDP, contributing between 8 and 9 percent (Chamber of Mines of South Africa, 2014), but recent GDP from mining in South Africa had indicated a decrease to R235.5m in the second quarter of 2015 from R239.7m in the first quarter of 2015. GDP averaged R234.6m from 1993 until 2015, reaching an all time high of R251.1m in the fourth quarter of 2006 and a record low of R214.5m in the first quarter of 2009, which was attributed to the global economic crisis (Trading Economics, 2015) .

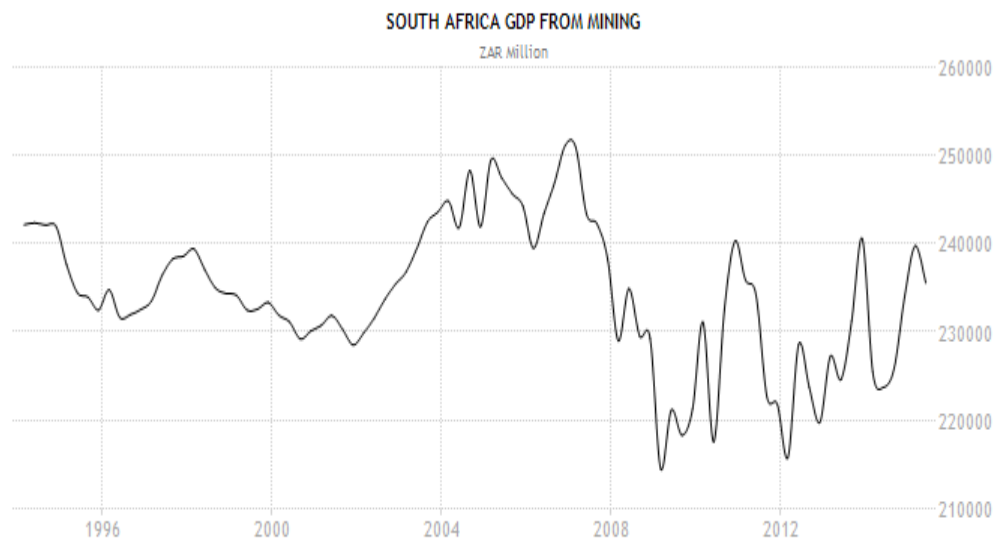


Figure 1: South Africa GDP from Mining

Source: www.tradingeconomics.com | Statistics South Africa

There was a 1.5% decrease in mining production in 2014 compared to 2013. This was said to be due to the declines in platinum group metals (**PGMs**) (-28.7%) and gold (-5.1%). In the first quarter of 2015 there was an increase in platinum production, which, according to economists was due to a “low base effect”, as figure 2 below indicates that PGM output peaked in December 2010, the highest monthly production level on record since January 1980; industrial action interrupted production in February 2012; in August of that year, the tragic events at Marikana, whereby 34 miners lost their lives during a strike, drew worldwide attention; a 5-month-long strike in 2014 resulted in a rapid fall in PGM production, thus causing the low base effect that the mines were measured against in 2015 (Statistics South Africa, 2015).

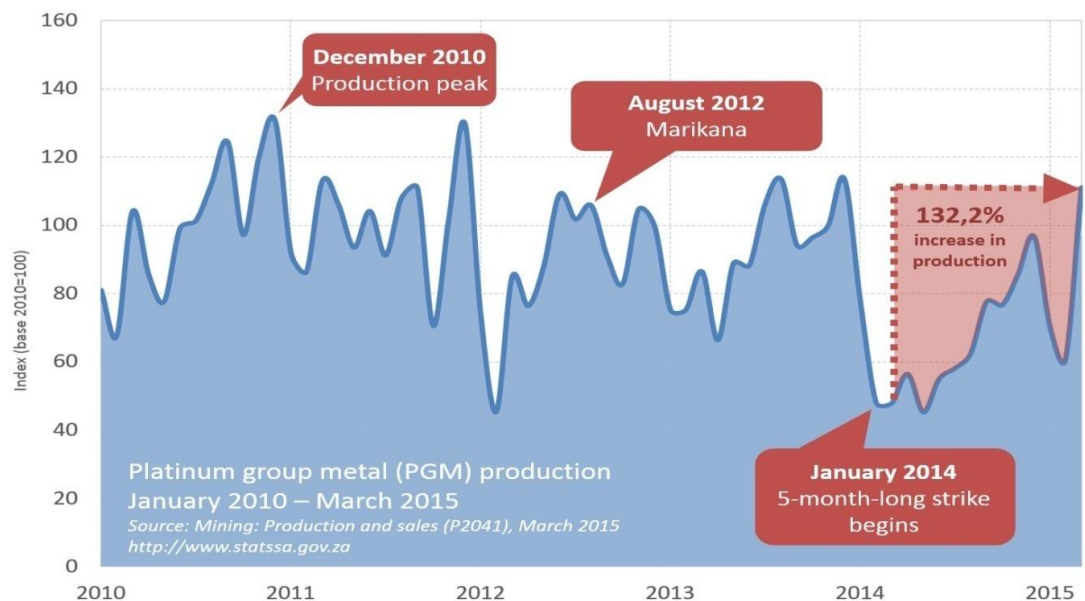


Figure 2: PGM production January 2010 - March 2015

Source: Mining: Production and sales (P2041), March 2015 <http://www.statssa.gov.za>

South Africa is the biggest producer and supplier of the platinum metal in the world and has the largest reserves with 68% production followed by Russia with 16% production. The years 2012 to 2014 saw an unprecedented number of strikes taking place in South Africa's platinum industry as indicated in figure 2 above. Those strikes were characterized by high levels of violence, occurring on the back of rivalry between two trade unions, the National Union of Mineworkers (NUM) and the Association of Mineworkers and Construction Union (AMCU), who were fighting for supremacy in the industry (Chamber of Mines of South Africa, 2014). Despite the 2012 mining strikes the mining bosses, industry leaders and government, were thereafter hit by a 5 month long strike in 2014 which almost crippled the industry. The strike in 2014 dragged South African platinum output down 31% to 2.985million ounces of platinum production, pulling global primary supply down 13% to 5.1million ounces of platinum (Seccombe, 2014), as depicted by the figure 3.

Slaughter, (1995) described foresight as “a universal human capacity which allowed people to think ahead, consider, model, create and respond to future eventualities”. Strategic foresight is thus based on an idea that organisations establish a system that warns them about unpleasant surprises, while at the same time it assists to identify emerging opportunities (Rohrbeck & Gemünden, 2008). Thus, this research aimed to explore the usage levels of strategic foresight in the Platinum Mining industry and its level of maturity. That is, were there no signs after the 2012 strikes that could have helped mining bosses, industry leaders and government to foresee the intensity levels of the 2014 strike and help them mitigate against it before it took 5 months to finish?

The use of strategic foresight thus seemed imperative for organisations in the platinum mining industry, as this industry is regarded as one of the four largest parts of the mining sectors, contributing (Coal, 26.4%; Gold, 21.1%; **PGM, 19%** and Iron Ore, 14.5%) in South Africa's mining production (Statistics South Africa, 2015). The problems that were faced by the industry, according to Slaughter's definition of strategic foresight, with the implementation of the tool, could have been better planned and prepared for.

It was against this backdrop, that this study sought to discover whether organisations in the platinum industry were using strategic foresight tools in order to ensure sustainability, organisational competitiveness and were better prepared to deal with future unpleasant surprises thus planning better for the

future.

1.2. Problem Statement

The South African platinum producers were struggling against micro and macro environment factors which included, substantial market, operational and societal challenges. On top of the list of those challenges were labour unrest, high-input cost inflation and an unfavourable metal price environment (Creamer Media, 2014). According to Ereheriene, (2015) platinum supply had been out-pacing demand for seven out of the past nine years and there was no sign that this would change anytime soon. After the 2008 global economic crisis, the industry had been struggling with an oversupply of the platinum metal, which had somehow contributed to the metal price volatility, high operating costs and labour unrest, as organisations had to relook at their portfolios and shut down some of their operations (Seccombe, 2014).

Goldman Sachs, forecasted the platinum price to stand at \$1,175 a troy ounce at the end of 2015, 6 percent, down from its previous forecast of \$1,250 an ounce (Ereheriene, 2015). The reduced output and supply that took place in 2014 did little to improve the price of the platinum metal as there was already in existence an oversupply even before the 5 month strike. During the 5 month strike there were visible fluctuations in the platinum price, but the declining trend continued, see figure 3 below.

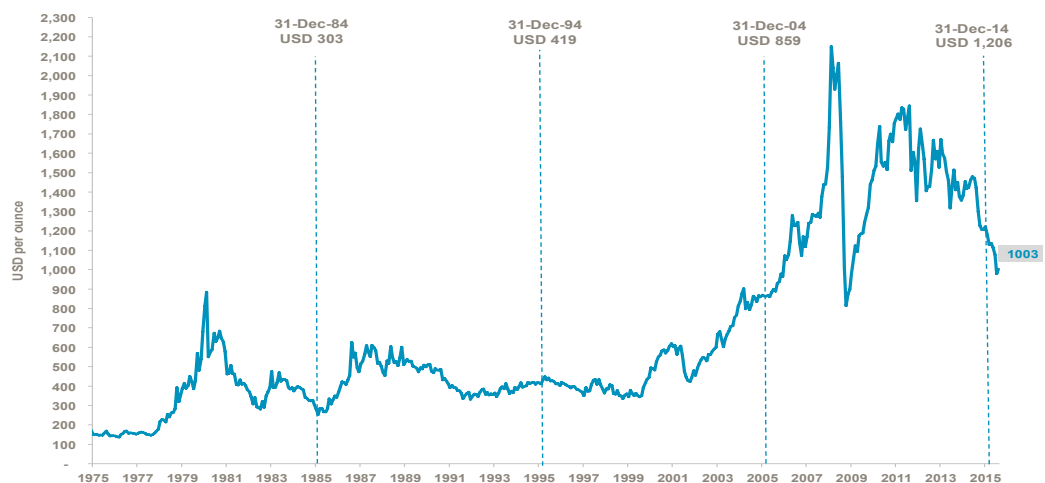


Figure 3: WPIC: Platinum Price Over Last 40 Years

Source: World Platinum Investment Council Ananlysis. Bloomberg

Van Rij, (2010) suggests that strategic foresight could be used to avoid unnecessary production interruptions (labour unrest, price volatility, etc.) by stating that the popular use of strategic foresight is to anticipate future threats, detect weak signals (Hiltunen, 2008), and identify potential surprise events thus eliminating threats to profitability and operational stability. In 2004 Makridakis, (2004) also stated that foresight could give leaders, business executives and government policy makers means of seeing the future and getting an understanding of the implications of the decisions they were making today on the future.

The platinum price volatility and mining costs and challenging conditions had led to some of the platinum mines re-looking at their portfolios and refocusing some of their assets, “Amplats put its Rustenburg and Union mining operations up for sale as it focused on its shallower, lower-cost and more mechanized assets” (Seccombe, 2014). As mentioned earlier, by the Chamber of Mines, the 2012 strike which was perpetrated by the unions fighting for dominance forced the mines to look at where they could save costs; and mechanization was seen as an option which would have two effects. Firstly, reduce labour costs as the majority of the work would be automated. And secondly, reduce health and safety risks that employees were exposed to during operation as mining platinum was getting deeper underground and dangerous for employees (Wexler, 2015). This then would mean fewer incidents thus fewer stoppages would take place, and also ensuring uninterrupted production due to legislation or unrest.

The platinum mines had mined out most of their shallow Merensky (which is a higher grade PGM ore) and were now producing from the less profitable UG2 (which is a lower grade PGM ore); this then meant higher input cost for the same or even lower output. According to Wexler's, (2015) article, Ivanhoe; a subsidiary to Ivanplats which owns 64% of the Platreef project; stated that mining if done through mechanization and done on a shallow UG2, would reduce production costs to an estimated \$322USD verses current cost of just below \$1000USD.

Most of the identified issues above had been in existence for several years, and had become more pronounced recently thus threatening the sustainability and profitability of several South African platinum mines. With all the benefits said to

be presented by strategic foresight, by Van Rij, (2010), it was of interest to understand whether the platinum mines were using it to mitigate against those problems and whether they were planning for the future to avoid future surprises or even for reaping rewards from identified emerging opportunities.

1.3. Purpose of Research

The purpose of this research was to explore the level of usage of strategic foresight in the Platinum industry by platinum mining organisations as it seemed, through literature review, as an optional tool to use during the trying times by organisations in the platinum mining industry. A study done by PwC, (2014), which was looking at the mining sector identified most companies' top exposures to include: labour relations, sustainable business plans or budgets, volatility of metal prices and exchange rates, infrastructure access and capacity and regulatory, political and legal environment. This was further reiterated by the Trends 2015 article from another study done by Deloitte, (2015), which stated that the mining companies continued to contend with price volatility, geopolitical turmoil, rising costs, declining grades and a general lack of access to financing. Having had to operate in such complex environments, this tended to impact on the industry's global competitiveness. So far the mining sector has made progress in turning around the productivity impact that the strikes had, but was it sustainable? See fig. 4 below.

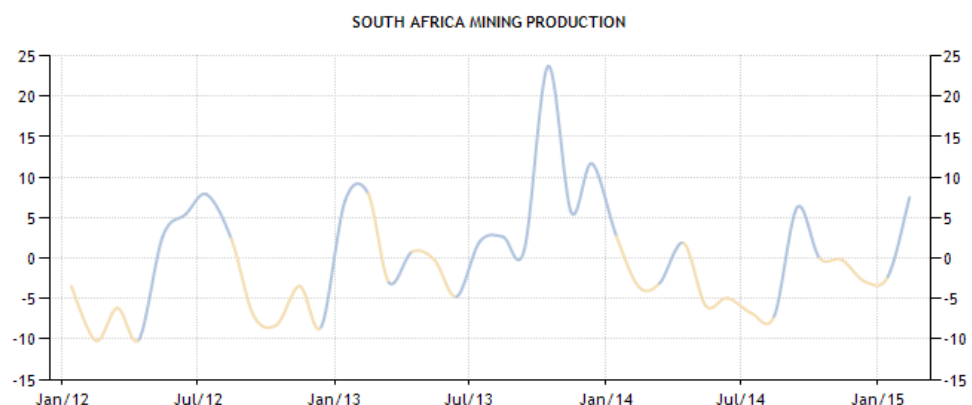


Figure 4: South Africa Mining Production

Source: www.tratdingeconomics.com | Statistics South Africa

1.4. Research Objectives

The study sought to gain an understanding of the maturity usage level of strategic foresight in the Platinum mining industry. The primary objective of the study was to:

- Establish the current maturity levels of strategic foresight in the organisations of the platinum industry

While the secondary objectives were:

- To determine which strategic foresight dimension is most matured in the organisations of the platinum industry
- To determine which strategic foresight dimension is least matured in the organisations of the platinum industry

According to Bartlett, (2000) and Beer and Nohria, (2000) and {{239 Beer, Michael 2000}} western experience and studies of leaders in primarily the European and American organisations, have been used as a basis for studying leading change practices. Because strategic foresight is also about changes the organisation needs to make, the researcher decided to do this study, but looking at it from a South African context. As Rohrbeck & Gemünden, (2008) stated above that strategic foresight in an organisation is, in essence, a system that warns organisations about the changes that need to occur in order to meet the desired organisational needs.

With the amount of literature available on strategic foresight, and the changes that have gone through the study of strategic foresight over the past, the researchers' objective was thus to understand if organisations understood the benefits of strategic foresight and implemented it according to the literature, looking now at the South African platinum mining environment, was it even possible? Or did organisations alter literature to suit the South African environment and leadership style.

For business this study aimed to identify gaps in the process. And also to look at how, without copying and pasting the European and Western way of implementing strategic foresight, South African organisations could benefit from it. Because strategic foresight is an inclusive process (Hideg, 2007;

Rasmussen, Andersen, & Borch, 2010; Rohrbeck & Schwarz, 2013); how inclusive were South African mining organisations, taking into account the mining sectors legacy of segregation. Also, had they transformed enough to get the full benefits of the strategic foresight process?

The objectives were to understand the benefits, if there were any, that organisations were getting from implementing strategic foresight. And also sought to understand if there were any missed opportunities from not implementing strategic foresight in their organisations.

2. Literature Review

2.1. Introduction

This purpose of this chapter is to review literature on strategic foresight, where it emerged and to an extent, what the academic community was currently saying about strategic foresight. Also, it is meant to highlight the benefits that organisations would get if and when they were to properly implement strategic foresight. For this they would require organisations to have an understanding of what strategic foresight was, how it worked and how best to implement it, looking at the organisations make up, culture and most importantly geographic locations.

In 1957, during a seminar, Berger stated that the future is the *raison d'être* (ultimate purpose) of the present and he considered that most of our behaviour could be explained and justified by the goals (projects) we set for ourselves (Godet, 2008), meaning we were the architects of our futures. Almost 60 years later Gaspar, Sarpong, & Saritas, (2015), alleged that strategic foresight was used in the present while accounting for the long-term consequences of the decisions using foresight.

Gaspar et al., (2015) recently defined strategic foresight “as a perspective, a systemic mode of thinking and a series of activities, which is based on the appreciation of the characteristics, abilities, behaviour patterns and status and room to manoeuvre in the social medium; in other words, as those thoughts and actions that prove to be insightful”.

2.2. Foresight

In 1984 Irvine and Martin defined foresight activities as the techniques, mechanisms and procedures for attempting to identify areas of basic research beginning to exhibit strategic potential; and by ‘strategic potential’, they had meant areas that were beginning to show promise of constituting a knowledge base that, with further funding, might eventually contribute to the solution of important practical problems (Godet, 2008).

But according to Irvin and Martins it was Joseph Coats who first gave a definition of foresight in 1985 stating that foresight was “a process by which one comes to a fuller understanding of the forces shaping the long-term future which should be taken into account in policy formulation, planning and decision making”. The difference between foresight and forecast was that foresight included both qualitative and quantitative means for monitoring clues and indicators developments and trend, it was said to also be best useful for analysis of policy implications. It prepared users to meet the needs and opportunities of the future (Godet, 2008).

Mendonça and Sapiro, (2009) quoted Martin and Irvine, who had in 1989 stated that “foresight and la prospective; la prospective being the French comparable of foresight; involved a much active stance, reflecting on the belief that the future is there to be created through the actions we choose to take today”. Foresights’ other distinguishing factor from forecast is that it admits qualitative techniques and does not give a misleading appearance of neutrality regarding the future outcome quality.

The importance of social currents and stakeholder was later noted by Hideg, (2007; Tsoukas & Shepherd, (2004) who stated that, foresight’s other ability is to grasp the features of social currents that were likely to have an impact and that it was important to bring in different stakeholders so as to source knowledge and also to “develop strategic visions and anticipatory intelligence”. This was similar to what early authors had mentioned above; foresight was a participatory process that required involvement from different stakeholder in order to be successful. The success that is being planned for would not be seen in the present but would be enjoyed in the future (Gaspar et al., 2015).

The above was meant to illustrate the differences between foresight and forecasting as these had been known to have been understood and used similarly even though they were different concepts. Also to show foresight’s similarities to the French La Prospective.

2.3. Strategic Foresight

The terms strategic, organisational or corporate foresight (it has been argued that these terms can be used somewhat synonymously) (Liebl & Schwarz, 2010), has been used to describe future research activities in corporations, (Heiko, Vennemann, & Darkow, 2010), or organisations. Martin, (2010) and Coates, (2010) emphasized that foresight dealt with the long-term future and Vecchiato & Roveda, (2010b) used strategic foresight deliberately to emphasize the tight relationship between foresight and strategy formulation (Rohrbeck & Schwarz, 2013).

As mentioned by Hideg, (2007); Tsoukas and Shepherd, (2004) and Rasmussen et al., (2010) also stated, that strategic foresight allowed multiple stakeholders to negotiate over how to attain a desirable future, after they had described it as meaning future oriented, participatory consultation of actors and stakeholders, both within and outside a scientific community. This they stated required creative thinking from the participants, who needed to extend their knowledge into the uncertainty of the future. Strategic foresight exercise dared traditional mono-disciplinary communities as it involves a wider cross-societal discussion of needs, possibilities and priority setting, including non-scientific actors in the discussion (Andersen & Borup, 2009).

However, deep divisions still remained with regards to who and how strategic foresight should be conducted in that it should be elite, i.e. conducted by experts and scientist only or inclusive with multi-stakeholders and how to manage subjectivity within the process (Cook, Inayatullah, Burgman, Sutherland, & Wintle, 2014).

According to Appiah and Sarpong, (2015); Godet, (2008) and Rohrbeck & Schwarz, (2013) who noted that although interest in strategic foresight was growing, organisations seemed to be choosing a myopic stance when it came to the implementation of strategic foresight, this they stated could have been due to a lack of understanding of the process or lack of interest. This then brought to light the question of the futurist role; which is: long-term pedagogy, finding solutions for current problems by challenging administrative structures and asking individuals to rethink not only how but why they do

certain things (Inayatullah, 2000); being a solution for some organisations who seemed to struggle with the implementation of strategic foresight, it could also eliminate the subject and concerns of subjectivity.

Besides planning and emerging opportunities identification, other values contributions of strategic foresight as described by Rohrbeck & Schwarz, (2013), is that it encourages not only the sharing, but also challenges the firm's mental models, and in this way the firm can eliminate blind spots and identify weak signals in its sense-making of the environment and of the future.

Weak signal or as Hiltunen, (2008) prefers, future signs; according to Ansoff & McDonnell, (1984) are first symptoms of strategic discontinuities, i.e. symptoms of possible changes in the future, acting as warning signs (threats) or signs of new possibilities (opportunities). Burt & Wright, (2006) further stated that discontinuous change, which was said to be a non-incremental sudden change that threatened the existing or traditional authority or power structure, was said to drastically alter the way things were currently being done or have been done for years, it could come from any area in the organisation e.g. political, economical, socially and technologically (PEST), but organisations missed this as they tended to focus on one area and ended up neglecting the others. This was again reiterated by Gaspar et al., (2015) who noted that when organisations choose a viewpoint, an inhibition emerges that which prevents them from looking at a problem from another perspective thus creating a blind spot.

Strategic foresight activities can be classified according to three criteria's: the major focus (field); level of analysis (decision makers are interested in the results of the analysis of this activity); and the time horizon (see fig 5 below) (Vecchiato & Roveda, 2010). The focus on different activities helps organisations properly identify required changes, thus being able to mitigate against the uncertainties that might negatively impact on the operation of the organisation.

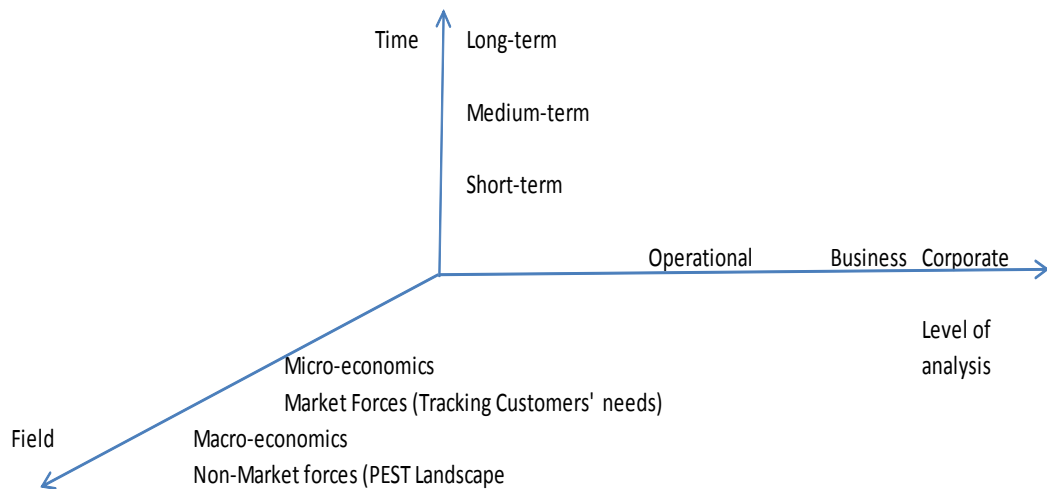


Figure 5: General Classification of Strategic Foresights

Source: Foresight in Corporate Organisations ((Vecchiato & Roveda, 2010a)

And lastly strategic foresight often focuses on issues of uncertainty regarding the drivers of change, Wayland, Sarpong, and Saritas, (2015), and as Courtney, (2001) stated in the opening of his book: “with rapid change comes uncertainty and with uncertainty comes risk – and great opportunities”. According to Milliken, (1987) there are three specific types of uncertainty concerning drivers of change: uncertainty about their evolution (“state” uncertainty); uncertainty about their impact on the competitive position of the firm (“effect” uncertainty); and uncertainty about the response viable to the firm (“response” uncertainty). Two environmental features, in particular, bring about the general level of uncertainty: complexity and rate of change (Daft, Sormunen, & Parks, 1988; Duncan, 1972).

2.4. Strategic Foresight Process

From their study on how routine affects strategic foresight, Appiah and Sarpong, (2015) noted that even though there was no conclusive study for how organisations could implement strategic foresight there was, however, consensus as to the appearance of key antecedent factors that influenced organisation’s ability to successfully align signals from strategic foresight

activities with organisational plans. (Cook et al., 2014) also mentioned that regardless of the many successes with the strategic foresight exercise, there still remained risks for the organisation's if after the exercise, poor choices were made; and those risks they claimed had the potential to damage the organisation. They also contributed the confusion to the flexibility in the diversity of tools available to support the strategic foresight process and that meant the details were crucial for success. And Gaspar et al., (2015) also warned those participating in the strategic foresight activity, noting that the activity should be deliberate and concentrated in order to achieve desirable results.

There were many processes and activities that organisations could choose from in the study and literature of strategic foresight. The strategic foresight process is dynamic in nature as noted by Gaspar et al., (2015), they claim that the reason for its dynamism was because of its dual nature in that it incorporates the action and the results at the same time. From the literature review done, similarities or commonalities were noted by the researcher. Most of the literature reviewed had the following as must haves during a strategic foresight process, exercise or activity:

- Environmental Scanning (so as to detect trends, weak and strong signals)
- Analyses and Interpretation of findings from scanning (this one helps in the formulation of scenarios)
- Strategy selection
- Action

Paliokaité, Pačësa, and Sarpong, (2014)'s model also depicts the activities noted above which most researchers in the literature highlighted as being imperative for a successful process. But they also integrated the organisation's capabilities, highlighting the role that the organisations needed to play.

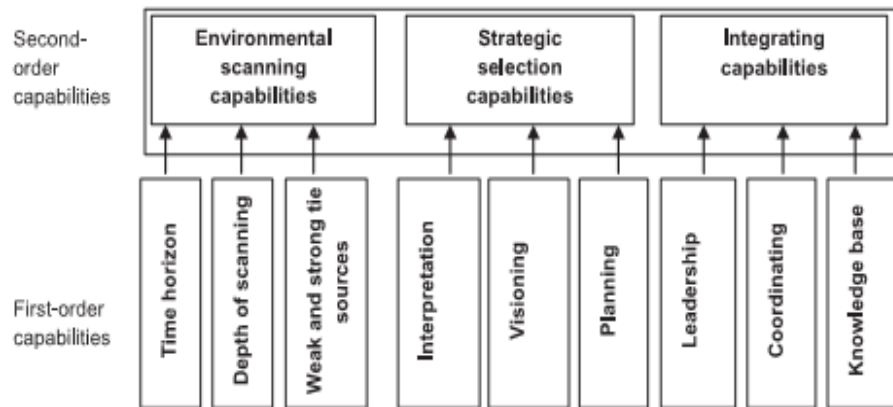


Figure 6: Capability approach to strategic foresight

Source: Conceptualizing Strategic Foresight : An Integrated Framework ((Paliokaité et al., 2014)

2.4.1. Type of Organisation

Rohrbeck and Schwarz, (2013) noted that the evolutionists argued that firms have insufficient sensors to perceive change (Winter, 2004), they had established internal organisations that were too complex (Hannan, Polos, & Carroll, 2003), and consequently they were too inert to respond effectively and timely enough to survive radical change (Hannan & Freeman, 1977). They further stated that adaptionists disagreed with that, pointing out that many firms (regardless of size) had already survived discontinuous change, proving that organisational adaptation was possible (De Geus, 1997) and (Miles, Snow, Meyer, & Coleman, 1978).

Appiah and Sarpong, (2015) continued on and noted that organisations who failed to respond timely to the changes, i.e. the threats, opportunities and signals; could be indicating a flawed strategic foresight system. They further note that organisations should guard against competency traps that reinforce past practices that proved successful in the past and also the culture governing the organisation. Noting that culture will determine the organisations receptiveness of the strategic foresight process or not, thus determining if organisations benefited from the process or did not. This is similar to what

Eisenhardt & Zbaracki, (1992) and Rohrbeck & Schwarz, (2013) identified, bounded rationality and groupthink, which they noted as being negative influencers to decision-makers thus encumbering proper implementation of the strategic foresight process. Weigand, Flanagan, Dye, & Jones, (2014) highlighted that strategic foresight should challenge mental models and support management in working with hypotheses, rather than rushing to create consensus on the basis of shared (and potentially false) mental models (Shenhar, Tishler, Dvir, Lipovetsky, & Lechler, 2002).

In 1995 Appelbaum and Vecchio, (1995), emphasized the importance of understanding what drives the changes in an organisation, thus ensuring a better response to the threats being presented or capitalize on the opportunity that could also be presented, thus ensuring future and continued success either way. Vecchiato & Roveda, (2010b) noted that the real challenge of strategic foresight is not only to detect drivers of change promptly, but to reshape the strategic beliefs of managers who were leading the change so that they could avoid biases and being presumptuous about the future. They further noted that increased competition resulting from globalization, the growth of consumer power and scientific-technological revolution were the main drivers of change in organisations in every sector. Also, among other influential forces of organisational change are the emergence of new competitors' innovations in technology, intervention from external bodies, government regulations, new company leadership and evolving attitudes towards work.

2.4.2. Environmental Scanning

Studies on general ignorance about radical change date from long, Ansoff, (1975); Ansoff, Declerck, and Hayes, (1976) observed how the inherent ignorance of firms about changes in the environment often resulted in missed opportunities and a failure to respond to threats. Ansoff, (1975) and Rohrbeck & Schwarz, (2013) claimed that by scanning the environment for weak signals and that an organisation that spots and correctly interprets the disruptive potential for its business will be in a good position to respond to the change, and retain, and even advance, its competitiveness.

Environmental scanning is part of a diagnosis of the organisation's current position and positioning as this helps the organisation detect promptly the opportunities and the threats brought about by emerging trends and to deal with them properly (Vecchiato & Roveda, 2010a), and also helps focus organisations' resources in order to be or remain relevant and competitive. The importance and benefits of organisational diagnosis is described by Cummings & Worley, (2014) and Rumelt, (2012) who defined diagnosis as the process of understanding a system's (organisations) current function. Further stating that diagnosis provided the knowledge of the organisation needed to design appropriate interventions, and that if done well, it clearly pointed the organisation towards a set of appropriate intervention activities that would improve the organisation's effectiveness. Rumelt, (2012) further stated that a kernel of a good strategy contained three elements; a **diagnosis**, a guiding policy and a set of coherent actions.

Rohrbeck and Schwarz, (2013) noted just how imperative it was for organisations to develop mechanisms that would detect weak signals, interpret them and respond accordingly thereafter. Day & Schoemaker, (2006) carried on and stated that the key is to quickly spot these signals and respond to them before the competition or before they become major problems for the organisation. This was similar to what Hines & Bishop, (2006) noted, stating that with recent advances in the art of environmental scanning, it was no longer about finding the information, as information was now freely available, but about understanding and acting on it quickly and creatively before the competition.

Senior management should seek advice on how best to scan (May, Stewart, & Sweo, 2000) and also encourage scanning of other areas (Alexiev, Jansen, Van den Bosch, Frans AJ, & Volberda, 2010). In addition, using multi-disciplinary teams should reduce the risk of overlooking or misinterpreting change. Godet, (2008) stated that, to achieve the strategic foresight goals it was important to bring together those who could determine the desirable with those who could determine the possible.

2.4.3. Analysis

Gaspar et al., (2015) recently stated that strategic foresight is active, expedient and future oriented, but only by its insight, oversight, foresight and sight. Causal Layered Analysis (CLA), an analysis method by Inayatullah, (1998), can be seen as an effort to use post-structuralism, not just as an epistemological framework, but as a research method, as a way to conduct an inquiry into the nature of past, present and future (Inayatullah, 1998). Sarpong & O'Regan, (2014) advised organisations as to just how the past, present and the future were not discrete divisions, but that they folded backward and forward, collapsing onto each other, emerging from each other and constantly determining each other as organisations constructed and reconstructed the past, present and future. Below is an illustration of how the past, present and future are correlated with each other.

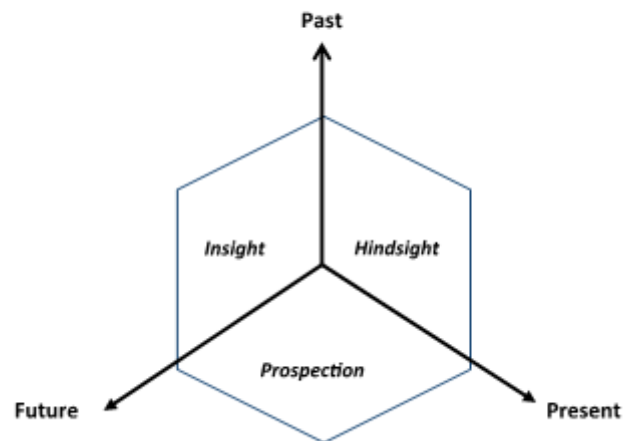


Figure 7: Organizing dimensions of strategic foresight

Source: Organizing dimensions of strategic foresight in high-velocity environments (Sarpong and O'Regan, 2014)

Inayatullah, (1998) further stated that the CLA process was meant to create an environment whereby alternative futures are created and Riedy, (2008) after comparing CLA to the Integral Theory stated that, CLA was a culture focus analysis, which left out the behavioural and systemic analysis. Thus he advised that CLA should be used with other forms of analysis, which happened to be what Inayatullah, (1998) also suggested at the end of his paper, stating that is

should be used in conjunction with other analysis tools like visioning and or emerging issues analysis.

2.4.3.1. Causal Layered Analysis

Riedy, (2008) stated that one of Inayatullah’s most valuable contributions to futures work had been the development of a new futures method, called causal layered analysis (CLA), which sought to draw out different levels of reality and ways of knowing. Richard Slaughter was quoted saying ‘Causal layered analysis provides a richer account of what is being studied than the more common empiricist or predictive orientation which merely ‘skims the surface’. Inayatullah, (1998) noted that CLA was best used before scenario building as it allowed for a vertical space for scenarios of different categories and was best suited with individuals of different cultures or if seeking different approached to problem solving. He closed off by mentioning that CLA was not an easy process to follow, but was worth the effort. Using Medical mistake, below we show how CLA works.

<i>Causal layered analysis level</i>	<i>Medical mistakes</i>
Litany	High rate of medical mistakes Solution: more GP training
Systemic causes	Audit on causes of mistakes: communication, new technologies, administration Solution: more efficient, smarter systems
Worldview	Reductionist modern medical paradigm creates hierarchy Solution: enhance power of patients and/or move to different health systems
Myth/metaphor	"Doctor knows best" Solution: "Take charge of your health"

Figure 8: Causal Layered Analysis - Medical mistakes illustration

Source: Causal Layered Analysis (Inayatullah, 1998)

2.4.3.2. Emerging Issues Theory

According to Molitor, (2003), emerging issues analysis seeks to identify bellwether (something that leads or indicates a trend) issues before they become unwieldy (unmanageable) and expensive. He claimed that it searched for new possibilities and opportunities. Although solving these issues could help minimise harm and help organisations respond more swiftly to emerging challenges, it had very little political pay-off. Thus Inayatullah, (1998) recommended CLA be used in conjunction with emerging issues analysis as they complemented each other. Below is a depiction of emerging issues analysis. Emerging issues analysis would work best in the first and second stages of the CLA process those being the Litany and the Systemic Causes.

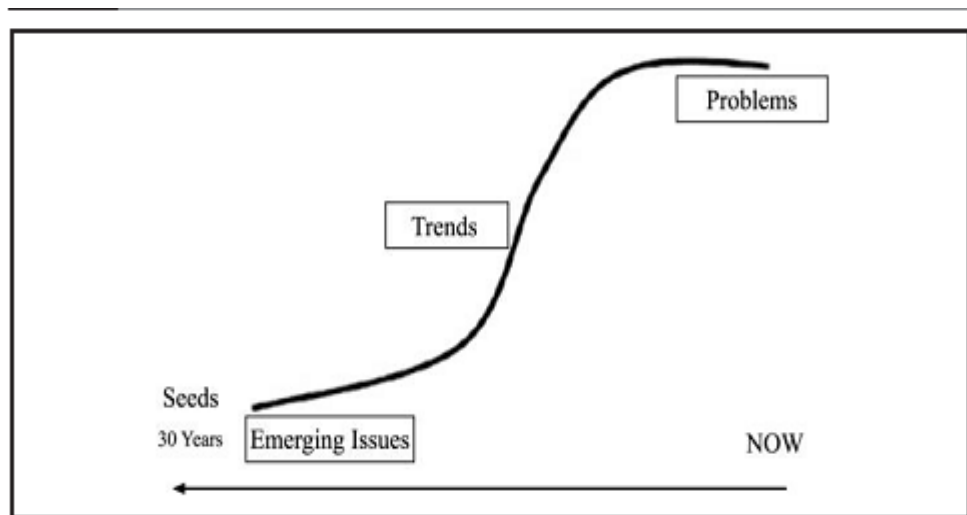


Figure 9: Emerging Issues Analysis

Source: Six Pillars: Futures Thinking for Transformation ((Inayatullah, 2008)

2.4.3.3. Integral Theory

Wilber, (2000) contends that “Integral Theory contends that reality is composed of holons or wholes that are parts of other wholes. All holons, from atoms to animals to humans, have both an objective exterior expression (e.g. body) and some form of subjective interior experience (e.g. feelings)”. At the same time, all holons are both whole individuals and parts of a collective,. These twin distinctions between the exterior and interior, and the individual and collective, give rise to four native perspectives, or ways of knowing, represented by the quadrants below (Riedy, 2008).

Riedy, (2008) also stated that CLA is the 4th quadrant of the Integral Theory as it only focused on culture and neglected behaviour and systemic analysis. That is exactly what Inayatullah, (2004) and Slaughter, (2001) noted as well when defining CLA as a culture quadrant method within the broader integral method.

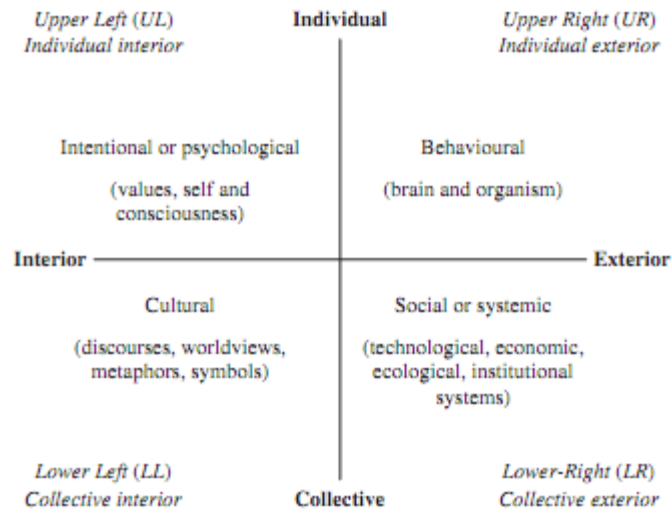


Figure 10: The quadrants in Integral Theory

Source: An integral extension of Causal Layered Analysis ((Riedy, 2008)

- Behavioural quadrant (Upper Right): an exterior perspective on individual holons, revealing the structure and actions of organisms.
- Systemic quadrant (Lower Right): an exterior perspective on collective holons, revealing the shared structure and actions of systems.
- Psychological quadrant (Upper Left): the interior perspective of individual holons, which is the realm of the self, consciousness, personal experiences and values.
- Cultural quadrant (Lower Left): the interior perspective of collective holons, which is the realm of shared discourses, worldviews, metaphors and symbols

(Riedy, 2008)

2.5. Collaboration

Andersen and Borup, (2009), stated that the strategic foresight exercises were challenging traditional mono-disciplinary communities as it involved a wider cross-societal discussion of needs, possibilities and priority setting, including non-scientific actors in the discussion. Healey, (1996) and Friedmann, (1993) also stated that collaborative planning and consensus approach has been deemed helpful in dealing with complex cross-sectional engagements where participants may have had conflicting viewpoints and interests. Strategic foresight literature had identified collaboration as a key factor when going through the process in order to succeed and be better able to mitigate against future unforeseeable and capitalize on emerging opportunities.

In 2005 Chaharbaghi, Adcroft, Willis, Todeva, and Knoke, (2005), alleged that collaboration had a clear impact on business performance; therefore, a wide variety of organisations were starting to join efforts and work together under a large number of collaborative models to deal with market dynamism and hypercompetitive global environments. A general definition of collaboration, according to business dictionary, is a cooperative arrangement in which two or more parties (which may or may not have any previous relationship) work jointly towards a common goal.

The benefit stated by Romero, Galeano, and Molina, (2009) of collaboration was that it was widely recognized as a mechanism for leveraging competitiveness and thus increasing survivability in turbulent market conditions. Rasmussen et al., (2010) also stated that the basic aim of transdisciplinary approaches in strategic foresight was to carry out participatory processes, thus creating ownership of the visions and strategies that were thereafter developed.

2.6. Strategy

“Strategy is the pattern of decisions in a company that determines and reveals its objectives, purposes, or goals, produces the principle policies and plans for achieving those goals, and defines the range of business the company is to pursue, the kind of economic and human organisation, it is or intends to be, and

the nature of the economic and noneconomic contribution it intends to make to its shareholders” (Andrews, 1997).

Porter, Goold, and Luchs, (1996) stated that Corporate strategy is both the darling and the stepchild of contemporary management practices. This they claimed was because, as a darling, CEO’s have been obsessed with diversification and, as a stepchild, almost no consensus exists about what it is.

Rumelt, (2012) defined a good strategy as being simple and straightforward. It involved “strength applied to the most promising opportunity.” He continued on to state that a good strategy involves multiple analyses and the painstaking development of thoughtful, expertly implemented policies, designed to surmount obstacles and move the firm profitably ahead. It is a highly focused, problem-solving activity that tackles fundamental issues, not ancillary or specious ones. It uses the intelligent application of advantage to reach new heights.

Hamel, (1998) posed a question on his opinion piece as to the relevance of strategy with regards to strategy innovation. He asked why strategy was no longer a big idea in most companies. Why did it seem to command so little of top managements time and attention? And why were planners an increasing endangered species. Porter et al., (1996) two years prior, had stated that the track record of corporate foresight was dismal after he had studied 33 large prestigious U.S. companies who had diversified through mergers. Appiah & Sarpong, (2015), 17 years later noted the myopic stance that organisations have when it came to the implementation of strategic foresight even though they had initially shown interest in the process.

3. Research Questions

Based on the above objectives, the primary research question and its corresponding hypothesis were formulated as follows:

PQ1: What is the maturity level of strategic foresight in the organisations in the Platinum industry?(using Rohrbeck & Gemünden, (2008) Framework)

To effectively answer this primary question, there are sub-questions with their hypothesis, which need to be evaluated. These sub-questions are as follows:

Sub-question 1

SQ1: Which strategic foresight dimension is most matured in the organisations of the Platinum industry?

Sub-question 2

SQ2: Which strategic foresight dimension is least matured in the organisations of the Platinum industry

4. Research Methodology

4.1. Research Objectives

The objective was to see if the Platinum Mining organisations were using strategic foresight, how they were using it and also if they were benefiting from using the tool. Also, this research aimed to investigate the level of usage of strategic foresight in the Platinum Mining sector as the industry was and had been going through difficulties in the market. If the organisations were not using strategic foresight, it was of interest as well to discover what they were using and why had they chosen not to use strategic foresight.

4.2. Research Design

A qualitative research approach was used which Bailey, (2014) stated was normally recognisable via the use of methods that included, at least, in-depth interview and group-moderation techniques; researchers who offer expertise and knowledge to cover the procedures they use and the interpretations they derive; a particular objective to answer 'why?' and 'how?' questions; and an agency context (either commercial or academic) through which sundry clients can obtain such work and services.

This study was conducted in a qualitative exploratory method; as the research questions needed to be contextualized, and the researcher wanted to use experience/perspectives of the different individuals in that particular organisation or phenomenon (Mukhopadhyay & Gupta, 2014); and also this study sought to understand the phenomena of strategic foresight in the Platinum mines, seeking insight as to the choices being made by decision-makers in the Platinum Mining sector (Saunders & Lewis, 2012). Experts were interviewed following a semi-structured approach for this study as it allowed for open ended and guiding questions to be used during the interviews. This enabled the researcher to gain insights on historical information that might not have necessarily been obtained in a different format. The use of open ended questions used in accordance with the approach suggested by Creswell, (2013), that were to enable the researcher to gain richer insight into the

phenomena and also to allow the participants to speak freely about the use of strategic foresight in the Platinum Mines.

A deductive approach was followed, as it is a theory, testing process which commences with an established theory or generalization, and seeks to see if the theory applies to specific instances (Hyde, 2000) and (Saunders & Lewis, 2012). It was also based on the model by Rohrbeck & Gemünden, (2008) content and narrative is employed in the presentation of these results. Also, these were in line with what was noted in the literature as key factors for ensuring proper strategic foresight which were communication, scanning methodologies, stakeholder involvement and the organization culture.

Because of the nature of the research, interviewing of a small number of experts and face-to-face interviews, which Opdenakker (2006) states one of the benefits of this is the elimination of time delay from the time a question is asked to when the response is given thus getting a spontaneous response to the question being asked, a semi-structured interview process was used, (see Appendix A for interview schedule). And also as this was an exploratory approach which would require the observation of interviewees, so as to get an in-depth understanding of their true feeling about the subject, the qualitative approach seemed appropriate.

4.3. Population

The population used was in the two big tier Platinum Mining houses; Anglo American Platinum, the Head of Strategy, Finance Managers and Operations Manager; Lonmin, the Head of Business Development and Sustainability and the Senior Finance Manager; and one middle tier platinum mine; Royal Bafokeng, the Executive Risk, Assurance and Suitability, Cost and Risk Managers; in the Rustenburg area. Initially the process would have used the three major platinum houses in Rustenburg which would have included Impala Platinum, but there was no willing participant from Impala Platinum Mines. Although, this was the situation, these acquired interviews were sufficient to investigate the phenomenon of strategic foresight in this study based on two fronts. Firstly, three of the four targeted Platinum mines were obtained, with these mines being a mixture of big and middle tier mines. Anglo American Platinum and Lonmin are two of the three biggest platinum mines in the world,

and Royal Bafokeng being a middle tier platinum mine. Secondly, (Creswell, 2013) indicated that five to twenty five interviews were required for phenomenological research, while Morse, (1994) had earlier argued that at least 6 interviews are required for phenomenological study. In this study a total of nine interviews was conducted to investigate the use of strategic foresight.

4.4. Unit of Analysis

Lewis-Beck, Bryman, and Liao, (2003) defined a unit of analysis as the subject of the study and was the most basic element of the research. Therefore the unit of analysis of this study was a senior to executive individuals working in the platinum mines, who was experienced and involved in the strategy formulation process and also responsible for the execution of the strategy in the organisation.

4.5. Sample

A non-probability sampling technique was used as there was no sampling frame available (Saunders & Lewis, 2012). Also a purposive sampling method was used to select participants most likely to understand the problem and therefore provide useful responses to the research questions (Creswell, 2013). The interviews were separated into two sessions, the first session being the corporate heads of department's interviews, those being the Head of Strategy, Head of Business Development and Sustainability and lastly Executive Risk, Assurance and Sustainability. The first session's sample was selected using quota sampling as Saunders & Lewis, (2012) defined this as a type of sampling that ensured sample selection that represented certain characteristics in the population chosen by the researcher. The second session consisted of the operational heads who were directly involved in the strategy at the operational level. The type of sampling employed here was to be snowball sampling from the heads of departments, but it ended up being self-selection sampling which Saunders & Lewis, (2012) defined as being members who are asked to identify themselves as willing to take part in the research. Finance, Operations, Cost and Risk managers were interviewed in the second session. This sample was

still relevant to the study as they too were part and responsible for strategy at the operations.

4.6. Ethical Consideration

For the purpose of this research, ethical clearance obtained from the Gordon Institute of Business Science's ethics committee, see Appendix B. Before the interviews commenced ethical considerations was explained to the participants and the respondent's voluntary participation and right to withdraw at any time. The right to confidentiality was also explained.

4.7. Interview Process and Data Collection

A total of 9 interviews was carried out by the researcher lasting for approximately an hour each, a total of about 10hrs was spent on the interviews. All the interviews were face-to-face interviews at the participants' offices, that is three were done at corporate and six were done at the mines/business units.

In preparation for the interviews, background research on the organisations was conducted using websites, company websites and related media sites. Literature review that informed the interview schedule was conducted, i.e. the article by Rohrbeck & Gemünden, (2008). Eight out of the nine interviews were recorded as one participant refused to be recorded, but continued with the interview on the basis that everything said would be handwritten.

This he said was so that nothing could be traced back to him, even though confidentiality was explained and assured him before the interview commenced. The last participant didn't seem to even want to do the interview at the beginning, even though he agreed beforehand. This was upsetting to the researcher as the researcher had gotten lost on the way to the interview and when she got there the participant refused to be recorded. This did throw the researcher back a bit as the question of "why are you wasting my time" came to mind to the researcher. But because this was important to the researcher and the researcher she accepted the terms and conditions presented by the participant of not being recorded. As the interview continued and the researcher

thought and hoped, that trust on the interviewer was gained, the participant seemed to relax. He even walked the researcher out afterwards, even though he had claimed that he had a meeting to rush off afterwards as the organisation was preparing for the memorial day for the Marika Massacre. The recorded interviews were then transcribed by a professional recommended by GIBS but still had to be cleaned up by the researcher as the quality work of the “professional” was not good.

The interviews, as mentioned above were semi-structured thus ensuring flexibility of the discussion. The main reason for the structure of the interview, i.e. face-to-face and semi-structured, was so that the researcher could be able to observe the participant during the interview as they responded to the questions being posed to them. The questions were structured so that the interviewee could give a summary of the rest of the questions that were to be asked for example, how long had they been involved with strategy formulation; and also could they give an account of their level of involvement. This question allowed the researcher to gage the level of explanation that would be required from them and also give the researcher time to formulate relevant example for the follow up questions looking at the organisation being interviewed. For example, at Lonmin, the impact of Marikana on how they deal with different stakeholder. At Anglo the impacts of the five months strike when looking at customers, etc. And at Royal Bafokeng the monitoring of the environment, how had that worked to their advantage as they were not affected by the five month strike.

During the interviews some of the questions seemed easily understood by the participants and other proved difficult as one participant after the interview stated that he felt the questions were too technical. This was particularly surprising as the so called questions were or should have been in-line with what he was directly responsible for in his responsibilities and role.

Another interesting fact that the researcher observed was that none of the interviewees were females; black or white. Most senior teams at the operations consisted soles of males; black and white. But the variety of the male participants was evident, black and white, young and old. This could have been a coincidence if it was observed in one organisation, but it was in all the organisations, this was observed both at corporate and business unit or

operations. The female leadership which was noticeable at the corporate level as either Head of HR or Head of Corporate Affairs.

The reason for having the interviews at the participants place and time of their choosing was so that the researcher could ensure a certain level of comfort, for the participants, as they felt they were sharing sensitive information, case in point the participant who did not want to be recorded. The problem or the observation that the researcher made was that when the recording stopped and the interview was officially ended, the participants would relax and this was physically observable as they would exhale and or take a deep breath. One participant afterwards commented, noting that because of the current conditions in the industry everyone was cautious of what they said, how they said it and to whom it is said and about whom.

The distinction between the two sessions was also obvious as the self-selected sample, as Saunders & Lewis, (2012) put it, had strong feeling and opinions about how the strategic foresight process was conducted at corporate versus operations, and also had reasons why it either failed or took longer to implement fully. Even the conversations that were held after the recording were different when comparing quota and self-selection sample, quota believed they were on the right track, whereas self-selection felt, after the recording, that things were falling apart.

4.8. Data Analysis

After the interviews, recordings were loaded to the system; notes were made to capture the essence of the whole interview, i.e. the participant's behaviour at the beginning, during and after the process. And also notes of the current conditions in the industry so as to recall what was happening during that period as two of the three mines were about to announce closure of some of their operations thus retrenchments that would soon follow. The researcher felt it important to note that as most of the participants were from the affected mines and their responses seemed to be guarded and guided by that realization and appreciation that their job/positions might be on the line.

Recordings were then sent out for transcription and upon their return; they were cleaned out and loaded on ATLAS-ti. for coding and analysing. Because this

was a deductive approach, linkages between the interview and identified themes were made and new themes that came out of the interviews were noted and recorded. New themes that came out were identified and the researcher went back to add them to the literature review section.

4.9. Research Limitations

- The sample size in the end became an issue, with the lack of response from Impala Platinum Mines.
- Because the researcher was relying on the quota sample to snowball the sample at the operations which Saunders, & Lewis, (2012) defined above, the study was also affected as the researcher now had to use self-selective sample at the operations. This was an issue, as minor as it was, as the people who were now being interviewed, as much as they were involved in the operational strategy formulation, had their own agenda when agreeing to do the study.
- Again, because of the numbers, this study cannot be taken as being exhaustive and conclusive for all the platinum mines.
- The time horizon of the interviews and the type of participants needed to be interviewed was also a limitation as most of the participants were directly involved with the restructuring in their organisations.

5. Results

5.1. Introduction

In this chapter the researcher presents the results of the study, which were obtained through a qualitative method. The purpose of this research was to understand the extent to which strategic foresight was applied in the Platinum Mining sector. Strategic foresight is based on the concept that organisations establish a system that warns them about unpleasant surprises, while at the same time it assists to identify emerging opportunities. This was deemed imperative in the Platinum Mining sector as the industry, in general, operates in conditions of uncertainty such as unclear legislative policies, highly unionised sectors with unstable commodity prices in which it is a price taker.

In the interview process the researcher was therefore to gain perspective on the application of strategic foresight from the viewpoints as applied by the organisations, also to establish a rapport with the participants and build trust in line with the proposed framework from Qu & Dumay, (2011).

5.2. Respondent's profile in brief

A total of nine interviews was conducted, with participants from Anglo American Platinum, Lonmin and Royal Bafokeng Platinum. The nine interviews conducted in this study were from strategy, finance and risk areas of the organisations. There was, however a participant from production so as to get a direct operations perspective of this phenomenon as the people who execute the strategy. This participant was quoted as follows on his role in strategy development in the company:

"I've never been involved in strategy development..... At the operation, we only do strategy execution"^{RP3}

Similar sentiments were shared by all of the operations respondents:

"Most of the parts of strategy within (my organisation) is handled at our corporate office."^{RP2}

“At (my organisation) I was involved only in the thought process, the divisional strategy that feeds in on the overall strategy, budgeting and long term planning.”^{RP6}

But from one organisation, there were claims of involvement in the whole process:

“So that is why I say we are involved right down to the bottom worker.”^{RP8}

This is supported by his colleague:

“my experience in the strategy development in terms of the risk management, I have experienced a lot of things like the business plan”^{RP9}

The participants' roles, experience in the platinum industry, in strategy, is given in Table 1. The participants had an average of ten years in the Platinum mines, with the longest having fifteen years and shortest having three years. They had experience in the areas of strategy development and execution.

Table 1: Research Participants Profiles

Participants	Role	Experience in Platinum Industry	Experience
RP1	Head of Strategy (Corporate)	12 years	<p><i>“Nearly 8 years now [in developing strategies in platinum industry]”</i></p> <p><i>“ .. It’s actually one of the most...I think it is one of the most difficult roles one can have because of the amount of constant things that are changing and you constantly have to be aware of and respond.”</i></p>
RP2	Senior Finance Manager (Operations)	10 years	<p><i>“Most parts of the strategy within (the organisation) are handled at corporate office, but we are intimately involved in operational strategy”</i></p>
RP3	Production Manager (Operations)	6 years	<p><i>“I’ve never been involved in strategy development..... Strategy for operations in (the organisation) gets developed by corporate and then the function strategy and the business strategy also gets developed by corporate. At the operation, we only, only, only do the strategy execution”.</i></p>
RP4	Finance Manager Operations (Operations)	7 years	<p><i>“I have been involved in developing strategy, but for the mines (operations)....”</i></p>
RP5	Head of Business Development (Corporate)	8 years	<p><i>“..and now at (my current organisation) I am focusing on both [strategy development and business development]”</i></p>
RP6	Senior Manager Finance (Operations)	15 years	<p><i>“Since (my previous organisation) which was in 2006, I have always been involved with strategy development”.</i></p>
RP7	Executive: Risk, Assurance and Sustainability (Corporate)	3 years	<p><i>“I think for most mining companies, including ours, strategy development is very much driven from the operational side” “..... We use business dependency model that considers our value chain, it considers what is happening internally / externally. It considers your typical PASTEL and we could cater for these ups and down over time”</i></p>
RP8	Cost Management (Operations)	15 years	<p><i>“We develop strategy to manage costs, and to staying within the business plan”</i></p>
RP9	Risk Officer (Operations)	13 years	<p><i>“My experience in strategy is in term of risk management”</i></p>

5.3. Maturity Level of strategic foresight

The approach of the investigation was adapted from a best practices framework for strategic foresight as proposed by Rohrbeck & Gemünden, (2008), which was similar to Vecchiato & Roveda, (2010)'s general classification of strategic foresight model, which provides five benchmarks for evaluating the maturity of strategic foresight in multinational enterprises. Those were information usage, method sophistication, people and networks, organisations and culture.

The literature states that type of organisation, environmental scanning, analysis and interpretation of findings, strategy selection and actions taken thereafter, are key activities for a good strategic foresight (Paliokaitė, Pačėsa, & Sarpong, 2014). Collaboration was also said to be a key contributor to a good strategy (Healey, 1996).

5.3.1. Information Usage

When scanning the environment, what type of information were these organisations using, that is, was it internal or external? Time horizons, how long were those and sources of that internal and external information. The corporate participants, on business scanning activities, responded as such:

“you can start at the macro environment, you want to scan what you think are the changes that are taking place, what are the drivers, maybe if you can start with the organisation itself, the organisation, any organisation has got a product, that product has to compete on the market with other competitors, either substitute or products that are exactly the same.”^{RP1}

Which was similar to what respondents 7 and 5 noted:

“So as I said we do a bit of environmental scanning. So firstly we do make use of an external party to look at the industry. So there is an external party that does an environmental scan in terms of what is happening in the general market, what is happening with the investors, analysts, you know it is more the market side of things. Okay, on a supplier side, they also consider some of the supplier's side, they look at

what is available in the market, what is everybody producing, you know what is the cost structures in the industry.^{RP7}

“in terms of scanning the environment is obviously there is everything from the day to day news sources, news papers, media, the mining industry for a lot of the wrong reasons has been in the media recently and so you inherently pick up a lot through that.^{RP5}

From the operations point of view, most respondents responded with regards to their operational or mine strategy development experience, when asked a similar question most had similar response to participants 3’s:

“So, we execute what has already been scanned at Head Office..... This is the operational strategy for this particular mine (pointing to a picture). It came from the Corporate Strategy in the Corporate Strategy we have three pillars that we look at, which are,....in Cost Management, in Productivity and in Safety”^{RP3}

The table below summarizes what was extracted from the conversations above with regards to environmental scanning:

Table 2: Extracted Environmental Factors scanned by Platinum Mining Companies

Themes	Factors
PESTLE (Macro environment)	Political
	Economic factors
	Social factors
	Technology
	Legal changes
Porter 5 forces	Competition
	Substitutes
Demand and Supply	Demand side
	Supply side
Labour	Labour environment

The use of external consultants and other stakeholders, time horizon, they worked in and finally sources of information, for scanning activities, the participants were noted as such:

“We have to consider the political environment in mining. The political environment has a direct impact on the way we operate... we need to understand, what the demands are; on business; from a political point of view.”^{RP5}

This asserted by respondent 7 and 5:

“Pricing is definitely one of it but as I explained earlier, so we look at the full scope... We have to consider the political environment in mining. The political environment is a direct impact on the way we operate.”^{RP7}

“Obviously mining industry typically you’re looking at investments sort of looking at a longer time horizon, so the regulatory and some macroeconomic climate, of where you’re looking to sort of grow and maintain your business in the future is critical so regulations, legislative stability change....”^{RP5}

On the time horizon both operations and corporate seemed to agree on a three to five year time horizon for their strategy review:

“The time horizon...well I do know that our strategy...this company looking at three to five years – that one I do know...”^{RP3}

“but however the 1-5 year period is critical for delivery to guarantee that you will continue to exist beyond the 10 years”^{RP1}

“typical time horizons are sort of 3-5 years”^{RP5}

“So we do a five years business plan but with the focus on one year”^{RP7}

5.3.2. Method Sophistication

The type of communication as suggested by most scholars of strategic foresight was important. When addressing or solving identified problems, how did strategic foresight play a role in that, so as to avoid similar problems in future

and finally did the organisations know and understand the context of those identified problems; so as to be able to address and communicate properly possible solutions as noted by Cook, Inayatullah, Burgman, Sutherland, & Wintle, (2014).

When participants were asked what internal and external communication methods they used, this is how they responded as indicated on Table 3:

Table 3: Thematic table of internal communication

Form of communication	Quotation	Frequency
Notice Board – Notices	<i>“We also have boards on shafts for employees where they go and see exactly what has been produced”^{RP2}</i>	7
	<i>“The GM sends out his weekly communication to the team to say this/these are the things; and the teams, they’ve got an opportunity to reply back with their suggestion to the GM”^{RP3}</i>	
Email distribution	<i>“Most of our information transfer is done through emails and newsletters or briefs, memorandums.”^{RP9}</i>	6
Magazine / Newsletter		3
Intranet	<i>“we have an intranet so a lot of information or a fair bit of information is posted there”</i>	1
Social Network	<i>Face-to-face meetings, emails, WhatsApp, Facebook, Twitter, radio”^{RP6}</i>	1
Radio – Mass Media		1

Other sentiments about how these organisations communicate are:

“In terms of communication I must say we are very good in that, but also, also.....bad as well, because there was.....when the strategy was formulated, there was very good communication up until Bend 5 (corporate management) to say what is it that needs to be done”^{RP3}

Participant 4 continues on to state:

“I think as a Bend 6 (senior mine management) I deserve to know what is happening in the whole of the strategy, for the business as a whole and then obviously be redirected to my specific area. And also there was not opportunity to have input – it was already a strategy – finalised, signed off and then it needs to be executed.”^{RP4}

The above sentiment is shared by respondent 5:

“One that I certainly think that we don’t do enough of, particularly around strategy, is cascading it through to the organisation. So that once the strategy for the year you would expect it to not change too much, but part of the annual process once it gets approval from the board you would really expect it to be cascaded down through the executive management, middle management, kind of down through the organisation”^{RP5}

With regards to strategy addressing the identified problems as (Cook et al., 2014) stated that if at the end of the exercise the organisation implements wrong resolutions it would be costly for the organisation

“The industry has changed because of escalation of costs, but the returns were not actually matching, we are actually losing money, when you analyze it, we had a fair portion of our production that even if you put as much money as possible we are unlikely to make low cost producers.... That was the problem that we were trying to address.”^{RP1}

“(the problem) mixing of waste (with reef) together, so now that affected our grade per ounce, which made it lower than if we were only wasting fresh ore reef, that grade affected our ounces and those ounces affected our revenue, which is our bottom line.. (the problem was then addressed) I think it used to be around 5.4 grams per ton, it is now to about 6, I do not know what percentage that is”^{RP4}

And finally from one respondent:

“So a big part of our strategy is to create stability and then obviously then signs a new five year wage agreement so we signed a five year wage agreement in the middle of the strike. When everybody was on strike, we signed a five year deal. We also just a month ago signed a five year wage agreement with our contract labour. So we have two five year agreements running one year apart at the moment for stability. So from a strategic point of view you need give certain things, so foresight

was we are going to take a short term knock, cost is going to be a problem but is the price of that. What is the price of that stability.^{RP7}

5.3.3. People and Networks

The knowledge base of the people conducting strategic foresight and the type of teams that were in the process was seen as being an important factor for the process by most if not all the scholars. Collaboration and team make up was also identified as important. This section looked at how the organisations viewed this premise. Table 4 below has some of the sentiments and comments by the respondents:

Table 4: The Thematic on the Scope of Networks

Network	Area	Quotes	Frequency
Unions	Internal	<p><i>"The main ones at the operations that we work with it's the unions."</i>^{RP2}</p> <p><i>"The unions play a very significant role in everything that we do, very significant role."</i>^{RP8}</p>	8
Communities	External	<p><i>"we have a department that looks at community engagement so we also sometimes sit around with them and they bring issues to us"</i>^{RP2}</p> <p><i>"Communities, but we do not sit with them when formulating strategy but we do consider the impact that they have on us and us on them during these session"</i>^{RP6}</p>	7
Consultants	External	<i>"we subscribe to a number of industry consultants data bases such as SFA (Steve Forrest and Associates), to help inform sort of your supply demand competitive position"</i> ^{RP5}	3
Investors	External	<i>"which is government, communities, investors and all those."</i>	2

Other views from the respondents:

“I think from my side I certainly prefer to work quite collaboratively and get input from kind of matrix of different sort of people, functions across the organisation but it depends on the nature and sensitivity of it.”^{RP5}

With regards to the knowledge base of the team, one responded was quoted as saying:

“The knowledge base of the people conducting the strategy would be my team. First you have to be degreed, they must have a degree. Secondly they also must have the ability to think strategy.”^{RP1}

This thinking seemed to be supported by respondent 2:

“... I think here we’ve got a very vast different team, people with different expertise but who are very good at what they do. I think what helps in our strategy sessions is that you’ve got Gawie who has a PhD in something else, you have Jali from engineering, you’ve got the GM who has got MBA so when we sit together we try and dissect things from many different perspectives and see what comes up.”^{RP2}

5.3.4. Organisation

Using Rohrbeck and Gemünden, (2008)’s framework the participants, to a role that the strategic unit plays in the organisation question; most, if not all the organisations, felt that they did not have a specific strategic unit. But such a role was shared amongst the teams in one organisation and did not exist at all at the other organisations, as some participants responded as:

“What Strategic Unit you’re talking about – there is no Strategic Unit here”^{RP3}

The above assertion seemed to be shared by participant 5 below:

“strategic unit, I mean uh.... in (my organisation) its strategy and business development”^{RP5}

But it also seemed like, one organisations had a unit which consisted of parties that had other roles over and above what Rohrbeck & Gemünden, (2008)'s framework defined:

“So the strategic unit is really co-ordination so because we have a very informal structure and it is not one person having full responsibility so between myself, investor relations and the CFO we share that but it is really a co-ordination role.”^{RP7}

Because it seemed like there was no unit responsible for the strategic foresight exercise and that, either it did not exist or teams that were part of other units, had to take that role, it therefore brought into question accountability for the detection of weak signals if no one was responsible. The response was as follows:

“I think that kind comes back to... a lot to performance management where my impression is it's not where it should be so that again starting and cascading through the business everyone knows what the strategy is and what part of implementing it they are accountable for.”^{RP5}

Similar sentiments were shared by respondent 7:

“Accountability levels. Look although everything is very integrated we are still individually held accountable. So when it comes to... because we are a very small executive team. So each of us individually are accountable for what you do.”^{RP7}

Responded 1 stated the following:

“Basically the accountability of picking up the weak signals should really be in strategy, the way we in strategy look at it, we only really started last year was understanding the scenarios, what are those scenarios, what are plausible scenarios, the plausible scenarios, you classify them into – you are the learned one.”^{RP1}

From the operations side this is what was noted, respondent 6 concurred what was stated above by stating:

“Business development and strategy formulation facilitate strategy and ensure strategic review on an annual basis”^{RP6}

And respondent 3 noted the following:

“the company we came up with this Tsiyamo process.... What we’re trying....I am not quite sure if we’ve got at the Head Office, but what we’re trying with that Tsiyamo, we’re trying to make sure that as Management or leadership at the shaft or whatever the operation, we interact with the community, with DMR and Union.”^{RP3}

Respondent 3 affirmed what respondent 3 noted above:

“I think management at the shaft, they are engaged, they engage people informally and formally quite a lot and the people on site actually..... I remember one time there were issues, racial issues between certain white people managers and their black team members, that issue came to us before it could become big, it was in one section and it came to our level as quickly as I would think possible.”^{RP4}

5.3.5. Culture

Culture dealt with the usage of strategic foresight. This dimension was investigated for the understanding of whether or not the companies were sharing the information, their willingness to listen to external sources, employee involvement in the scanning of external environment and willingness to test and challenge assumptions. Also, because strategic foresight is about collaboration, and culture here meant also the legacy of the mines, that each organisation was trying to either sustain or eradicate; as participant 1 mentioned that in 2008 they had identified a need to transform their organisation; and as participant 5 also noted on the culture of sharing of information

“I think it's more you “talk to so and so” who has been in the organisation for a long time and they can kind of point you in the right directions it's not a single slick depository for all learning's and things like that.”^{RP5}

“For every injury or for every finding or any improvements they will always share, they share that through emails basically, other departments don't share best practices as good as safety does.”^{RP3}

The same sentiment was shared by respondent 2:

“On safety related incidents we do share and people are willing to share to say this is how you can avoid but in terms of finance, HR, engineering there is not that much sharing.”^{RP2}

When asked about the organisation’s attitude towards the periphery the respondents responded as such:

“It is very important, if you look at our culture itself, the drivers, accountability, transparency, all the stuff.”^{RP1}

“The side things so as I said for us those side things are core, more than mining the stakeholders and those issues, six capitals if you look at financial manufacturing, social nets are as important”^{RP7}

*“any strategy which ignored the external world would not survive.....
No we recognise and we are very much integrated with the rest of the industry and the rest of the world..”^{RP5}*

This seemed to be the case at the operations as well:

“So participation with the outside people, when I talk about outside I once again say the local community whether it is the youth or old people or unions, even the neighbouring mines. We want to complement each other.”^{RP8}

“I’ve seen also with the new re-structuring that CED Department is quite big, because I think we’ve realised that we missed a lot by not really having a thermostat – a deep stick – of what is happening outside our communities.”^{RP3}

Strategic foresight is about testing assumptions as no one can say for sure what will work or not in the future. Thus, participants from the organisations were asked if whether they tested assumptions in their organisations in general, this is how they responded:

“We really do, we really do that.”^{RP3}

"We test it within acceptable levels. We are not just going to go and jump into the fire. We test opportunities."^{RP8}

This was concurred by respondent 9:

"We are risk averse. We are all averse to risk. Even if you are a gambler you know the chances of you winning or not it is between 0 and 1."^{RP9}

Corporate seemed to share similar sentiments when it came to testing of assumptions:

"We do test assumptions quite a bit. In the process when we develop strategy when you put assumptions down, we need to be able to test what that assumption is for all stakeholders"^{RP7}

"The whole process of strategy development is testing your assumptions, retesting the scenarios, checking whether your view of the world has changed, you can adjust them if need be. I think there is absolute openness and we understand what is changing and the assumptions."^{RP1}

"I think there is a fair appetite to test things and try doing things a certain"^{RP5}

5.4. Conclusion

Overall the results from the participants indicated that there was a certain level of usage of strategic foresight in the platinum mine industry. However, there were different levels of maturity for the different dimensions. The most matured dimension was the information usage. There was good evidence that the scope and reach of strategic foresight was broad, with about twelve aspects that were being scanned in the environment. These included the economic, legal, political, social and technological factors, the requirement of the markets, and the supply of the market, the commodity price, substitute products, performance and approach of the competitors, the labour market and the market threats.

The method sophistication showed the least maturity of the five dimensions investigated. There was no good evidence that showed that proper methods were selected to ensure that there was a proper matching, of the several problems and solutions at hand in the mining industry, especially the commodity price volatility, the increasing cost structure and militancy of the labour force.

6. Discussion of Results

6.1. Introduction

This chapter discusses the findings made in chapter five. The relationship to chapter two, literature review, will also be discussed. The discussion of the results will follow the interview schedule, but focusing on the sections rather than the questions in each section as points of discussion.

The discussion will follow the questionnaire from Rohrbeck and Gemünden, (2008)'s framework, which was used to answer the research question and sub-questions, which were identified in chapter 3.

The first impression of the researcher about the operations participants was that they did not understand what strategic foresight was. This was because every time the researcher started the interview at operations, after explaining what the topic was about, they would assume the researcher was talking about either six sigma tools or other general continuous improvement tool. The assumption was that strategic foresight was just strategy, to them there did not seem to be a distinction between strategic foresight as a process and strategy something that came from that process. On the other hand, at corporate there was a clear understanding of what the researcher was refereeing too. This was evident by how all the corporate participants would request the research give a definition of strategic foresight and then they would follow up by stating their own understanding of the subject and how they understood it with regards to how they used it in their organisations.

One of the things that came out of the interviews, from the operations participants, was the need for inclusion in the initial stages of the process. This they felt was necessary as they were the people who were ultimately responsible for the execution of the strategy at the end of the day and if they did not understand it, how then would they execute it.

6.2. Primary Research Question

What is the maturity level of strategic foresight in the organisations in the Platinum industry?

6.2.1. Information Usage

The monitoring of discontinuous changes, as Burt and Wright, (2006) mentioned in the literature review, seemed to be an important part of the interviewed organisations. This was evident in the way in which most, if not all seemed to scan the macro and micro environment for opportunities and threats. All the participants noted that they scan using PESLE for macro and parts of Porter's five forces, industry supply and demand, and labour market for the micro environment.

“you can start at the macro environment, you want to scan what you think are the changes that are taking place, what are the drivers, maybe if you can start with the organisation itself”^{RP1}

This sentiment was shared by all the participants. Thus to the researcher this was an indication that they understood the importance of environmental scanning.

There was also a clear consensus as to the time horizon the platinum mining organisation use, thus ensuring that all saw the same thing at the same time. A three to five year time horizon was used to review the strategy on a short-term basis.

“typical time horizons are sort of 3-5 years”^{RP5}

“So we do a five years business plan but with the focus on one year”^{RP7}

What came out though about information usage in the mines was that it was an important part of their process when doing strategic foresight. And a lot of time was spent on this section during the process so as to understand their environment and basically to get an idea as to where the organisation was perceived as being at that moment in time before planning for the future, which was in line with what Cummings & Worley, (2014) initial organisation diagnosis.

There was a consensus as to the sourcing of information, with most participants stating that they use both internal and external sources of information before and during the strategic foresight process, as noted by Romero et al., (2009).

“We have to consider the political environment in mining. The political environment has a direct impact on the way we operate”^{RP5}

To the researcher this was a good way the organisations were verifying their findings internally by comparing with the external environment.

6.2.2. Method Sophistication

To answer the question of method sophistication, three questions were asked:

- Did the company use communicative capacity, by combining the scanned information from the environment and of its current state, to make the stakeholders aware, leverage opportunities and mitigate against threats?
- Was there a matching of the methods selected with the problems experienced in the mining industry?
- Was the type of method and effort in the business consistent with the context of the mining companies?

For the first question, which implied collaboration amongst participants; there seemed to be a good mix of internal and external communication methods used. But after the communication, be it for the company strategy or changes that the organisation was proposing to make, there seemed to lack a system of ensuring that most, if not all in the organisation understood what was being communicated, especially with regards to strategy.

“One that I certainly think that we don’t do enough of, particularly around strategy, is cascading it through to the organisation.”^{RP5}

This was confusing and revealing to the researcher as it posed another question of why go through the process if you are not going to see it through by ensuring that what is being communicated is what was decided upon (Gaspar et al., 2015). It also talks to, what Cook et al., (2014) mentioned with regards to the risks for the organisations, if wrong decisions at the end of the process were

made, then it would have been a very costly and useless exercise, as it would have, at the end, lacked commitment.

All in all there did not seem to be a clear understanding as to how to use strategic foresight wholly when problem matching, which Appiah & Sarpong, (2015) alluded to with regards to lack of consensus. One organisation had a problem that was identified as being urgent, but had taken the organisation more than 7 years to fix, (transformation of the organisation). This begs the question of during the three to five years feedback session and strategy reviews, what decisions were being made with regards to solving current identified problems, as the majority of the participants made mention that they review their strategies every three years minimum and five years max. Even though all the participants seemed to agree that there was a problem with communication none seemed to have or was working on a solution to address it.

6.2.3. People and Networks

The knowledge base for the people conducting the strategic foresight process was regarded as something that was important by the participants. This was because most, if not all, participants who were directly involved with strategic foresight, seemed to think that their teams were and had to be knowledgeable.

“The knowledge base of the people conducting the strategy would be my team. First, you have to be degreed, they must have a degree. Secondly, they also must have the ability to think strategy.”^{RP1}

But again this was confusing to the researcher as, if the team was knowledgeable, how then did they miss the 2012 and 2014 strikes in the industry, the price volatility, etc, what were they monitoring and most importantly, how were they scanning the environment? Could this have been a bias that Vecchiato & Roveda, (2010b) noted that the real challenge of strategic foresight was not only to detect drivers of change promptly, but to reshape the strategic beliefs of managers who were leading the change so that they could avoid biases and being presumptuous about the future.

Also, what came out as not being done, but was regarded as important in the literature review, was collaboration with multiple stakeholders. During the interview it was clear and evident that only a select few were privy to the process and those, most participants felt, critical to the process were not part were not being involved.

“And also there was not opportunity to have input – it was already a strategy – finalised, signed off and then it needs to be executed.”^{RP4}

As mentioned by Hideg, (2007); Tsoukas and Shepherd, (2004) and Rasmussen et al., (2010) also stated, that strategic foresight allowed multiple stakeholders to negotiate over how to attain a desirable future, after they had described it as meaning future oriented, participatory consultation of actors and stakeholders, both within and outside a scientific community.

The understanding seemed to be that the more the diverse the group, that is a representation from engineering, finance, safety, etc. the better. Breaking down of silo's seemed to be the priority.

The use of internal and external networks in the organisations seemed to be a commonality amongst all the interviewed organisations. All the organisations seemed to have a sort of relationship with unions, communities, consultants and investors. Unions were used for internal communication with lower level employees; i.e. artisans, operators etc; who were unionised.

“The unions play a very significant role in everything that we do, very significant role.”^{RP8}

From senior management and upwards, internal communication was done through direct communication with the employees' first line of report that is, their manager. The perceived problem with this method of communication is if the person who had to relay the message did not understand or even supported what was managements final decision, thus the need to have a team at the beginning of the process so to ensure buy-in as Rasmussen et al., (2010) suggests. This, the researcher noted, as some of the participants were noted as stating their dissatisfaction with the fact that corporate management tended to assume what operations needed and based their decisions on those assumptions and not buy-in, as quoted above. This they felt was due to the fact that they “did not include general managers from the operations”. They also felt

that part of the problem, when they had to implement in some areas, they either lacked the knowledge base required, facilities, etc. This Rohrbeck & Gemünden, (2008) note as a shortfall on the organisations side.

6.2.4. Organisation

The strategic unit, which is a unit tasked with the strategic foresight process, was not in any of the organisations that were interviewed, instead they all seemed to view the unit as being part of the business development department. This was not surprising to the researcher, as knowledge and understanding of the strategic foresight process had been proven minimal in the beginning of the interview.

There seemed to be a thinking that the strategic foresight role in the organisation is to fix current problems as they arose.

“So the strategic unit is really co-ordination so because we have a very informal structure and it is not one person having full responsibility so between myself, investor relations and the CFO we share that but it is really a co-ordination role.”^{RP7}

Thus there appeared to be not a single person taking the responsibility of the any missed opportunities or threats. In some organisations even this did not exist, and that is why maybe, those organisations missed the 2012 and 2014 threats presented by the strikes.

6.2.5. Culture

On sharing of information the culture, as observed by the researcher, in the interviews mines was that of a “gatekeeper” system, as some felt that information was still not being shared amongst teams unless you know somebody.

“I think it’s more you “talk to so and so” who has been in the organisation for a long time and they can kind of point you in the right

directions, it's not a single slick depository for all learning's and things like that.^{RP5}

The question then becomes why is that the case, why the need for secrecy, especially if information that should be made public.

The culture of the organisation was seen by the researcher as a key attribute of the strategic foresight process. A culture of resistance to change meant that everything needed during the strategic foresight process was not going to materialize. As strategic foresight is a tool that helped organisations improve themselves by looking at where they could change in order to keep up with the times and ensure compliance to the overall strategy of the organisation.

The feedback from the interviews was that the said organisations had a good culture of tested assumption, was inclusive with all stakeholders and collaborative. This was again puzzling to the researcher as initially some interviewees felt that their organisations were not as inclusive as they should be. This view was mostly expressed when the researcher had stopped recording and had announced the completion of the interview.

"We really do, we really do that."^{RP3}

All the organisations noted the importance of the looking at the periphery as, especially now after the 2012 and 2014 strikes, which caught most platinum mines off guard.

"I've seen also with the new re-structuring that CED Department is quite big, because I think we've realised that we missed a lot by not really having a thermostat – a deep stick – of what is happening outside our communities."^{RP3}

What was observed and noted as interesting by the research was the fact that every time after the interview was pronounced finished, the tone from the interviewees changed. That is, most were uncomfortable and reserved during the interview, but once the recording device was switched off it sounded like the discussion was about a different company. This was common with all the organisations and with most interviewees irrespective of location, i.e. corporate or operations. That alone is a culture all on its own.

6.3. Research Sub-Question One

Which strategic foresight dimension is most matured in the organisations of the Platinum industry?

Information usage was found to be the most matured strategic foresight dimension with the interviewed mines. This was probably due to the fact that a multiple of tools were used, that is PESTEL, Porter's Five Forces, Supply and Demand and lastly Labour market review. Even though the tools were customized to meet the organisation's needs, it was as though the participants believed that that was sufficient and necessary for their organisations. To the participants it did not seem like they had nitpicked but it was more like they had customized for their environment. It almost felt like, to the researcher, a diagnosis that Cummings & Worley, (2014) spoke about, had been done in order to identify which tools to use from the tools set.

The usage of internal and external sources for information gathering was also regarded as a positive thing by both corporate and operations participants. This they felt was necessary in order to keep up with the latest and relevant news, especially after the 2012 Marikana strike. The question posed to them with regards to the 2012 strike and the 2014 five months long strike was meant to question if their information gathering tools were sufficient or even relevant to the times. This, the researcher did in order to understand how they had missed what had happened prior to the 2012 Marikana strike at Impala mine, which was also similar to in a sense that it was the same unions fighting for dominance, and it too was violent.

A form of hubris was noted by most interviewees, on the side of the two big tier mines, as most assumed that the Impala strike was only an Impala problem even though it was the unions that were fighting. But one mining house seemed to have taken it seriously as they were not affected by the 2012 strikes and the 2014 strikes. They had taken learnings, according to them, to start engaging with not only their employees, but also with the surrounding communities that they were operating amongst.

Since then, though, all of the interviewed mines have joined together, formed the World Platinum Investment Council, and are collaborating as Chaharbaghi et al., (2005) mentioned was necessary for the hypercompetitive global environment that they operate in.

6.4. Research Sub-Question Two

Which strategic foresight dimension is least matured in the organisations of the Platinum industry?

Method sophistication was found to be the least mature dimension of the five investigated. Even though there was no clear indication as to what the mining houses, that were interviewed, were doing to address the obvious and identified issues, there was however a clear awareness of the dangers the said problems might have, as Hines & Bishop, (2006) put it that it was no longer about finding the information but about understanding and acting on it. Most of the interviewed organisations were focused on reducing the operating costs that were said to be escalating. Two of the three mines that were interviewed were currently going through a restructuring and retrenchment process. This they said was part of the plan to mitigate and reduce costs. One of the mining houses had earlier in the year (2015) noted at the Mining Indaba conference its desire to invest more and heavily into the mechanization of their operations.

But also one of the things that the researcher noted during the interviews was the clear division between corporate and operations views when it came to how some of the issues, in the mines, could be tackled. This was again observed during the interview when one participant mentioned just how operations management was given limited access to the process, strategic foresight. The feeling from some of the operations teams was that it might be easier to implement corporate proposals at operations if the operations team were directly involved from the initial process, thus ensuring buy-in as Rasmussen et al., (2010) noted.

6.5. Conclusion

The application of strategic foresight in the interviewed platinum mines was noted as being not sufficient as most participants assumed that strategic foresight was strategy development. The usage of strategic foresight for the detection of threats and opportunities was not seen as something that the organisations did. Instead parts of the process was used for either current problem solving or just for monitoring exercises. There was nothing conclusive that could indicate that the interviewed organisations used strategic foresight as a process.

Strategic foresight is a collaborative and inclusive process that required multiple parties to take part in the process, (Hideg, 2007; Tsoukas & Shepherd, 2004) and (Rasmussen et al., 2010). Even though this was known and understood, there was a clear lack of it happening as most operations teams felt that they were cast out of the process even though they would be directly involved with the implementation of the process. This brought to mind the question of whether or not organisations understood the roles and responsibilities of their people in the organisation, that is should operations people be involved in the strategic foresight process or should they not be. If they should, to what extent should they be.

7. Conclusion

7.1. Introduction

This chapter provides the conclusion of the whole research process and provides recommendations for business as well as any contributions to literature plus recommendations. The aim of this research was to get an understanding of the level of usage of strategic foresight by organisations in the mining industry. The research was done with the cooperation of three big mining organisations in South Africa, Anglo American Platinum, Lonmin and Royal Bafokeng Platinum.

7.2. Summary findings

The platinum mining industry has been, for a while now, struggling with unfavourable operating condition. The aim of this research was to see if strategic foresight was an option being taken by the platinum mining industry as it was said to have, what seemed to the researcher, possible solutions for the industry.

The research, however, proved that although there was an understanding and knowledge of strategic foresight, for the operations participants had limited if at all, knowledge and understanding of the process. Also at corporate level, there was, at some organisations, limited resources for conducting the process fully, that is from inception to distribution. This was due to the fact that most of the organisations who were interviewed were currently focusing on cost cutting exercises and were also maximising the use of their current resources.

7.3. Research Findings

With regards to the primary question, the research found that strategic foresight was known and understood in the organisations that were interviewed, but at corporate level. This did not mean much as the organisations were all

focused on cost cutting and maximum resource utilisation. That is, most of the organisations that were interviewed lacked the resources required to implement the strategic foresight process fully. What was observed, though, was that all the organisations seemed to use parts of the process to solve current problems. For example, all the organisations were scanning their macro and micro environment so as to have an understanding of where they were as an organisation and where the organisation was in the industry and where should it be moved.

The information that was collected seemed to be used to address current problems and to an extent in some organisations, plan for the near future. What was also interesting was how the process used had changed to include the communities and the unions in the monitoring and planning process, as one participant noted that that was due mostly to the recent strikes that took place in the industry, the 2012 and 2014 strikes. As, also another participant noted that the roles these new stakeholders were now looked at differently as previously they would not feature in the conversations of strategic planning and foresight process. Before this was an operation issue (communities) and now it is an organisational issue.

Strategic foresight was at times mistaken for any other business development tool in the operations. The scanning of environment at the operations, although it was done, was not as priority as the main role in the operations was to execute the strategy that was from corporate. This was noted by one participant who insisted that at the operations they only do execution. This view was however not shared by some of his peers as they felt that they were involved in the process, i.e. strategy development, from its initial stages to the execution in their operations.

It was also interesting to note that one organisation, that had managed to avoid the impact of the 2012 and 2014 strikes, included all stakeholders in their strategic foresight process, that is, communities, unions, government, shareholders and all level employees. When the researcher probed to see if this was possible as it would take time to get through, a very detailed process was explained as to how the organisation CEO does his road show collecting data for the process. This, the organisation claimed, was the reason for them being able to avoid the 2012 and 2014 strikes. This appeared to be what Gaspar, Sarpong, & Saritas, (2015) referred to as a deliberate and concentrated activity.

Sub-research question one, highlighted the information usage as the most matured in the organisations that were interviewed. But this was possible after the organisation had customized some of the tools needed to ensure success in this area.

The findings, to sub-research question two, which were the least matured process being method sophistication, were an indication of a lack of understanding of the value that the whole process might bring. Understanding what strategic foresight is and choosing to use strategic foresight as a tool are two different things. Organisations may have understood, but had chosen not to follow the whole process through. Maybe this could be because of what Cook et al., (2014) noted with regards to the complexities of the strategic foresight process and what Porter et al., (1996) referred to as the stepchild view of corporate strategy. Also, this is similar to what Godet, (2008)'s la prospective noted in that when it came to the implementation of the process, there was still a problem of getting buy in from top leadership.

Processes in the strategic foresight exercise are not easy and quick to implement but as Inayatullah, (1998) noted about his CLA , are worth the effort.

7.4. Recommendations

Strategic foresight is a tool and like all tools, one needs to understand what that tool is capable of and how to get maximum value from it. Literature about how strategic foresight works and could be applied is seen by the researcher to be sufficient. This is because after looking at the origins of strategic foresight in the early 50's and looking at what literature was saying about strategic foresight today, it's obvious that not much has changed. The way in which one uses the process, that might be open for discussion, but as for the core of the process, that is what to do when doing it, has not changed that much.

Thus the recommendations from the researcher would be that organisations in the platinum mining sector invest in designing the how to apply the process instead of which process to use. Because different organisations operate in the environment and are faced with different challenges, it would to the organisations benefit to invest in this one part of the process, the how to apply. Those who know and understand strategic foresight agreed that strategic

foresight was a great tool but also all noted the challenges that come with trying to go through this process, especially when resources were limited.

Also strategic foresight is a collaborative exercise that requires a diverse group or individuals thus getting maximum benefit from the process. The platinum mines seemed though to still be less diverse and inclusive in a sense that it was still a boys club. The industry has evolved and now has included females in the operations, but female representation was lacking in all the organisations interviewed, this was even noted from their boards and executive teams. How then does one plan for a future where females are going to be part of the team and yet senior leadership has no female representation to assist in the planning for this eventuality.

The legacy of segregation was also felt by the researcher there was a clear separation between corporate office and operations. The majority of the participants from the operations expressed some form of resentment to the fact that corporate plans for operations without even involving senior management from the operations and expected buy-in from the operations. The problems that are currently faced by the mining industry requires actions now that will only deliver benefits in the future, thus strategic foresight could be a best option.

7.5. Future Research

After going through the literature and interviewing organisations, the researcher would recommend as future research the following:

- The use of much bigger number of participants so as to get a conclusive perception of whether or not strategic foresight in the mines is matured.
- It would be interesting to find out if similar results would be held if the study was to be done in the international organisations, that is, platinum mines in Russia, Zimbabwe etc. and other organisations as well.
- The validity of strategic foresight is no longer in question, but the implementation of the process is. It would interesting to find out if using a similar method for all organisations would help move the conversation forward and help organisations implement the process quickly and effectively. Or if the each organisation should customize its process in order to suit its own needs. Basically the question that the researcher is

- asking is, are there consequences in customizing the process in order to suite ones organisation or not.
- Lastly, it would be interesting to note for certain just how many organisations have successfully implemented strategic foresight or is it just good in theory.

8. References

- Alexiev, A. S., Jansen, J. J., Van den Bosch, Frans AJ, & Volberda, H. W. (2010). Top management team advice seeking and exploratory innovation: The moderating role of TMT heterogeneity. *Journal of Management Studies*, 47(7), 1343-1364.
- Andersen, P. D., & Borup, M. (2009). Foresight and strategy in national research councils and research programmes. *Technology Analysis & Strategic Management*, 21(8), 917-932.
- Andrews, K. R. (1997). 5 the concept of corporate strategy. *Resources, Firms, and Strategies: A Reader in the Resource-Based Perspective*, , 52.
- Ansoff, H. I. (1975). Managing strategic surprise by response to weak signals. *California Management Review*, 18(2)
- Ansoff, H. I., Declerck, R. P., & Hayes, R. L. (1976). From strategic planning to strategic management.
- Ansoff, H., & McDonnell, E. (1984). Implanting strategic management.
- Appelbaum, S. H., & Vecchio, R. P. (1995). *Managing organisational behaviour: A canadian perspective* Dryden.
- Appiah, G., & Sarpong, D. (2015). On the influence of organisational routines on strategic foresight. *Foresight*, 17(5)
- Bailey, L. F. (2014). The origin and success of qualitative research. *INTERNATIONAL JOURNAL OF MARKET RESEARCH*, 56(2), 167-184.

Bartlett, C. A. (2000). *GE's two decade transformation: Jack welch's leadership*
Harvard Business School.

Beer, M., & Nohria, N. (2000). Cracking the code of change. *If You Read Nothing
Else on Change, Read Thesebest-Selling Articles.*, , 15.

Burt, G., & Wright, G. (2006). “Seeing” for organisational foresight. *Futures*,
38(8), 887-893.

Chaharbaghi, K., Adcroft, A., Willis, R., Todeva, E., & Knoke, D. (2005). Strategic
alliances and models of collaboration. *Management Decision*, *43*(1), 123-148.

Chamber of Mines of South Africa. (2014, The south african mining sector in
2013: Facts and figures 2013/14.

Chamber of Mines of South Africa. (2014). Mining lekgotla 2014: Minister jeff
radebe's gala dinner. Retrieved from

[https://commondatastorage.googleapis.com/comsa/mining-lekgotla-2014---
minister-jeff-radebe-gala-opening-address.pdf](https://commondatastorage.googleapis.com/comsa/mining-lekgotla-2014---minister-jeff-radebe-gala-opening-address.pdf)

Coates, J. F. (2010). The future of foresight—A US perspective. *Technological
Forecasting and Social Change*, *77*(9), 1428-1437.

Cook, C. N., Inayatullah, S., Burgman, M. A., Sutherland, W. J., & Wintle, B. A.
(2014). Strategic foresight: How planning for the unpredictable can improve
environmental decision-making. *Trends in Ecology & Evolution*, *29*(9), 531-
541.

Courtney, H. (2001). *20/20 foresight: Crafting strategy in an uncertain world*
Harvard Business Press.

- Cremer Media. (2014). Platinum 2014: A review of south africa's platinum industry . Retrieved from <http://www.creamermedia.co.za/article/platinum-2014-a-review-of-south-africas-platinum-industry-pdf-report-2014-05-28>
- Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches* Sage publications.
- Cummings, T., & Worley, C. (2014). *Organisation development and change* Cengage learning.
- Daft, R. L., Sormunen, J., & Parks, D. (1988). Chief executive scanning, environmental characteristics, and company performance: An empirical study. *Strategic Management Journal*, 9(2), 123-139.
- Day, G. S., & Schoemaker, P. J. (2006). Peripheral vision: Detecting the weak signals that will make or break your.
- De Geus, A. (1997). *The living company*: Harvard business school press. Boston, Massachusetts,
- Deloitte. (2015). Retrieved from <http://www.google.co.za/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CB0QFjAA&url=http%3A%2F%2Fwww2.deloitte.com%2Fcontent%2Fdam%2FDeloitte%2Fglobal%2FDocuments%2FEnergy-and-Resources%2Fqx-er-tracking-the-trends-2015.pdf&ei=wdpEvev1MIbn7ga6jIDgAw&usq=AFQjCNH7wppzGlgq1lhmmQ5qzp1uW0pGGA&sig2=QU6EKH1SBtAxV1DYmUzhMQ>
- Duncan, R. B. (1972). Characteristics of organisational environments and perceived environmental uncertainty. *Administrative Science Quarterly*, , 313-327.

- Eisenhardt, K. M., & Zbaracki, M. J. (1992). Strategic decision making. *Strategic Management Journal*, 13(S2), 17-37.
- Ereheriene, E. (2015). Goldman cuts platinum, palladium forecasts for 2015, 2016. Retrieved from <http://blogs.wsj.com/moneybeat/2015/05/15/goldman-cuts-platinum-palladium-forecasts-for-2015-2016/>
- Friedmann, J. (1993). Toward a non-euclidian mode of planning. *Journal of the American Planning Association*, 59(4), 482-485.
- Gaspar, T., Sarpong, D., & Saritas, O. (2015). Strategia Sapiens–strategic foresight in a new perspective. *Foresight*, 17(5) Godet, M. (2008). Strategic foresight la prospective. *Cahiers Du LIPSOR, Paris*,
- Hamel, G. (1998). Opinion: Strategy innovation and the quest for value. *MIT Sloan Management Review*, 39(2), 8.
- Hannan, M. T., & Freeman, J. (1977). The population ecology of organisations. *American Journal of Sociology*, , 929-964.
- Hannan, M. T., Polos, L., & Carroll, G. R. (2003). The fog of change: Opacity and asperity in organisations. *Administrative Science Quarterly*, 48(3), 399-432.
- Healey, P. (1996). Consensus-building across difficult divisions: New approaches to collaborative strategy making. *Planning Practice and Research*, 11(2), 207-216.
- Heiko, A., Vennemann, C. R., & Darkow, I. (2010). Corporate foresight and innovation management: A portfolio-approach in evaluating organisational development. *Futures*, 42(4), 380-393.

- Hideg, É. (2007). Theory and practice in the field of foresight. *Foresight*, 9(6), 36-46.
- Hiltunen, E. (2008). The future sign and its three dimensions. *Futures*, 40(3), 247-260.
- Hines, A., & Bishop, P. J. (2006). *Thinking about the future: Guidelines for strategic foresight* Social Technologies Washington, DC.
- Hyde, K. F. (2000). Recognising deductive processes in qualitative research. *Qualitative Market Research: An International Journal*, 3(2), 82-90.
- Inayatullah, S. (1998). Causal layered analysis: Poststructuralism as method. *Futures*, 30(8), 815-829.
- Inayatullah, S. (2000). Tips and pitfalls of the futures studies trade. *Foresight*, 2(4), 369-374.
- Inayatullah, S. (2004). Causal layered analysis: Theory, historical context, and case studies. *The Causal Layered Analysis Reader: Theory and Case Studies of an Integrative and Transformative Methodology*,
- Inayatullah, S. (2008). Six pillars: Futures thinking for transforming. *Foresight*, 10(1), 4-21.
- Lewis-Beck, M., Bryman, A. E., & Liao, T. F. (2003). *The sage encyclopedia of social science research methods* Sage Publications.
- Liebl, F., & Schwarz, J. O. (2010). Normality of the future: Trend diagnosis for strategic foresight. *Futures*, 42(4), 313-327.
- Makridakis, S. (2004). Foreword: Foresight matters. *Managing the Future-Foresight in the Knowledge Economy*,

- Martin, B. R. (2010). The origins of the concept of 'foresight' in science and technology: An insider's perspective. *Technological Forecasting and Social Change*, 77(9), 1438-1447.
- May, R. C., Stewart, W. H., & Sweo, R. (2000). Environmental scanning behavior in a transitional economy: Evidence from Russia. *Academy of Management Journal*, 43(3), 403-427.
- Mendonça, S., & Sapiro, B. (2009). Managing foresight in changing organisational settings: Introducing new perspectives and practices.
- Miles, R. E., Snow, C. C., Meyer, A. D., & Coleman, H. J. (1978). Organisational strategy, structure, and process. *Academy of Management Review*, 3(3), 546-562.
- Milliken, F. J. (1987). Three types of perceived uncertainty about the environment: State, effect, and response uncertainty. *Academy of Management Review*, 12(1), 133-143.
- Molitor, G. T. (2003). *The power to change the world: The art of forecasting*
Graham TT Molitor.
- Morse, J. M. (1994). *Critical issues in qualitative research methods* Sage.
- Mukhopadhyay, S., & Gupta, R. K. (2014). Survey of qualitative research methodology in strategy research and implication for Indian researchers. *Vision: The Journal of Business Perspective*, 18(2), 109-123.
- Opdenakker, R. (2006). Advantages and disadvantages of four interview techniques in qualitative research. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, 7(4)

- Paliokaité, A., Pačèsa, N., & Sarpong, D. (2014). Conceptualizing strategic foresight: An integrated framework. *Strategic Change*, 23(3-4), 161-169.
- Porter, M. E., Goold, M., & Luchs, K. (1996). From competitive advantage to corporate strategy. *Managing the Multibusiness Company: Strategic Issues for Diversified Groups*, New York, , 285-314.
- PwC, S. M. (2014). Retrieved from http://www.pwc.co.za/en_ZA/za/assets/pdf/sa-mine-2014-6th-edition-21-nov.pdf
- Qu, S. Q., & Dumay, J. (2011). The qualitative research interview. *Qualitative Research in Accounting & Management*, 8(3), 238-264.
- Rasmussen, B., Andersen, P. D., & Borch, K. (2010). Managing transdisciplinarity in strategic foresight. *Creativity and Innovation Management*, 19(1), 37-46.
- Riedy, C. (2008). An integral extension of causal layered analysis. *Futures*, 40(2), 150-159.
- Rohrbeck, R., & Gemünden, H. G. (2008). Strategic foresight in multinational enterprises: Building a best-practice framework from case studies. *Emerging Methods in R&D Management Conference*, 10-20.
- Rohrbeck, R., & Schwarz, J. O. (2013). The value contribution of strategic foresight: Insights from an empirical study of large european companies. *Technological Forecasting and Social Change*, 80(8), 1593-1606.
- Romero, D., Galeano, N., & Molina, A. (2009). Mechanisms for assessing and enhancing organisations' readiness for collaboration in collaborative networks. *International Journal of Production Research*, 47(17), 4691-4710.

- Rumelt, R. P. (2012). Good strategy/bad strategy: The difference and why it matters. *Strategic Direction*, 28(8)
- Sarpong, D., & O'Regan, N. (2014). The organizing dimensions of strategic foresight in High-Velocity environments. *Strategic Change*, 23(3-4), 125-132.
- Saunders, M & Lewis, P. (2012). *Doing research in business and management: An essential guide to planning your project* Prentice Hall.
- Saunders, M., & Lewis, P. (2012). *Doing research in business and management: An essential guide to planning your project* Financial Times Prentice Hall.
- Secombe, A. (2014). Platinum deficit set to continue. Retrieved from <http://www.bdlive.co.za/business/mining/2014/12/03/platinum-deficit-set-to-continue>
- Shenhar, A. J., Tishler, A., Dvir, D., Lipovetsky, S., & Lechler, T. (2002). Refining the search for project success factors: A multivariate, typological approach. *R&d Management*, 32(2), 111-126.
- Slaughter, R. (1995). The foresight principle. *London: Adamantine*,
- Slaughter, R. A. (2001). Knowledge creation, futures methodologies and the integral agenda. *Foresight*, 3(5), 407-418.
- Statistics South Africa. (2013). Quartely financial statistics, december 2012. Retrieved from <http://www.statssa.gov.za>
- Statistics South Africa. (2015). Don't let platinum's recent rise fool you Retrieved from <http://www.statssa.gov.za/?p=4622>

- Trading Economics. (2015). South africa GDP from mining. Retrieved from <http://www.tradingeconomics.com/south-africa/gdp-from-mining>
- Tsoukas, H., & Shepherd, J. (2004). Coping with the future: Developing organisational foresightfulness. *Futures*, 36(2), 137-144.
- Van Rij, V. (2010). Joint horizon scanning: Identifying common strategic choices and questions for knowledge. *Science and Public Policy*, 37(1), 7-18.
- Vecchiato, R., & Roveda, C. (2010a). Foresight in corporate organisations. *Technology Analysis & Strategic Management*, 22(1), 99-112.
- Vecchiato, R., & Roveda, C. (2010b). Strategic foresight in corporate organisations: Handling the effect and response uncertainty of technology and social drivers of change. *Technological Forecasting and Social Change*, 77(9), 1527-1539.
- Wayland, R., Sarpong, D., & Saritas, O. (2015). Strategic foresight in a changing world. *Foresight*, 17(5)
- Weigand, K., Flanagan, T., Dye, K., & Jones, P. (2014). Collaborative foresight: Complementing long-horizon strategic planning. *Technological Forecasting and Social Change*, 85, 134-152.
- Wexler, A. (2015). SA's platinum miners start over. Retrieved from <http://www.bdlive.co.za/business/mining/2015/08/13/sas-platinum-miners-start-over>
- Wilber, K. (2000). *Sex, ecology, spirituality* Shambhala Publications.
- Winter, S. G. (2004). Specialised perception, selection, and strategic surprise: Learning from the moths and bees. *Long Range Planning*, 37(2), 163-169.

9. Appendix A

Evaluating the maturity of strategic foresight in the Platinum Industry

Consent letter

Dear Sir/Madam

My name is Celiwe Xulu I am studying MBA with the Gordon Institute of Business Science (GIBS), University of Pretoria. As part of my studies, I am conducting the research evaluate the use and maturity of strategic foresight in the Platinum Industry. I will highly appreciate your participation in this study, as it will assist us to understand the use and maturity levels of of strategic foresight, particularly in the platinum mines.

Your participation is voluntary and you can withdraw at any time without penalty.

All data will be kept confidential and used in an aggregated format to protect your identity and that of the other people participating in this study.

By completing the survey, you indicate that you voluntarily participate in this research. If you have any concerns, please contact my supervisor or myself. Our details are provided below.

Researcher Name: Celiwe Xulu

Research Supervisor: Jabu Maphalala

Interview Process

- To commence with the interviews, participants will be contacted by email to arrange for date, time and venue convenient for the participant within an office environment.
- Inform participant of the background and purpose of study and reassure that the interview was voluntary and that at any point they experienced uneasiness to continue, they may stop the interview. Also inform the participant that the question asked will require their comments based on their knowledge and experience.

- Consent for participation would be asked and followed by the signing of a consent form/statement.
 - The interview process will proceed and when completed, participants would be invited to make any additional remarks or comments that they feel is relevant.
 - The interview would be closed after participants are informed of the next stage in research process and then thanked for their participation.
-

SECTION 1: Background information

1. What organisation do you work for?

2. How long you been working in Platinum industry?

<_____

3. What is your current role in the organisation?

<_____

4. Tell us about your experience in the strategy development?

SECTION 2: Information usage

1. When conducting the strategy, what business scanning activities do you partake in?

2. What external environmental factors do you focus on? Please provide details

3. What time zones do you consider? And for which aspects of operation?

4. What sources of information do you use for the decision making?

SECTION 3: Method sophistication

5. What internal communication and external communication methods does your organisation employ?

6. Where there any particular business problems that your last strategy addressed?
What were those and how were they addressed?

7. What context of the business were those problems addressed?

SECTION 4: People and Networks

8. How would you describe the knowledge base and interests of the team conducting the strategic foresight?

9. What other partners, stakeholders and interest groups do you work with during the strategic foresight?

SECTION 5: Organisation

10. What mode is employees for project-based foresight (top-down, bottom up or both)? Please explain

Do you involve formal continuous improvement methods? If so, which ones?

11. What levels of integration exist within the strategic processes?

12. What accountability levels are present to detect weak signals?

What is the role of the strategic unit (foresight unit)?

13. What incentives are in place to reward the wider organisational vision?

SECTION 5: Culture

14. What information sharing and knowledge management platforms that are in place? Please explain

15. What is the organisational attitude towards periphery?

16. What is the organisational position on willingness and testing of assumptions?

INTERVIEW DECLARATION

I (participant) declare that I have voluntarily participated in the interview and that the information I provide is honest and truthful.

Signature :

Date:

10. Appendix B

Gordon Institute of Business Science University of Pretoria

Dear Miss Celiwe Xulu

Protocol Number: Temp2015-01123

Title: Evaluating the maturity of strategic foresight in the Platinum Mine for industry Competitiveness

Please be advised that your application for Ethical Clearance has been APPROVED.

You are therefore allowed to continue collecting your data.

We wish you everything of the best for the rest of the project.

Kind Regards,

GIBS Ethics Administrator

11. Appendix C