THE EVALUATION OF THE PROPOSED MERGER BETWEEN GOLDFIELDS GOLD PLANTS BEATRIX AND ORYX.

By

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ABSTRACT

This management report outlines the evaluation of the proposed merger between Gold Fields gold plants, Beatrix and Oryx at Virginia in the Free State province, South Africa. The proposed merger was as a result of the cost structure of the gold mining industry in South Africa which is escalating at an alarming rate. The main reason for the high cost structure has resulted from high demand of skilled and semi skilled labour coupled by external factors such as political, social, technological and economic environmental factors. As the mining processes and the depletion of underground ore takes place, a substantial amount of money is required in order to process the raw material from underground sources to finished product.

Beatrix gold mine is not immune to these economic challenges and therefore, management of the organisation is required to evaluate its business processes and reengineer the organisation accordingly for the benefit of all shareholders. For Beatrix gold mine to remain growing, profitable and sustainable, the executive management of the business has to manage costs effectively as expected by the shareholders and the financial analysts. Costs management is very important in an organisation like Beatrix gold mine because its shafts are marginal and sensitive to paylimit management.

Rightsizing or reengineering an organisation like Beatrix mine requires a great deal of sensitivity because employees across the organisation are affected. In South Africa, more especially in the mining industry, employees are laid off because labour cost contributes more than 55% of the overall cost structure in the organisation. However correct tools and approaches to restructure an organisation have to be used and followed. Elements of restructuring process require an effective planning, extensive communication, services of competent management and strong leadership.

In evaluating whether Gold Fields Free State gold plants should merge, an extensive analysis has been conducted by identifying all redundant infrastructure. It was clear during the research that the Oryx plant is underutilised due to insufficient feed and annual depletion. Another finding is that the production profile of the Beatrix mine is deminishing year on year and therefore, a restructuring programme is required as a matter of urgency. During the research process, empirical survey has been conducted.

The survey covered many aspects of the organisation including but not limited to the morale of employees, new technology, growth of the organisation, retrenchments, economies of scale and the influence of government in the management of the organisation. The survey was conducted in an attempt to establish whether the shareholders of the organisation will accept or reject the rightsizing process.

Chapter six of this management report covers the recommendations as well as the conclusion of the proposed merger. After an extensive due diligence process is concluded, it is recommended that Beatrix plants should merge but proper consultation process should be done diligently with trade unions and affected employees involved. It is further recommended that management must ensure that the morale of all employees remain high at all times. Moreover, the leadership of the Beatrix mine should ensure that cash is put aside to fund capital expansions while the gold price is still high.

LIST OF TERMS AND DEFINITIONS

In order to minimize ambiguity, words and concepts used in the literature review, are defined as follows:

- **Gold processing plants**

  The processing plant where gold bullion is extracted from the ore by means of crushing, grinding and smelting.

- **Efficiency and effectiveness**

  Effectiveness is 'Doing the right thing' and Efficiency is 'Doing the thing right' This note provides an alternative explanation from Coetsee, L.D.,(2002): p42.

- **Fixed and variable costs**

  Fixed costs are expenses that do not change in proportion to the activity of a business, within the relevant period or scale of production. Variable costs are expenses that change in proportion to the activity of a business.

- **Economic and financial valuations**

  In business, valuation is the process of estimating the market value of a financial asset or liability. Financial valuations are required in many contexts including investment analysis, capital budgeting, merger and acquisition transactions, financial reporting, taxable events to determine the proper tax liability, and in litigation.

- **Polarity management**

  A polarity is defined as sets of opposites, which cannot function well independently because they are interdependent

- **Return on investment**

  A performance measure used to evaluate the efficiency of an investment or to compare the efficiency of a number of different investments.

- **Net present value**

  Net present value is the present value of future returns discounted at the business costs of capital less the cost of the investment.

- **Internal rate of returns**

  The discount rate often used in capital budgeting that equates the net present value of all cash flows from a particular project to zero.

- **Capital Expenditure**

  Funds used by a company to acquire or upgrade physical assets such as property, industrial buildings or equipment.
- **Development**

  In mining terminology, development refers to any tunneling operation other than stoping or shaft sinking.
- **Shaft.**

  In mining terminology, a shaft may be described as a vertical or inclined tunnel from surface for conveyance of men, materials, ventilation, pumping water, in addition to hoisting ore and waste rock to the surface.
- **Pay Limit**

  Paylimit is the calculated value at which ore can be mined without profit or loss.
- **Reef**

  A reef is a natural mineral bearing substance of economic interest. It is further defined as a submerged ridge of rock or coral near the surface of the water.
- **Working cost**

  Working costs are direct and indirect costs, which can be associated with each unit of output produced.
- **Tonne**

  A tonne (t) or metric ton (M/T), also referred to as a metric tonne or tonne de metrice, is a measurement of mass equal to 1,000 kilograms.
- **Stope**

  Ore production area in a mine.
- **Grades**

  The grade of precious metal ore is usually measured in troy ounces per tonne or grams per tonne.

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CHAPTER 1

PROBLEM STATEMENT AND MOTIVATION FOR THIS STUDY

1.1 INTRODUCTION

Rightsizing an organisation is one of the familiar strategic business activities undertaken in companies which are inefficient and unproductive. Gold mining companies in South Africa are operating in an era in which their margins are squeezed due to the decline in production, coupled with vulnerability in the selling price of the commodity. These companies are faced with external challenges such as political, social, technological, and economic environmental factors, and as a result, such companies are under pressure to perform competitively and more profitably. Shareholders of the gold mining industries as well as the investment communities are deeply concerned about the declining growth rate and profitability of these companies. Reserves and resources in this sector are declining to such an extent that shareholders and executive managers are forced to restructure.

Restructuring of Goldfields` Beatrix Gold mine which is situated 30 kilometers south of Virginia in the Free State province of South Africa, is imminent. The mine consists of two gold plants and four shafts that operate at a depth of between 600 and 2000 meters below surface. This Goldfields operation produces 3,7 million ounces of gold with approximately 10 700 employees. Beatrix company`s infrastructure is only capable of producing 16 000 kilograms of gold per annum from the 3 900 000 tons per year capacity plants. Beatrix Gold Mine incorporates the Beatrix Plant, which forms part of the old Beatrix mine and the Oryx Plant which is part of the Oryx mine. The distance between these two gold plants is approximately 19 kilometers. The Beatrix plant was commissioned in 1983 with a milling capacity of 260 000 tons per month, using four mills with installed power

of 3 Megawatt per mill and the Oryx plant, which was commissioned in 1992 east of Oryx mine, and which is designed to mill 160 000 tons per month. Presently, plant throughput is below capacity due to insufficient feed. The Oryx plant is currently underutilised and is producing way below its capacity. The working cost of production at Beatrix Gold mine is currently at R 145 900 per kilogram per month excluding capital expenditure. The capital expenditure for the mine is R32 000 per kilogram. The gold is sold at an average, unpredictable selling price of R200 000 per kilogram. The uncertainties of the gold price and the continuous increasing of operating costs are the driving forces, which have resulted in management considering the merging of the two plants.

PROBLEM STATEMENT

In considering the gold production profile and the increasing of operating costs of the Beatrix Gold Mine, it is necessary to right-size the company in order to optimise the utilisation of assets with the aim of achieving maximum return on investment. The company has two plants which are presently not operating at their full capacity due to insufficient feed. The combined operating costs of these plants is averaging R11 500 per kilogram. It is significant that the Beatrix plant has been efficient for many years due to higher volume produced and better controls of costs and grades. The operating costs, consisting of labour, materials, utility as well as administration expenses of the two plants are continuously escalating on a year on year basis. Both plants together are costing the company a significant R125 million a year, which accounts for 6% of the total mine operating costs. The Oryx plant constitute a third of the total plant operating cost.

It is therefore, necessary to right-size the Beatrix plants in order to reduce costs and maximize revenue. The cost of transporting the ore from one plant to the other will play a critical role in the decision making process of whether the management of the company can synergise the plants. Apart from the transportation costs from Oryx plant to the Beatrix plant, the capital expenditure cost to upgrade the combined plant will be incorporated in the exercise.

The inclusion of capital expenditure costs in the exercise will require the company to run economic valuations, such as the net present values (NPV), the weighted average cost of capital (WACC) and the internal rate of return (IRR), coupled to sensitivity analysis.

1.2 OJECTIVES OF THE STUDY

Given the challenges facing the executive management of Beatrix Mine as stated above, the following is the primary objective of this study:

To evaluate the main objective for rightsizing the company and how the restructuring process at Beatrix gold plants, will be conducted with limited disruptions, taking into consideration the attitudes

of employees who will be affected by the change management process. The supporting objective of this financial evaluation process, is to propose a guideline by which the two different plants can be merged with an aim of optimising the assets of the company and the development of a cost reduction strategy that will benefit the company in the long run.

1.4 SCOPE OF STUDY

In conducting research for this mini-dissertation, the literature study will be conducted in depth, supported by the empirical research results which will be done in the form of structured interviews.

1.4.1 Literature review

Relevant literature is available to conduct this study. The literature review also covers the concepts, models and theories dealing with the process that must be followed when merging two similar entities as well as those related to effective cost management. Publications such as newsletters, textbooks, internet searches, management reports and publicly available financial reports will form the basis for the literature study.

1.4.2 Empirical Research

Structured interviews will be conducted in a way that allows the researcher to present the interviewees` opinions with regard to the restructuring issue.

The reason for the structured interviews is to establish the emotional feelings of employees regarding the rightsizing process, and the way it is to be conducted. The interview process will focus on the executive managers of Beatrix gold mine, operations managers, leaders of the trade unions and unit managers of the two plants. The leaders of the trade unions belong to the NUM, UASA as well as Solidarity unions. The national union of mine workers is the largest trade union, having more affiliates and more bargaining powers than the other unions. The proposed financial approach will also be used in the evaluation of the best strategy to optimise the utilisation of the available infrastructure. Recommendations will be made, based on the outcomes of the results after a conclusive analysis has been conducted based on the information obtained from the sample.

1.5 STRUCTURE OF RESEARCH

Chapter one provides a description of the problem at hand, being the rightsizing of the two metallurgical plants at Goldfields Beatrix Gold Mine, which are operating under uncompetitive cost structures. Chapter two presents the comprehensive review of the cost structures in the gold mining industry. This chapter covers the key concepts pertaining to cost management in the gold mining industry. Chapter three provides the considerations relevant to effective rightsizing process. Chapter four will basically deal with the analytical description of the restructuring process. Chapter five identifies the emotions of the employees and the affected parties with regard to the restructuring exercise.

Chapter six provides the summary, conclusions as well as recommendation of how the rightsizing exercise should be carried out without any failure. This chapter also proposes the application of relevant change management principles. Successes, limitations and constraints of the rightsizing process will be covered in the study.

CHAPTER TWO

COST STRUCTURE OF THE GOLD MINING INDUSTRY

2.1 INTRODUCTION

This chapter reviews some relevant aspects of the South African mining industry and, more specifically, the gold mining industry. Aspects relating to the existing cost structure in this industry as well as to effective cost management, are identified and discussed. The major objectives of any business concern are to stay competitive, optimise profits and satisfy customers by effective utilization of the best human talent, technology and other resources. Dynamic cost management plays a key role in this regards. This is especially true of the gold mining industry where mining executives have no control over the price of the product that their organisation produces.

An unfortunate side-effect of ongoing cost management is the fact that employees are often laid off due to the major contribution of labour cost to the total structure. Sometimes these layoffs are not terribly severe; further, such layoffs may be accomplished by attrition. If the economy is good, and the laid off employees have up to date skills, they may actually benefit from moving. However, frequently laid off workers may not find the opportunities available to them as financially appealing as the jobs they left. This has a negative impact on the local economy. The main issue to be addressed or researched concerns the way in which the mining sector should ensure minimum job losses during rightsizing exercise, which frequently accompany cost management processes . Another econornic impact is on the management side of organizational structure. Management ranks may suffer more job loss on a percentage basis, than employees may.

2.2. Key concepts pertaining to cost management in the gold mining industry.

2.2.1 Cost management in the mining industry

According to the Statistics South Africa, the mining industry constitutes at least 18% (percent) of the gross domestic product (GDP) of the economy of South Africa. The industry contributes more than 300 000 jobs in the economy and therefore, it remains an industry with a high labour cost structure. The industry produces among others, the following outputs, namely platinum, gold, manganese, coal, chrome, oil, palladium, steel and silver. The productions of these base metals come at a significant cost. In the South African mining industry, more than 55% (percent) of cost is related to labour, 25% (percent) is associated to the material costs, 15% (percent) being the cost of utilities such as electricity and water and the rest (5%) is allocated to general overheads. This percentage split in cost structure is applicable to any conventional mining company in South Africa.

2.2.2 Production profile in gold mining industry.

The current gold production profile in the gold mining industry is declining at a rapid pace year-on-year. The main contributor to the decline in gold production is lower grades. In past financial years, the industry averaged yields of 8.0 grams per ton versus the current yields of 4.5 grams per ton. The yields have been affected mainly by the depletion of high grade panels year-on-year. The grams per ton at Beatrix mine shafts, used to be on average, 7.0 grams per ton, but now things have changed for the worse to 6.0 grams per ton. The gold mining industry consists of companies that are labour intensive. The new technological methods of mining have been recently introduced in an attempt to use machinery rather than physical labour to produce an end product, but the pace of introducing these machines is very slow due to a shortage of skills. Once the production profile starts reducing in an organization, managers of the organisation must think differently. This usually entails that the organisation has to be reengineered or restructured for the benefit of all stakeholders.

2.2.3 Labour and other employee related costs.

Labour costs are split between the white collar (skilled officials) and blue collar labourers (unskilled and semi–skilled). In the gold mining industry, skilled workers are paid a monthly salary and the unskilled labour are paid wages based on their shifts worked for that particular period. A good percentage (60%) of labour costs is associated with basic pay and the rest is allocated to company contributions, for instance, pension fund, medical cost as well as leave contribution. Pension fund constitutes 25 percent of the basic pay and any cost associated with medical services constitutes 14% of the basic remuneration. Apart from the normal pay, the gold mining industry pays quite substantial amounts of money on production bonuses and overtime.

For every extra square meter produced, development meter advanced and ounce of gold smelted, the companies are prepared to pay bonuses as an appreciation for the job well done. Senior officials are often paid their bonuses once every year. The senior managers` bonuses are based on the performance of the company as measured by the achievement of the key performance indicators (KPI`s). The KPI`s are safety, production, people management, financials as well as the contribution towards social investment. Overtime cost is also classified as labour cost. This type of cost constitutes 20% (percent) of the total labour cost. In the mining industry, overtime is only paid to employees who are involved in the maintenance of the company`s infrastructure after hours as well as for the unforeseen breakdowns. In cases where production is low against the planned targets, employees are expected to work overtime. This can only be done on the *off*-Saturdays, public holidays and Sundays. The overtime payments are often paid at an escalated rate as determined by the Basic Conditions of Employment Act.75 of 1997 (Bendix, S, 2000:745). The Saturday overtime shift is mainly paid at one and a half time the normal rate. Sunday overtime is treated like a holiday shift which is paid at a double time rate.

Skills shortage in South Africa, more particularly in the mining industry, is causing a significant brain drain. Companies in the gold mining sector are fighting for the

limited skills available. The skills shortage is mainly in the key areas such as engineering, geology, environmental management, survey, project management and rock mechanics. The shortage of skills has been caused by a lack of training and development programs from the internal ranks. Another cause of the skills shortage is a result of skilled employees migrating to other countries across the globe. Therefore, the available skills in the gold mining industry are available only at a huge labour cost.

2.2.4 Raw material costs.

Material costs are expenditures associated with the use of consumables in the production of the commodity. In gold mining companies, a fair percentage 60% of the total material inventory in the warehouse are used in the underground environment and the remaining percentage (40%) is attributable to surface operations. This underground environment is where the stoping and development mining takes place in large quantities. The underground materials include among others, explosives, support, drilling, cleaning and reticulation. Production underground depends heavily on the availability of these consumables. Consumables are also used at both the ore processing plants and the smelting houses. Ore processing consumable materials include among others, chemicals, caustic soda, carbon, acids, cyanides, steel balls and assays materials. These are the more expensive type of materials that are sourced from local as well as international supply sources.

In the gold mining industry, engineering spares are used to maintain the shaft and surface infrastructure. The majority of the engineering spares include among others, compressor spares, conveyor belt spares, hydropower spares, electrical spares, crushers, skips, loaders, mill spares, hopper and pump spares. Commodities such as oil, fuel, lubricants and diesel are also used as stock items in the mining sector. These commodities are classified as inventory stock due to

the fact that they serve as the basic requirements in the maintenance of heavy machines and equipment. Stock or inventory in a warehouse constitutes 60% (percent) of the material cost in any mining company within the industry.

2.2.5 Utility costs

Utility costs are costs related to the use of water and electricity. The utilisation of power and water is now becoming very expensive in the gold mining industry. South Africa is generally known as a country with limited utility resources. The mining industry consumes a larger percentage of electricity as compared to other large factories in South Africa. Although the government requires companies to use the electricity sparingly, this commodity is very expensive and Eskom is expected to increase their tariffs by 25% in the near future. Companies are expected by the authorities and regulators to use 10% less than the normal electricity due to a shortage of megawatts in the market. The shortage of electricity was mainly caused by economic growth in the country. This initiative by government has caused the mining houses to manage electricity sparingly and effectively. The mining houses uses the electricity in pumping the water, running the compressors, cooling the hot working areas underground and for lighting and hoisting the ore.

2.2.6 Mine Overheads.

Overheads constitute 6% of the overall costs in many of the mining companies researched. These are costs associated with legal, information technology, corporate costs, contractors, consultants and other sundry costs. These costs need to be closely monitored from time to time because they always tend to get out of hand. In many instances, these costs are avoidable and can be reduced to a minimum.

Table 2.1

Comparative working cost structures for the selected South African mining companies.

Name of the company	Labour Cost %	Material Costs %	Utility Costs %	Other Costs %
Anglo Gold	54%	24%	15%	7%
Anglo Platinum	58%	22%	15%	5%
Xtrata	56%	24%	13%	7%
Goldfields Ltd	55%	23%	16%	6%
Harmony Gold Mines	58%	21%	17%	4%
Lonmin Platinum	52%	25%	16%	7%
Nothham Platinum	52%	26%	18%	4%
Rand Gold	58%	23%	17%	2%

Impala platinum	50%	23%	18%	9%
Sasol	55%	21%	19%	5%
Africa Rainbow Minerals (ARM)	53%	26%	15%	6%
Anglo Coal	58%	27%	13%	2%
Accerlor Mittal Steel	51%	27%	18%	4%
Uranium One	56%	24%	14%	6%
Average %	**55%**	**24%**	**15%**	**6%**

Sources: Annual Financial Reports, June 2008

Apart from the above mentioned industry working cost percentages, the industry is heavily dependent on the capital expenditure which emerges as a result of expansions and infrastructure upgrades. Billions of rands have been and will be invested in this industry in order to fund these expansions. The shortage of energy and the demand for mineral products across the globe has influenced the prices of these products. It is every company`s objective to keep the costs as low as possible, but on the other hand, maximise production. The influence of economic factors such as inflation and the higher cost of living, make it almost impossible to contain costs within the acceptable levels. Management of each mining com-

pany is striving very hard to produce more with fewer resources. Companies with heavy cost structure such as gold mining industries, would like to optimise their costs by producing more and reduce surface costs by amalgamating some sections of their operation in an attempt to reduce unit costs. The consequences of these problems are that employees and management may lose their jobs and suffer both emotional and physical problems while shareholders might see the value of their shares decline if proper due diligence is not conducted. The following benefits might be achieved by the stakeholders in the company if proper rightsizing operations are conducted:

- Cost efficiency
- Improved earnings and sales stability
- Ensuring a steady supply of all required resources
- An improvement in corporate tax savings

2.2.7 Cost advantages

Unit cost such as the cost per ton, cost per ounce and cost per kilogram are the main measurement of cost leadership in the mining industry. In South Africa gold mining, cost leadership is measured in terms of the cost per kilogram and cost per ton. The top three gold mining companies in South Africa are Anglo Gold Ashanti, Goldfields and Harmony. These companies are running their operations at the deep levels of between 1000 meters to 3000 meters underground. Some of these operations have tertiary shafts and main shafts to hoist ore and materials. The maintenance costs of these ageing shafts lead to very large expenditures. Therefore, it is imperative to manage very carefully the maintenance costs of the companies. Deep level mining requires a new way of thinking in terms of utilising new technology in the industry. These companies should be able to root out all unnecessary costs within the system for their ultimate cost advantages. The following table depicts the cost per unit within the major gold mining companies in South Africa.

Table 2.2

Comparative cost per unit structure for the major gold mining companies in South Africa.

Name of the company	Total Cost per kg	Total Cost per ton	Total Cost per M2	Total Cost per Ounce	Cost per Dev meter
Anglo Gold Ashanti	R 115 200	R 580	R2 500	R 3 000	R 10 540
Gold Fields Limited	R 125 300	R 600	R2 800	R 4 200	R 11 800
Harmony GM Limited	R145 500	R 780	R3 500	R 4 800	R 12 400

Sources: Quarterly Financial Presentations, June 2008

2.2.8 Economies of scale

The economies of scale refer to a decreased cost per unit as output increases. This results in fixed costs being spread over a larger magnitude of output. Economies of scale can be utilised by any size mining company by expanding its scale of operation. The most common form of economies of scale, entails the purchasing of materials in large quantities from reliable suppliers at a discount price. More specialised and competent managers can be used to avoid huge and expensive organisation structures. According to Philip, M. and Louis,F. 2004 : p 161, another scale economy is found in attempts to decrease the overall cost of capital in the company.

2.2.9 The involvement of government and other authorities in the mining industry.

The South African Mining Charter requires all mining companies to address the skills gap prevailing among the historically disadvantaged South Africans. This requirement comes at a huge cost to these organizations. Mining companies are also required to shed 30 percent of their percentage ownership to the Historically Disadvantaged South Africans by the 2009 fiscal year. Moreover, the authorities are very concerned with the environment in which these companies are operating. By the time the mining company has depleted the ore body on the underground operations, the authorities are expecting them to rehabilitate the environment.

All mining companies in SA are expected to have their social and labour plans ready for implementation by the 2009. All these initiatives come at the huge cost and therefore, must be provided for in the annual operational plans. The following are some of the requirements imposed on companies by governments and authorities.

- Ensure that employees are trained in an attempt to reduce the skills gap.
- Employment equity targets at 40% on management levels reached by 2009.
- Women in mining targets are set at 5%.
- Mining companies should spend more money on local companies through their procurement processes.
- Ensure that the Human Resources Development programs are accelerated within the organisation.
- Mining companies are also required by the Mining charter to spend more money on the upgrade and improve the living conditions of their employees.

A significant amount of funding has been set aside to achieve these objectives. The rules of engagement have changed. Companies are expected to achieve all

these within a certain allocated time of which failure to comply will results in some of the companies charged and liable financial penalties.

2.2.10 Capital Expenditure (capex) investment in the mining industry

Capital expenditure investments are expenditures creating future benefits to shareholders. A capital expenditure is incurred when a business spends money either to buy fixed assets or to add to the value of an existing fixed asset with a useful life that extends beyond the taxable year. Capex are used by a company to acquire or upgrade physical assets such as equipment, property, or industrial buildings. The internal growth of an organisation depends primarily on the capital expenditures.

In the gold mining industry, capital expenditure has been reviewed as a result of volatility and uncertainty in the global markets which resulted in the fall in commodity prices.

2.3 Summary and conclusions.

From the above, it is abundantly clear that dynamic cost management plays a very important role in ensuring long term survival and sustainable profitability of the gold mining companies. Successful cost management should realise all the potential benefits of economies of scale and profitability. The result will be a gold mine producing a higher quality product at an acceptable level of targeted input costs, while utilising the best competencies trained and empowered human resources, as well as the available technologies. As labour cost is by far, the largest cost component in gold mining, some degree of business process reengineering (rightsizing) is unavoidable in cost control exercise. However, such processes are of a sensitive nature and can cause significant deterioration in employee morale and commitment. This process requires strong leadership with a vision and focused objectives.

The following chapter will address issues relevant to an effective rightsizing exercise in the gold mining industry.

CHAPTER 3

CONSIDERATIONS RELEVANT TO EFFECTIVE RIGHTSIZING PROCESSESS.

3.1 Introduction

This overview focuses both on downsizing in the narrow sense (workforce reduction),and on related, generally broader or more fundamental strategies such as rightsizing and rethinking. Key terms are defined, the importance of downsizing is stressed and implementation approaches, tools, results and lessons are highlighted. Because most "lessons of experience" suggest that workforce reductions are rarely effectively undertaken in isolation (i.e., downsizing for the sake of downsizing is increasingly regarded as a highly ineffective strategy), the overview attempts to weave together themes pertinent to downsizing, to rightsizing, and to some extent, to rethinking. Terminology is a real problem in downsizing. Downsizing is associated, and often confused, with numerous terms. Gradually, however, a set of tools and definitions have been developed that define the different approaches.

3.2 Administrative reform

Reorganization, restructuring, and virtually all of the definitions below are a subset of an area of study and practice known as administrative reform. Administrative reform is the induced systemic improvement of public sector operational performance, and came of age in the 1980s.

- **Reorganisation/ Restructuring**

Changes in organizational structure are usually called reorganisations. Reorganisation is a process that changes the distribution of responsibility, and the prevailing lines of authority. It has technical, political, economic, and social aspects. Reorganisation concepts apply at many different levels (e.g, branch, division, agency, bureau, section, unit). The scope of the reorganisation is defined by the level that is the target(s) of the effort. Restructuring involves moving, adding, or

eliminating organisational boxes or units represented by an organisational chart. Restructuring can also be defined as rebuilding the strength of an organisation by changing its asset structure and its resource allocation patterns (Thompson A, Strickland A.J and Gamble J.E. 2007:306). Reorganisations do not include normal, expected, routine changes or minor changes to which the organisation can readily adapt.

- **Downsizing / Workforce reduction**

According to Cummings,T.G. and Worsely, C.G. 2005:151, "downsizing" was coined to define the scaling down of car sizes by automobile manufacturers. The term was first applied to the process of cutting back employees when business and government began making major reductions to their employee bases in response to recessionary pressures in the 1980s. Downsizing is a type of reorganisation or restructuring. Downsizing or workforce reduction is a strategy to streamline, tighten, and shrink the organisational structure with respect to the number of personnel the organisation employs. As downsizing has become more prevalent, the term has lost its original precision (i.e., workforce reduction). Today, the term downsizing is used both to refer to a narrow effort to reduce the workforce and also to broad efforts to improve work systems or redesign the total organization.

- **Reengineering**

Reengineering changes the way work processes are carried out, to better serve the customer, client, or citizen. Reengineering is a strategy to redefine, and perhaps reduce, the business processes of an organisation. Workforce reduction may be part of reengineering. Today, information technology is usually central to the re-engineering of business processes. This process is also known as process management and process design.

- **Rightsizing**

Organisation structure, however, is more than the boxes on a chart; more than the number of employees, positions, or jobs; and more than business processes (e.g., it includes formal and informal patterns of interaction that link all organisa-

tional elements toward mission accomplishment). Rightsizing can involve reducing the workforce (downsizing) as well as eliminating functions, reducing expenses, and redesigning systems and policies (e.g., to reduce costs or reduce organizational size). It can also require upsizing (increasing the workforce) in certain areas. Rightsizing eliminates unnecessary work and improves and prioritizes the most important work. It is a multifaceted attempt to reshape the total organization. Some adherents also cater rightsizing a strong humanistic orientation. The following terms are synonymous: lean organisation, revitalisation, renewal, reinvention, total organizational performance organisational design.

- **Layoffs**

Layoffs are the termination of employees with or without advance notice and for reasons other than performance. Layoffs are one of many tools used to implement a downsizing strategy to reduce the size of the workforce. Downsizing can be done with or without layoffs. Downsizing includes an array of other tools to reduce the workforce.

3.3 Fundamental choices in implementing downsizing exercise.

The effective executive is likely to be a person who delights in the chance to choose the best path according to his own lights. There is no one best or simple way to undertake structural change aimed toward cutback, retrenchment, downsizing, rightsizing, rethinking, or any of the numerous terms in use today. No matter how the downsizing mandate surfaces, the administrator faces numerous choices. The most important choice is the overall orientation toward change: Whether to be incremental and reactive, or whether to take a more strategic, proactive approach.

3.3.1 The incremental approach

According to Cummings,T.G. and Worsely, C.G. 2005, both public and private decision makers often adopt a reactive attitude to the forces of change. When

they do so, their responses usually follow a predictable, incremental sequence. The first stage is typically denial that anything is wrong, denial that change is on

the horizon. In many organizations, employees hear the terms "administrative reform" or "reinvention" or "workforce reduction" and believe "this too shall pass." The second stage is patching an experiment here, a law or rule change there, an agency reorganised somewhere. But deep or pervasive systemic change is still elusive. The third stage is crisis as the forces of change that have been denied to this point come to the fore. Deep, cost-driven, radical downsizings occur at this stage along with other crisis-driven, typically short-term responses or what is called the "amputation without diagnosis." These types of downsizings yield mixed, if not dangerous, results: smaller versions of what did not work before; loss of institutional memory; performance interruptions; and an anxious and mistrustful group of survivors.

The fourth stage is rightsizing. Organisations in this stage ask questions about both structure and process. They engage in downsizing and in business process reengineering. They look at the long term, at total performance, and at what they can do to create or add value. But they still tend to assume that the existing organization needs only to be repaired or that the system is simply somehow flawed, and that if only the system is fixed, the solution will be obvious. Organisational members may suspect that the situation is still unsound, but lack the mental maps, tools, and language to express alternatives. Organisations often downsize reactively, with little consideration of the long term costs and implications for future effectiveness.

3.3.2 The strategic approach

Organisations often have a choice: They can follow the above incremental approach or they can take a more strategic, proactive approach that interrupts the reactive sequence. While the incremental approach to downsizing is less painful in the short run, in the longer term the strategic approach is likely to produce more effective results, more quickly. Strategic downsizing is more complex, involving the use of multiple decision criteria in the selection and

configuration of downsizing strategies. The strategic approach is fundamentally a process of rethinking, which entails a search for new mental maps and new tools.

Rethinking asks: Why do we exist in the first place? What results should we produce given the resources available? Cutting expenses becomes a means to broader ends. In the public sector, those broader ends might include effects on the democratic process itself. The following are suggested principles for adopting a strategic approach aimed at seizing downsizing as an opportunity for fundamental rethinking:

- Use a systematic framework and methodology, rather than an unstructured approach to the downsizing / rightsizing exercise.
- Determine whether downsizing is driving the process or whether a broader or more fundamental set of goals is appropriate (e.g., changing mission, changing work processes, changing and reducing workforce).
- Review the conditions precipitating the downsizing as well as the range of tools available to achieve it.
- Develop a change-management plan with a clear vision--especially of the ideal future organizational identity and specific steps to conduct and oversee the transition.
- Develop a plan to maintain and improve organisational performance during and after the downsizing process.
- Consider how to involve employees, union officials, citizens, and customers throughout the downsizing planning process.
- Have a clear understanding of the administrative and "legal ripple effects" inherent in the use of downsizing tools.
- Generate alternative scenarios based on a range of different assumptions about key, unpredictable variables, including costs.
- Develop a plan to implement whatever strategies are chosen.
- Identify the people who will be affected. Will they need retraining or outplacement assistance? What core competencies must be retained? What are the needs of new employees?

- Create placement opportunities and allow reasonable time for employees to find jobs elsewhere.
- Follow-up and engage in ongoing rebuilding.

3.3.3 Other possible challenges with regard to the downsizing exercise

The downsizing of companies across the globe is published almost on a daily basis in the newspapers, business magazines, radio and television. The gold mining industry is also not immune to these challenges. The downsizing process is chiefly focused on the impact on the employees, as they are the ones most acutely experiencing the effects. The following are some of the challenges facing the mining industry during the rightsizing exercise:

- Downsizing may provide a decrease in operating expenses in the near future, but it might have a major impact in the long term future.
- Mine executives need to carefully consider the long range effects of cutting employees because the employment of today are totally different to the employees of the 1970`s and 1980`s.
- The major mistake that the business leaders commit when downsizing is to cut the production blue collar personnel instead of white collar workers.
- In the mining industry, new technology plays an integral part in driving the production engine.
- Senior workers in the organization are the more expensive and therefore must bear the brunt of reduction due to their higher cost of compensation.
- Lack of a recallable employee pool. Recent practice is to inform employees that their release is final and they are provided outplacement services. The employers themselves are accordingly, ensuring that these people will not remain available to them.
- Poor morale and lack of trust among younger employees as terminations increasingly target older employees. The termination of large numbers of

older and more experienced mining employees, has a profound long term effect on the company loyalty of younger employees. These young employees tends to believe that the reward for loyalty is to be axed when you are over fifty and unable to find another comparable position.

- Loss of knowledge and experience base. This is a frequently overlooked aspect of the cost of losing long term employees. Many companies in the mining industry currently developing knowledge bases in order to capture and access organizational knowledge resources. Yet, no matter how effective these databases are, and they can be extremely beneficial, they will never be a substitute for the knowledge, experience and wisdom that rests in the veterans of the organisation.
- Loss of corporate culture and available mentors for existing and new employees. According to Schein, E.H. 1992:11,a loss in the corporate culture and available mentors can cost any industry including the mining sector a fortune. This loss of continuity is also reflected in dispossession of the corporate culture. Considering that change is healthy in any company, however, there are some things that should not change. Every organisation needs to have incontrovertible statements that transcend the fluctuating business climate and current trends. These values can and should be committed to pen and paper, but they are not passed on in this manner, at least not primarily. Rather, they are taught and lived and mentored from one person to the next. The fewer seasoned people the company has to pass these on, the less they will be able to maintain the soul of the organization. Therefore when conducting a downsizing exercise companies should not only consider cost cutting benefits.
- Employees may be needed again before termination savings are fully realized. In cases where terminations include substantial severance and outplacement costs, these plus the training and initial inefficiency costs of rehiring frequently equal one to several years of the terminated workers` cost to the organisation.

- Possible need to bring employees back as independent contractors at higher total cost. The shrinking labor pool in the mining sector together with the fact that a high percentage of the middle-aged and older terminated employees are either beginning their own businesses or opting for early retirement will mean that many of those who are willing to return to former employers will want to do so under their own conditions. A large number of these may choose to do so as independent contractors preferring to gain a greater degree of control over their own lives. Many companies initially prefer this approach believing that they may only require the services of the former employees for a limited period of time. Frequently, however, the weeks and months become years and the independent contractors, knowing the inner workings of the organization and where projects and sponsors may be found, remain costing the company significantly more than if they had remained on the payroll.
- Hidden costs that are never fully accounted for such as declining morale, lost customer relationships and lost productivity due to over-stressing the remaining employees. There are very real costs associated with mass layoffs that in my experience are almost never fully assessed. In the mining industry, there is a brain drain in engineering and technical staff. This brain drain results in declining morale, disrupted customer relationships, a frequently steep decline in customer service and the frustration of remaining employees who cannot possibly absorb all of the responsibilities of their departed coworkers, results in a surrender to cutting corners wherever possible.

3.4 Summary and conclusions.

Beatrix gold mine, as a key player in gold mining industry, has not escaped the relentless environmental pressure to become significantly more cost competitive. A major cost-saving, as well as greater efficiency and productivity can be realised by merging its two gold plants. However, as the preceding issues and considerations outlined in this chapter has indicated, great care needs to be taken to ensure that this merger process and its intended rightsizing exercises, are conducted in an effective and focused manner. By so doing, the full advantages of

the process can be realised while attempting to soften the negative effects of the disadvantages. This proposed merger will be analysed in more detail in the following chapter.

CHAPTER 4

ANALYSIS OF THE PROPOSED MERGER BETWEEN THE BEATRIX GOLD PLANTS

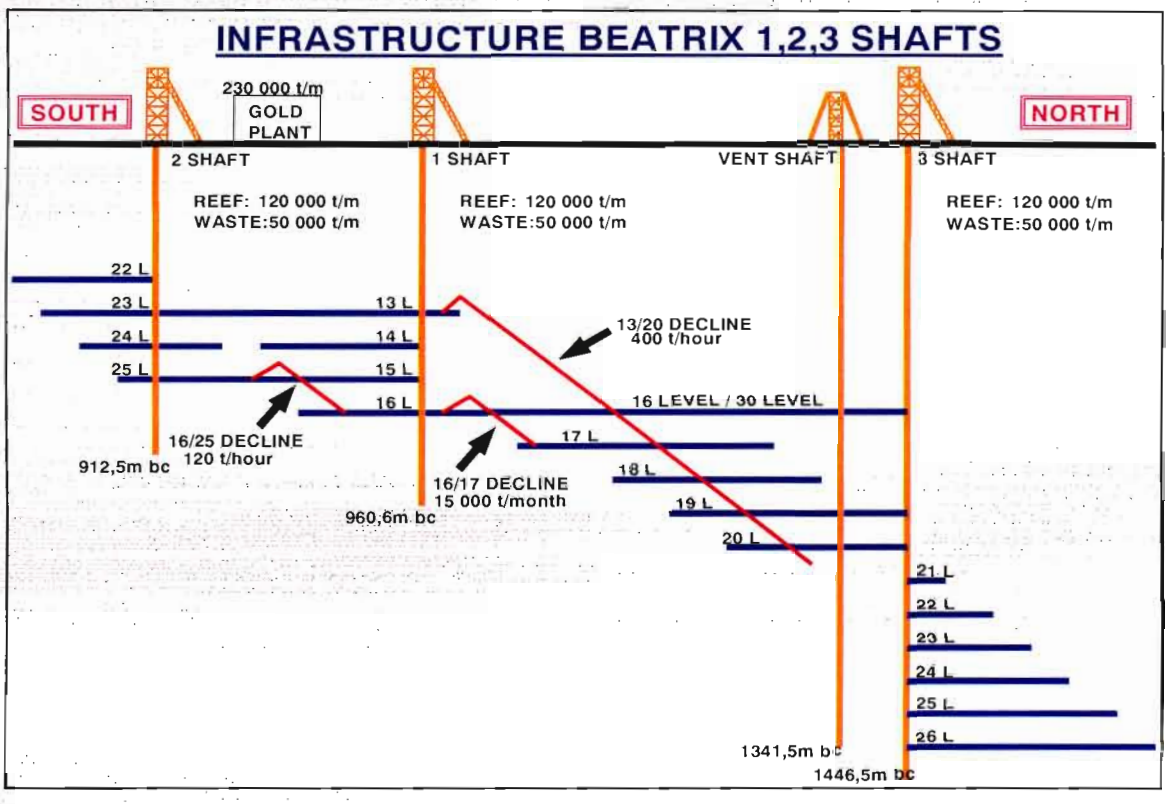
4.1 The analysis of the process

The rights sizing of Gold Fields Beatrix gold plants has been on the table and intensively discussed by the leadership of the operation during the financial year 2007 annual strategic planning processes. The Beatrix executive team has deemed it necessary to do a feasibility study on whether there can be a benefit in merging the two plants without disturbing the daily running of the organisation. The empirical research has been conducted in an attempt to evaluate whether it will be necessary to merge the two plants. Proper procedures and processes have to be followed in order to do this cost cutting exercise correctly without losing the core operational focus.

The evaluation of the merger exercise between the Gold Fields Beatrix plants is primarily based on the condition of the infrastructure of the Beatrix mine which is subdivided into four different shafts and two gold plants. The shafts are divided into Shaft No1 to Shaft No 4. The shafts no 1 to Shaft No3 are grouped together to form the so called the Beatrix Shafts and the Shaft No 4 is well known as the Oryx. The two plants combined are capable of milling a capacity of 380 000 tons per month. The actual tons hoisted from the four shafts are averaging 280 000 tons per month. This deviation between capacity and actual simply means that the feed to the plants is insufficient and therefore, the executive leadership of the mine have to re- engineer the business in an attempt to optimise the resources of the company.

Figure 4.1, reflects the Beatrix 1, 2 and 3 shafts. This infrastructure is situated on the Northern side of the organisation.

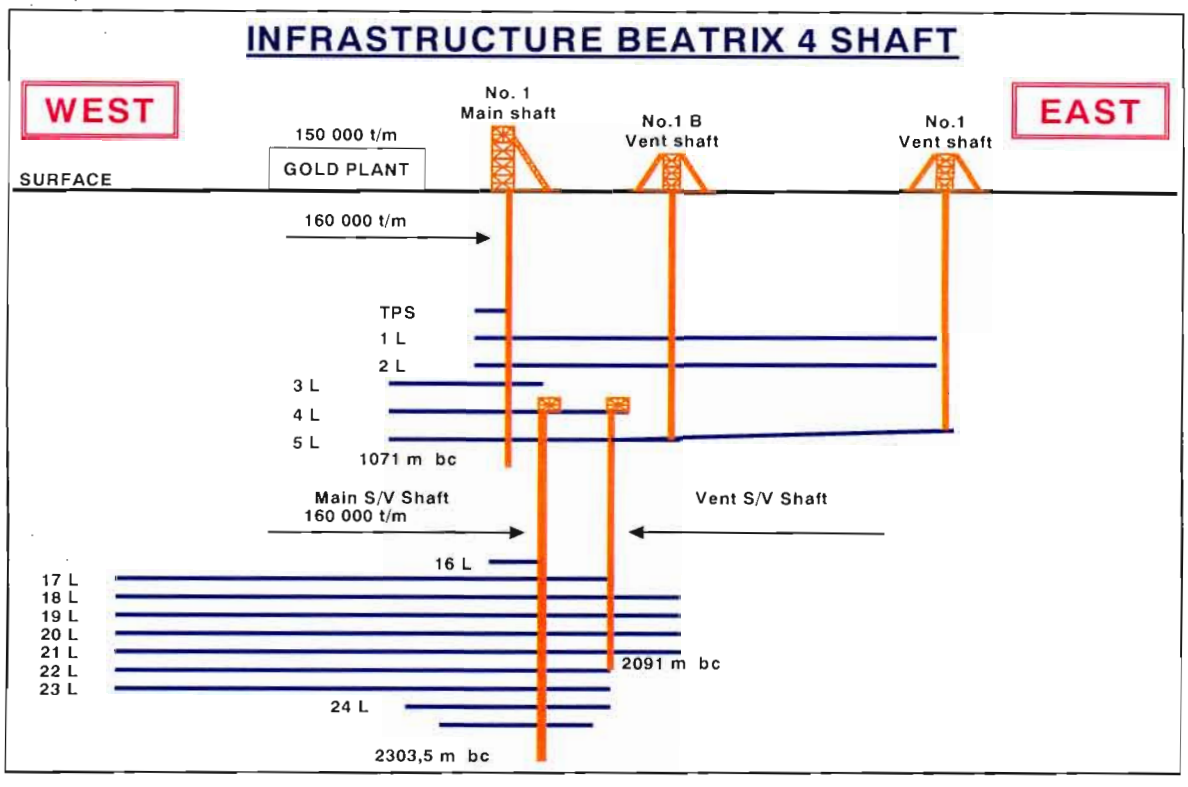
Figure 4.1



Sources: Internal Gold Fields design documents.

Figure 4.2, represents the Oryx (shaft) infrastructure which is situated on the west side of the business unit. This is where the Oryx plant is situated as well.

Figure 4.2



Sources: Internal Gold Fields Beatrix design documents.

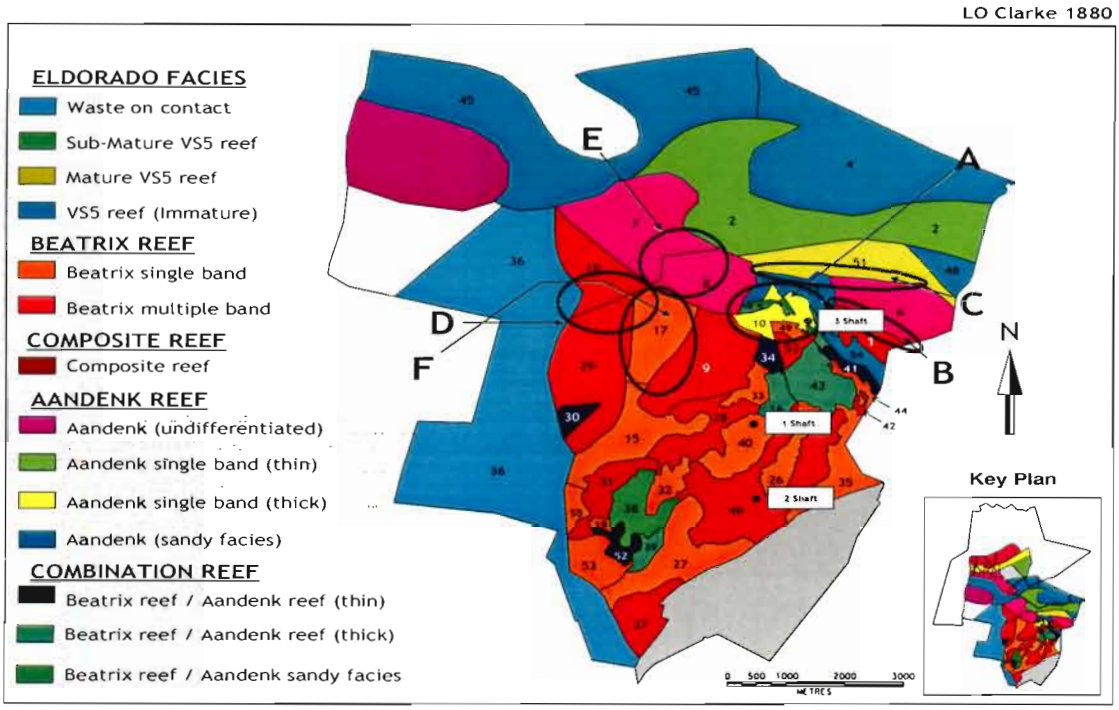
The above mentioned infrastructure has been designed or engineered to produce 160 000 tons per month for the next 15 to 20 years, which is in line with the life of mine profile.

4.2 The Beatrix and Oryx geological model

The current geological model of the Beatrix and Oryx production mine provides an indication as to whether the two plants should merge. The main reason for evaluating the geological model is to ascertain the sustainability of the proposed merger activity between the plants. From figure 4.3, it is clear that there are still gold deposits of reef available which can sustain the Beatrix operation for the next 15 years.

Figure 4.3

Geological facies and reef deposits at Beatrix shafts.



Sources: Gold Fields CPR documents. (Beatrix Division).

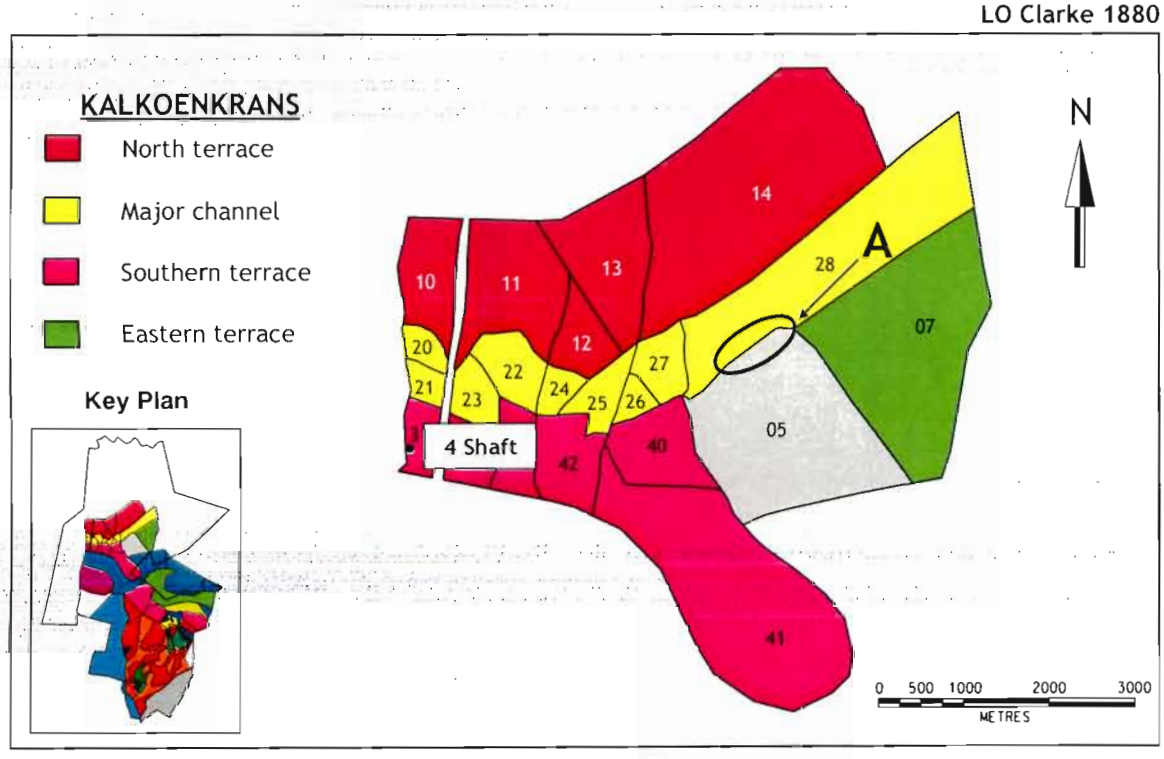
The Oryx mine geological model does not take anticipated big changes that can affect the production of ore in the future into account. Limited changes have been implemented at Oryx shaft as the reef deposit model is stable and no new data has been provided that materially impacts the overall reef deposits plan. The two important changes are as follows:

- The boundary line between zone 5 and zone 28 (main channel has been moved north by approximately 100 meters.(area A , Fig 4.4) This change is due to the fact that the current deposits distribution line passes through an operating stope that exposes reef morphology is all consistent with the thick zone 5 reef deposits. To the north, boreholes indicate a thinner conglomerate reef type and consequently the adjustment has been made

- The two surface boreholes have confirmed the southern extension of the zone 5 reef type (especially DBE 2) with thick, multi layered stacked sequences of conglomerates that are consistent with a higher energy accumulating fluvial environment. In the South East, borehole DBE 3, exposed a slightly thinner reef type with higher proportions of inter - bedded quartzite, reflecting a sub deposits. This sub deposits is similar to the localised sandy facie exposed in the 20 C3 S6 Lines in zone 5 and is considered a localised feature.

Figure 4.4

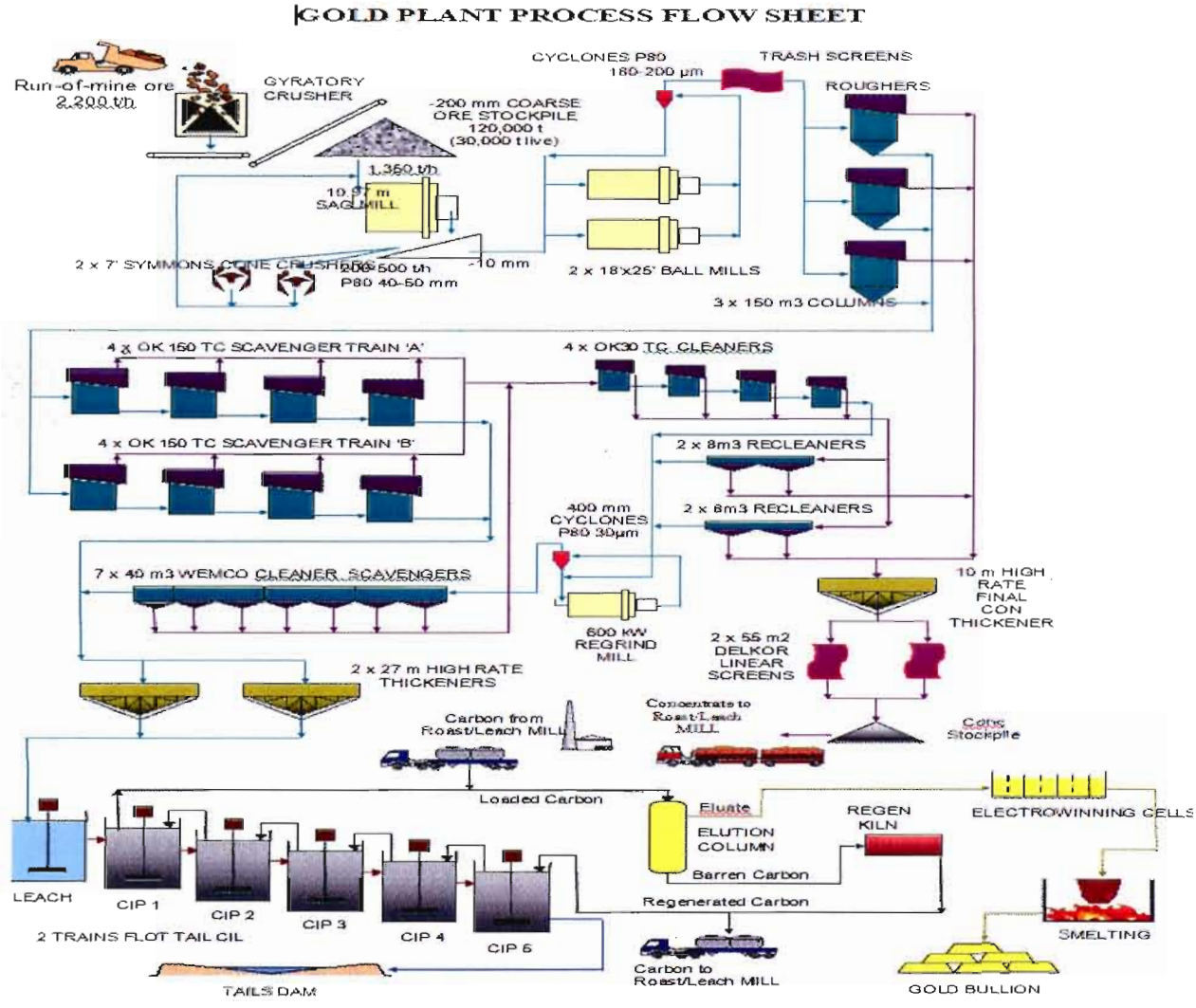
Geological facies and reef deposits at Oryx Shaft



Sources: Gold Fields CPR documents. (Beatrix Division)

The following diagram shows the process flow sheet of the Goldfields Beatrix plants. The design of both the Beatrix and the Oryx plant is the same. The only different is that the Oryx plant is smaller than the Beatrix due to the capacity.

Figure 4.5



Sources: Goldfields Internal documents

4.3 The Paylimit or sensitivity point of the organisation.

It was stated clearly in chapter two that the cost management behaviour of most mining companies is not very effective. The main reason for this behaviour in cost management is as a result of high input costs which are mainly affected by inflation and other economic factors. On the other hand, the gold production output is declining year–on–year. This combination of high costs and lower gold output results in paylimit management. The current average grade value of Beatrix mine is at 6.0 grams per ton. At these values, the mine can still show a positive contribution to the bottom line and profits of the organisation. If the values drop to the 5.0 grams per ton to ultimately 2.0 grams per ton, the leadership of the organization should consider the restructuring or re engineering of the business. Paylimits are sensitive numbers that direct the geology and the planning professionals within the organisation to supply proper details of what the organisation can produce for a certain period. If the paylimit calculations are wrong, the organisation cannot be reengineered properly. It is therefore, important that the cost of the Beatrix operation is reduced in order to sustain the pay limits in the future.

The following page , shows how the paylimits of Beatrix and Oryx mine is calculated per shaft

Table 4.1

Paylimit Calculation of the Oryx shaft at the west Section of the mine

Beatrix Underground Operation — **West Section**

Reserve Pay Limit — **Strategic Plan F2008**

Excluding Reclaim Plant and Surface Sources

Working cost - U/G	Rands	43,000,243	Include Dev cost		
Tons milled - U/G Sources	Tons	75,492			
Unit working cost	R/t	570	R/m²	R 3,583	
Gold price per kilogram	Rands	100,000	MCF	88.6%	
Gold required to break even	kg	430.002	m²	12000	
Required recovery grade	g/t	5.696			

ORE FLOW

Description	%	m²	Width (cm)	Tons	Grade (g/t)	Content (kg)
Recovery		12000	233	75,492	5.7	430.002
Residue				75,492	0.213	16.058
Milled				75,492	5.9	446.061
Mine call factor	88.6%			75,492	6.7	503.454
Less From Surface Sources				0		0.000
Less Decrease in stock pile				0		0.000
Add Increase in stock pile				0		0.000
Total ore tons hoisted				75,492	6.7	503.454
Less Main & sec. dev. to mill	2.2%			1,661	5.6	9.301
Less Reclamation				0		0.000
Stope ore hoisted				73,831	6.7	494.154
Less Discrepancy "Shortfall"	17.6%			13,287	0.0	0
Add Discrepancy "Excess"	0.0%					
Total stope ore measured				60,545	8.2	494.154
Dilution Other sources Stoping	4.7%			3,548	0.0	0.000
Dilution	0.0%					
Less Total Dilution	4.7%			3,548		0.000
Reef only m²		11748				
Total measured stope ore	75.5%		176	56,996	8.7	494.154

Pay Limit Value cmg/t	Grade g/t	Stope Width cm
1,530	8.67	176

Remarks:

No deviation from Historical modifying factors, volumes based on last Strategic Plan Nov 2005 schedule. WC based on latest financials.

Sources: Beatrix Internal CPR Report. F 2008

Table 4.2

Paylimit calculations for Shaft No 1 in the South Section of the mine

Beatrix Underground Operation — **South Section**

Resource Pay Limit — **Strategic Plan F2008**

Excluding Reclaim Plant and Surface Sources

Working cost - U/G	Rands	40,181,873	Include Dev cost	
Tons milled - U/G Sources	Tons	93,555		
Unit working cost	R/t	430	R/m²	R 1,913
Gold price per kilogram	Rands	135,000	MCF	88.0%
Gold required to break even	kg	297.644	m²	21000
Required recovery grade	g/t	3.181		

ORE FLOW

Description	%	m²	Width (cm)	Tons	Grade (g/t)	Content (kg)
Recovery		21000	165	93,555	3.2	297.644
Residue				93,555	0.133	12.402
Milled				93,555	3.3	310.045
Mine call factor	88.0%			93,555	3.8	352.324
Less From Surface Sources				0		0.000
Less Decrease in stock pile				0		0.000
Add Increase in stock pile				0		0.000
Total ore tons hoisted				93,555	3.8	352.324
Less Main & sec. dev. to mill	3.6%			3,368	2.1	7.073
Less Reclamation				0		0.000
Stope ore hoisted				90,187	3.8	345.251
Less Discrepancy "Shortfall"	15.5%			14,501	0.0	0
Add Discrepancy "Excess"	0.0%					
Total stope ore measured				75,686	4.6	345.251
Dilution Other sources Stoping	5.0%			4,678		0.000
Dilution	0.0%					
Less Total Dilution				4,678		0.000
Reef only m²		20265				
Total measured stope ore	75.9%		125	71,008	4.9	345.251

Pay Limit Value cmg/t	Grade g/t	Stope Width cm
610	4.86	125

Remarks:

No deviation from Historical modifying factors, volumes based on last Strategic Plan Nov 2005 schedule. WC based on latest financials.

Sources: Beatrix Internal CPR Report. F 2008

Table 4.3

Paylimit Calculations of Beatrix Shaft No 3 North section

Beatrix Underground Operation			North Section		
Resource Pay Limit			Strategic Plan F2008		
Excluding Reclaim Plant and Surface Sources					
Working cost - U/G	Rands	60493936	Include Dev cost		
Tons milled - U/G Sources	Tons	142,574			
Unit working cost	R/t	424	R/m²	R 2,051	
Gold price per kilogram	Rands	135,000	MCF	88.0%	
Gold required to break even	kg	448.103	m²	29500	
Required recovery grade	g/t	3.143			

ORE FLOW

Description	%	m²	Width (cm)	Tons	Grade (g/t)	Content (kg)
Recovery		29500	179	142,574	3.1	448.103
Residue				142,574	0.131	18.671
Milled				142,574	3.3	466.774
Mine call factor	88.0%			142,574	3.7	530.425
Less From Surface Sources				0		0.000
Less Decrease in stock pile				0		0.000
Add Increase in stock pile				0		0.000
Total ore tons hoisted				142,573	3.7	530.425
Less Main & sec. dev. to mill	2.4%			3,422	3.0	10.265
Less Reclamation				0		0.000
Stope ore hoisted				139,152	3.7	520.160
Less Discrepancy "Shortfall"	15.5%			22,099	0.0	0
Add Discrepancy "Excess"	0.0%					
Total stope ore measured				117,053	4.4	520.160
Dilution Other sources Stoping	5.0%			7,129		0.000
Dilution	0.0%					
Less Total Dilution				7,129		0.000
Reef only m²		28468				
Total measured stope ore	77.1%		138	109,924	4.7	520.160

Pay Limit Value cmg/t	Grade g/t	Stope Width cm
650	4.73	138

Remarks:

No deviation from Historical modifying factors, volumes based on last Strategic Plan Nov 2005 schedule. WC based on latest financials.

Sources: Beatrix Internal CPR Report. F 2008

4.4 The Analysis of the Beatrix Plant Cost Model.

The following figure depicts the analysis of Beatrix Gold plant costs in detail and per element. The analysis is shown in terms of rand millions as well as on the rand per ton basis.

Table 4.4

BEATRIX PLANT			
	Measurement	Annual Costs	Cost per Ton
Tons	Tons	2.85	
Employees In Service – Officials	Number of employees	43	
Employees In Service - Union man	Number of employees	101	
		-	
Payroll 1		9.86	3.46
Basic Wages	Rand - Millions	6.76	2.37
Overtime	Rand - Millions	0.53	0.19
Bonus	Rand - Millions	0.47	0.17
Allowances	Rand - Millions	0.75	0.26
Comp Contributions	Rand - Millions	1.35	0.47
Retrenchment	Rand - Millions	0.02	0.01
Payroll 2	Rand - Millions	6.90	2.42
Basic Wages	Rand - Millions	4.05	1.42
Overtime	Rand - Millions	0.56	0.2
Bonus	Rand - Millions	0.02	0.01
Allowances	Rand - Millions	1.06	0.37
Comp Contributions	Rand - Millions	1.13	0.4
Retrenchment	Rand - Millions	0.07	0.03
TOTAL Payroll	Rand - Millions	16.76	5.88
Other Costs	Rand - Millions	3.91	1.37
Stores	Rand - Millions	28.49	10
MOC & Labour Hire	Rand - Millions	5.91	2.07
R&R	Rand - Millions	9.33	3.27
TOTAL Direct Costs	Rand - Millions	64.39	22.59
Direct Cost per Ton	Unit cost	23	
	Rand - Millions		-
Hostels	Rand - Millions	0.69	0.24

Water	Rand - Millions	1.63	0.57
Electricity	Rand - Millions	13.95	4.9
Security	Rand - Millions	3.39	1.19
	Rand - Millions		-
Mine General Overheads	Rand - Millions	5	1.58
	Rand - Millions		-
Human Resources	Rand - Millions	1.20	0.42
Finance	Rand - Millions	1.36	0.48
Technical Services	Rand - Millions	-	-
Insurances	Rand - Millions	0.21	0.07
Environmental Cost	Rand - Millions	0.02	0.01
Gold Fields Protection Services	Rand - Millions	-	-
GFTS	Rand - Millions	0.47	0.16
Information systems	Rand - Millions	0.30	0.1
Corporate Admin	Rand - Millions	0.55	0.19
Sundries	Rand - Millions	0.41	0.3
TOTAL COST - BEATRIX PLANT	Rand - Millions	88.57	31.08
Cost Per Ton	Unit Cost	31.08	

Source: Beatrix Cost Management reports – F2008

4.5 The Analysis of the Oryx Plant Cost Model.

The following figure depicts the analysis of Beatrix Gold plant costs in detail and per element.. The analysis is shown in terms of rand millions as well as on the rand per ton basis.

Table 4.5

ORYX PLANT			
		Annual F2008 - R Millions	Cost per ton
Tons (000)	Tons	689.00	
Employees In Service - PR1	Number of employees	45	
Employees In Service - PR2	Number of employees	33	
Payroll 1	Rand - Millions	7.54	10.95
Basic Wages	Rand - Millions	4.50	6.54
Overtime	Rand - Millions	0.85	1.23
	Rand - Millions	0.00	

Bonus	Rand - Millions	0.28	0.41
Allowances	Rand - Millions	0.68	0.99
Comp Contributions	Rand - Millions	1.19	1.73
Retrenchment	Rand - Millions	0.04	0.06
Other Payroll Charges	Rand - Millions	0	-
Payroll 2	Rand - Millions	**2.36**	**3.42**
Basic Wages	Rand - Millions	1.42	2.06
Overtime	Rand - Millions	0.24	0.35
Bonus	Rand - Millions	0.01	0.02
Allowances	Rand - Millions	0.30	0.43
Comp Contributions	Rand - Millions	0.38	0.56
Retrenchment	Rand - Millions	0	-
Other Payroll Charges	Rand - Millions	0	-
TOTAL Payroll	Rand - Millions	**9.90**	**14.38**
Other Costs	Rand - Millions	0.05	0.07
Stores	Rand - Millions	13.26	19.25
MOC & Labour Hire	Unit cost	3.17	4.61
R&R	Rand - Millions	1.12	1.63
TOTAL Direct Costs	Rand - Millions	**27.51**	**39.93**
Direct Cost per Ton	Unit Cost		
Hostels	Rand - Millions	0.22	0.32
Water	Rand - Millions	0.81	1.18
Electricity	Rand - Millions	4.82	7
Security	Rand - Millions	1.27	1.84
Mine General Overheads	Rand - Millions	**3.0**	**3.7**
Human Resources	Rand - Millions	0.47	0.68
Finance	Rand - Millions	0.12	0.17
Technical Services	Rand - Millions	0	-
Insurances	Rand - Millions	0.04	0.05
Environmental Cost	Rand - Millions	0.13	0.18
Gold Fields Protection Services	Rand - Millions	0	-
GFTS (GFBLA)	Rand - Millions	0.28	0.41
Information systems	Rand - Millions	0.05	0.08
Corporate Admin	Rand - Millions	0.08	0.12
Sundries	Rand - Millions	1.38	2
TOTAL COST - ORYX PLANT	Rand - Millions	37.17	**53.97**
Cost per Ton	Unit Cost	**53.97**	

4.6 Guidelines for the evaluation of the merger between the Beatrix and Oryx plant.

4.6.1 The background of the available infrastructure of Beatrix mine

Gold Fields Beatrix mine is one of the pillars of the company in South African operations. The mine was established in 1980 and grew over a period of time. It started with only one shaft, expanded to two shafts and finally to number 3 shaft. All these shafts are utilising one gold plant known as Beatrix no 1 plant. The merger between the old Gencor mines and Goldfields of South Africa in 1998, made it possible to merge the Oryx mine with Beatrix and to become one entity. Oryx mine was also in possession of its own plant, which is now known as the Oryx plant at the western side of the mine. The depletion in the ore production over time made it possible to optimise the resources to utilise just one plant. The only cost- effective way of optimising the company`s resources is by merging the two gold plants. The merger will ensure that the Oryx mine concentrates on mining only. By so doing, the management of that section of the operation will only plan to grow further.

At Oryx mine, the general mine plan and sequencing has remained unchanged year on year. Modifications to adapt the local structure to improve layouts and efficiencies have been completed in conjunction with mining staff. The geology model and the value distribution from additional development and bore hole drilling has further enhanced the payability of the zone 5 area. There is a substantial increase in total development metres from 69.544 km in the November 2007 life of mine plan to 76.264 km in the current November 2008 plan. This is due to the fact that development layouts had to be adapted due to the new geological structural model and additional access development is now required. An increase in development meters simply means that the mining will still carry on for the next 15 years. Alternative layouts and the duplication of some tunnels to mitigate and offset the impact of smectite and tunnel closure have also resulted in a contribution to additional development. The reef development decreased from 19.256 km

to 18.225 km, mainly due to the increase in raise spacing in zone 5 (southwest of the reverse fault) and zone 28.

Improvements in infrastructure and capital spend over the past year has ensured that the supporting infrastructure is in place to sustain this plan. The production volume planned at this shaft is 12 500 m^2 per month, building up to 15 000 m^2 per month in 2012, a profile that can be sustained until 2015 with the shaft closure scheduled in 2018. The yield at the shaft has improved year on year from 6.6 to 6.9 grams per ton and the gold yield has reduced slightly from 70.831 tons to 69.968 tons, mainly due to depletion. The Oryx plant was also designed to process the Beisa rock which is full of Uranium content. This plant was planned to run four mills, but due to the low feed, the plant is running with two. The tons are not coming out as planned due to rock type and tunnel stability concerns. Transfer ore passes are planned throughout the mine to allow reef to be transported two levels under the reef horizon. The evaluation of the merger between the Oryx plant and the Beatrix plant was based on the detailed cost calculations as reflected in Table 4.4 and Table 4.5 respectively.

4.7 Analysis of the cost calculations

The analysis was also conducted using the working costs of both the Beatrix and Oryx gold plants. It is clear in the calculations in Figure 4.9 and Figure 4.10 that the cost per ton at the Oryx plant is 70% greater than at the Beatrix plant. The primary reason for this anomaly in the unit cost is the combination of lower volumes produced and the impact of higher fixed costs.

The merging of the plants will offer the following benefits:

- The water and electricity account of the total business will reduce by 15%.
- The number of employees in the combined plants will reduce by 30%.
- The knowledge, experience and skills of management will be shared.
- Overheads such as administration services will be centralised.
- The maintenance costs will be reduced by 20%.

- The Oryx plant can be used for processing other metal content such as Uranium.
- The Oryx plant can be sold to a willing buyer at a cost plus.

The following are the main concerns that should be taken into consideration when merging the two plants:

- The morale of the employees, including the affected managers, might be affected by the move.
- The cost of trucking the ore from Oryx mine to the Beatrix plant should be considered and determined in full.
- The capital expenditure to revamp the Beatrix plant to work at its full capacity.

Figure 4.11, depicts the pre-feasibility results of the capital expenditure growth required to expand the Beatrix company in the future. Growing the company can also be a good strategy to reduce cost by distributing overheads across the other sectors of the business unit.

Table 4.6

The planned capital projects at Beatrix mine to increase production output.

Project Name	Date approval required	Capital Estimate (Rm)	Impact on LoM	Status: Concept, Pre-feasibility, Feasibility	Returns at the base gold price		Planned completion date
					NPV at 6% (Rm)	IRR (%)	
Vlakpan Decline (2#)	2007	123.4	10 Years	Pre-feasibility	154	192.7	2019
G-Block Decline (2#)	2007	20.2	9 Years	Pre-feasibility	51	60.8	2016
North Block zone 29 (4#)	2007	31.3	9 Years	Pre-feasibility	217	208.5	2017
18 Level zone 5 (4#)	2007	32.2	7 Years	Pre-feasibility	120	47.8	2017
26 East Decline (3#)	2007	137.5	8 Years	Pre-feasibility	251	30.8	2020

Sources: Gold fields CPR document – F2007

The execution of the above mentioned capital projects as stated in Table 4.6, will ensure that the Beatrix plant can process ore for the next 15 years. As a result, the merging of the two plants will be sustainable and can yield return on investment for the shareholders.

4.8 Summary and conclusions

A successful restructuring requires a great deal of sensitivity. In the mining sector, all restructuring plans need to be structured and communicated carefully to all stakeholders. The process of restructuring a sizable organisation like Beatrix mine requires a high level analysis of the infrastructure, systems and people. The infrastructure of Beatrix mine is worth a net present value of over R6.5 billion rand at R 200 000 gold price. This value simply reflects the nature of the busi-

ness to be restructured. As it was mentioned in chapter one, the employees of Beatrix mine total 10700 over and therefore, it clearly shows the magnitude of resources the company possesses. The geological model also reflects the nature of the reef as well as the amount of remaining ore to be mined and processed at the Beatrix plant.

Furthermore, the merging of the plants, if done properly, can be of benefit to all stakeholders. More benefits can be associated with the growth of the company as well as the cost reduction in the long term. In the process of merging the plants, there will also be people-emotional ramifications which the leadership of the organization might encounter. Some employees will end up losing jobs which will affect the morale of the remaining employees.

CHAPTER 5

EMOTIONS OF EMPLOYEES WITH REGARD TO THE RIGHTSIZING EXERCISE: EMPERICAL SURVEY.

5.1 Introduction

In the process of re engineering or restructuring, it is very unfortunate that some of the employees will lose their jobs. The employees affected by the re- engineering process include the senior managers as well as some professionals because their jobs become redundant. As part of this research study, information was gathered from different stakeholders within the organisation to determine their perception of the rightsizing exercise at Beatrix mine. Questionnaires were handed out to 15 participants inside the Beatrix mine. All targeted employees responding to the questionnaires represent different categories of workers in the organisation.

The population of the research survey was composed of the following people:

- Three (3) representatives of National union of Mineworkers.
- One (1) representative of the UASA trade Union.
- Solidarity Trade union (3).
- Two (2) senior management employees.
- One plant manager.
- Three (3) unit (shaft managers).
- Two lower level employees from both plants.

5.2 The nature of the questions

The questionnaire was designed in such a way that the participants could mark with an (X) if he/ she strongly agrees, agrees, disagrees strongly/ disagrees and / or do not know. Verbal interviews also took place to clarify some misunderstandings. Although the information supplied by the participants has been treated in the strictest confidentiality, everyone was encouraged to disclose

the information to the best of his or her knowledge and ability. All questions raised in the questionnaire were categorized as follows:

- The labour cost structure at Beatrix mine.
- Economies of scale.
- The impact of trade unions during the restructuring process.
- The impact of health and safety initiatives at Beatrix mine.
- The impact of retrenchments within the business during the rightsizing exercise.
- The influence of government and authorities on Beatrix mine.
- Growth in the organisation.

The detailed questionnaire can be found in Appendix A of the attachments.

5.3 The analysis of the data

5.3.1 Labour cost structure at the Beatrix mine.

In the process of analyzing the data, the national unions of mineworkers strongly disagree that the mine management should reduce the labour costs. This argument can be associated with the general stance of trade unions in South Africa. The unit managers as well as the senior managers strongly agree that it is necessary to reduce labour cost in the business. The argument was that for the business to operate effectively and efficiently, the labour numbers must reduce. The same applies to the questions associated with the more than planned employees in the payroll system. It was evident that management of Beatrix concur or strongly agree with the sentiment. Everyone, including the NUM trade union agree that technology is the way to go and all further agree that technology can make the work much easier in the future. The skills shortage on the mine has been identified as a serious problem by all respondents. The skills gap was identified in the technical and engineering departments. Although contractors are seen to be the additional employees in the mine, trade unions believe that they do not add value. Surprisingly, some of the middle management strongly disag-

ree that contractors are adding value to the bottom earnings of the company. The senior management strongly believes that contractors do add value in the operation.

5.3.2 Economies of scale

All respondents to the questions of economies of scale do agree that the mine requires a significant number of employees to do the work. On the other hand, they all agree that it is high time that technology should be implemented in the mine in an attempt to reduce costs. Trade unions do not completely understand the terminology of economies of scale, but they tend to agree that buying the materials in bulk might reduce the prices of goods. Therefore, it will be much easier to reduce cost. The mine management strongly agrees that the fixed costs such as labour costs are high and therefore can destroy the life of mine easily. However, the trade unions strongly agree that the middle management of Beatrix mine is too heavy and need to be reduced.

5.3.3 The impact of trade unions in business reengineering.

Trade unions, more especially NUM and Solidarity, strongly disagree with the process of re- engineering and restructuring. During the interview process, the trade unions disagree that production losses in the business is associated with the demands and actions of the unions. Unions strongly agree that the leadership of the business should provide guidance to employees with regard to production, safety and costs. However, senior management strongly agrees that when restructuring an organisation, trade unions should form part of process. This should either be by means of consultation or full involvement.

5.3.4 The impact of health and safety in the overall cost of the mine

All respondents strongly agree that health and safety can cost the business a significant amount of money but at the end of the day, it is very important. Trade unions strongly disagree that the senior management of Beatrix mine do care about the safety of the employees. Trade unions are of the view that the leadership of Beatrix mine puts production first on the priority list. The senior manage-

ment of Beatrix, however, agrees that safety comes first and they are doing all in their power to ensure that the lives of all employees are not exposed to safety hazards. It costs the business a significant amount of money on safety, but management thinks that it is definitely money well spent.

5.3.5 The impact of retrenchment on employees in the organisation

Although every respondent strongly agrees that retrenchments affect the morale of employees, trade unions also strongly believe that employees should be reduced as the life of mine production profile reduces. The leadership of the organisation strongly agrees that retrenchment should affect everyone in the operation. However, the mistrust between management and the trade unions leads to the perception that only employees affected by the retrenchment exercise will be the unskilled labourers. Unions strongly agree that the impact of retrenchments in South African household is immense

5.3.6 The influence of government and authorities in the Beatrix mine

Trade unions of all labour representation, namely, NUM, UASA and Solidarity strongly agree that the Beatrix mine has a social responsibility towards the employees and society in which the business is operating. These groups of people strongly agree that the government has a vital role in enforcing relevant regulations in companies such as Beatrix. However, management sees the enforcement by the regulators as an expensive process to maintain.

5.3.7 Growing the organisation

The leadership of the organisation, including the shaft managers, strongly believe and agree that capital investments lead to the growth of a company. The leadership of trade unions agrees fully that any business, which is in a growth stage, can sustain their net profits in future. However, the trade unions seem not to agree with the expansion project of the organisation. Trade unions are of the opinion that new technology will reduce the number of available jobs. During the interview process, the majority of participants agree that the company must grow on an annual basis in such a way that jobs are preserved in the organisation.

5.4 The strategic objectives of the Beatrix mine.

Figure 5.1 depicts the strategic objectives of Beatrix mine for the life of the operation. The main objectives are specifically to achieve short term operational results, growing the operation for sustainability as well as securing the future of all stakeholders within the organisation. The majority of the participants, including the trade unions, are positive that these strategic thrusts can sustain the company to the future. Growing the organisation can only be achieved by implementing long term capital projects and allocating funds accordingly. Some of the long term projects are linked to the implementation of the new technology in the business. Figure 5.2 shows the technology plan at Beatrix mine. Although the trade unions are not in favour of the new technology, management would like to go ahead with the implementation of the projects. The new technology can assist the company with further growth if implemented carefully with proper financial valuations and pre-feasibility assessments.

Table 5.1

Strategic Objectives

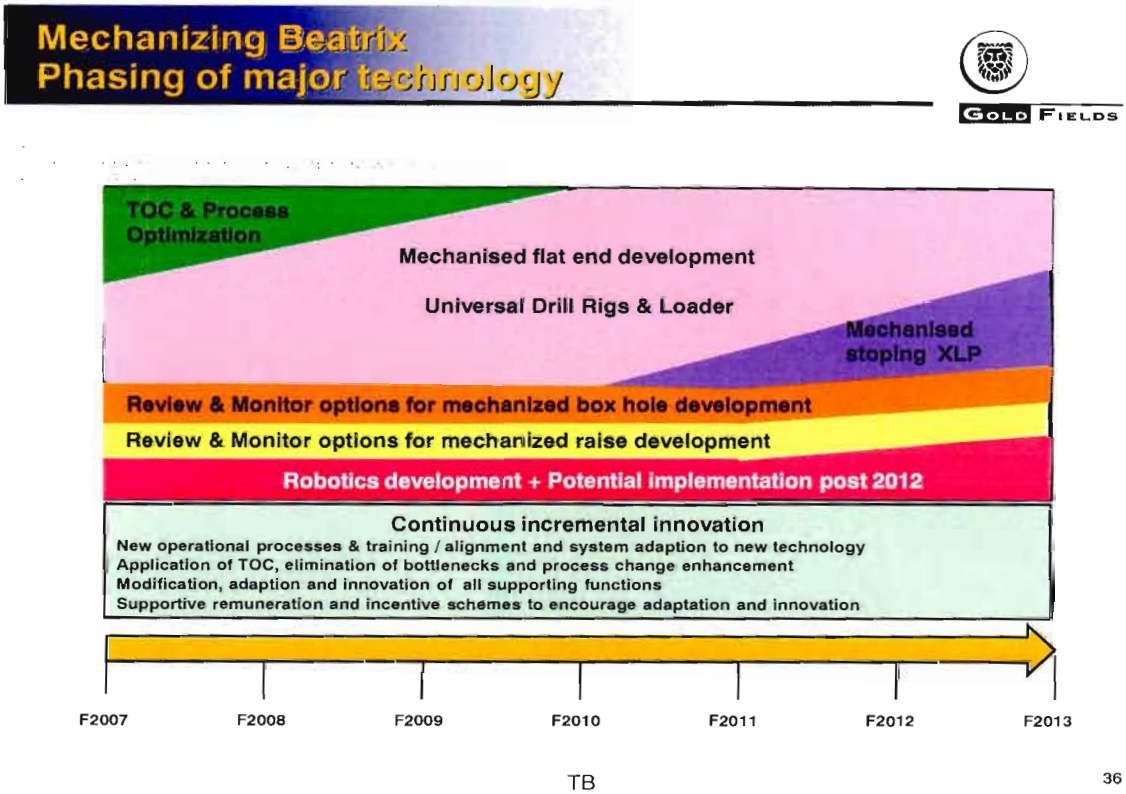
GOLD FIELDS

	Unit	Description/Quantum	Risks	Opportunities
Operational excellence	Beatrix All #	• Resolution of conflict & alignment of all stakeholders. People who are motivated. • Development volumes & mechanization • Sustained quality mining volumes • Return to positive cash flow on NCE basis	Production underperformance leading to limited mining flexibility and economic stress	Major risk reduction associated with achieving consistent production volumes and increased profitability. Morale Regeneration
Growing Gold Fields	Beatrix All #	•Maximize resource base conversion • Deliver on incremental projects (G Block, Vlakpan, 4# mining area diversification • Regional resources decision, limited Uranium options	Increased capital expenditure, affordability associated with normal mining risk - reward	Increased reserve base associated with socio economic benefits for all stakeholders, on sell opportunities
Securing our future	Beatrix All #	• Excellence in SHEC performance • Total mine to be economically viable • Mining charter & SLP deliver •Transformation & Diversity management	Mine closure / negative economic impacts of non compliance	Enhanced employee and community commitment, opportunities and shareholder value add

18

Source : Internal Strategic plans F2009

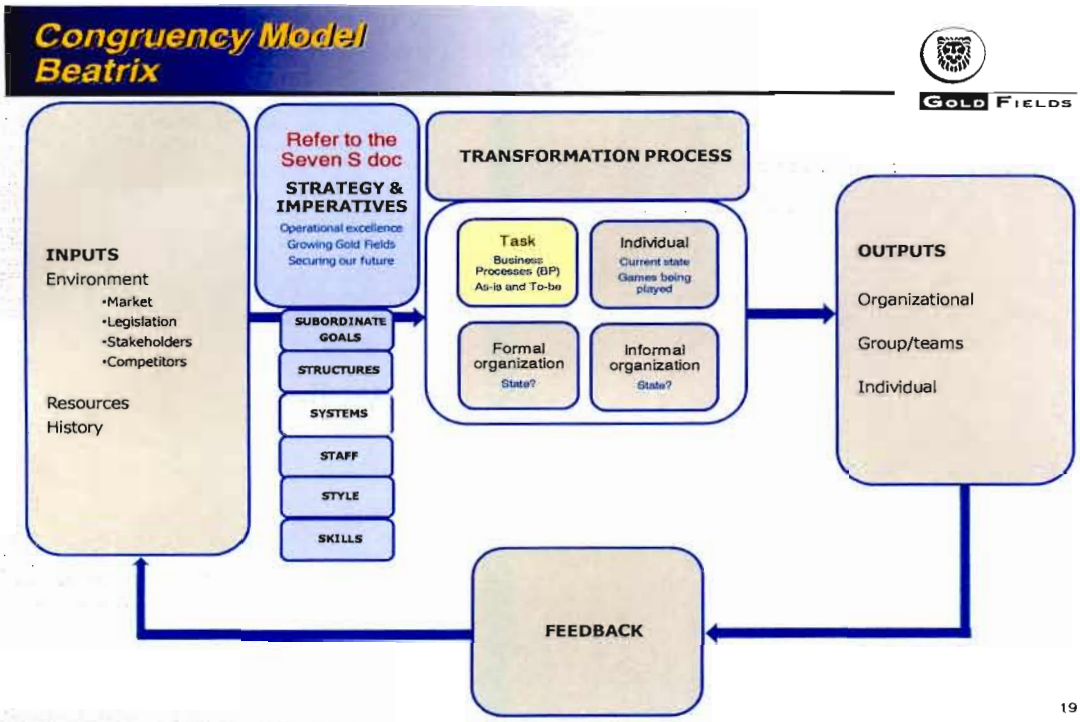
Figure 5.1



Source: Internal Beatrix Strategic plans F2009

The following figure 5.3 reflects the congruency model which can be used when restructuring an organisation like Beatrix mine. The model requires that there must be inputs, transformational processes, output and the feedback during the restructuring strategy. The inputs include amoung others, the resources, environment and the history of the organisation. The transformational process in the congruency model is referring to the manner in which the rightsizing exercise can be conducted and concluded. Management must ensure that the Porter`s 7`s model is also used to achieve the objectives. During the interview process, trade unions at Beatrix were aware that it is necessary to use the congruency model to achieve the objectives set on the strategy. The outputs in the congruency model represent the organisation, group or individuals which were affected by the rightsizing exercise. The majority of respondents agree that employees require the feedback on how the rightsizing exercise can be conducted.

Figure 5.2



Source: Internal Beatrix Strategic plans F2009

Figure 5.4 shows the main trajectories of Beatrix strategic plans. These trajectories are the main focus areas of delivery in the Beatrix mine. Employees are expected by the leadership to achieve these operational targets in an attempt to grow the operation for the future. The majority of respondents during the interview process, were in favour of these trajectories and all agreed that they are achievable.

Table 5.2

Strategic Plan Trajectories

GOLD FIELDS

	F2009 Outlook	F2010	F2011	F2012	F2013	F2014
Development Total	38439	43757	36808	33816	33440	33263
On Reef Development	7917	9271	7793	7137	7658	9707
Off Reef Development	25282	26402	23078	22324	21987	21151
Revenue at ZAR 200,000/kg	3442	2886	3285	3624	4129	4685
Total Real Working Cost	2046	2164	2272	2418	2598	2816
NCE cost (R ' Mil)	2670	2817	2922	3068	3246	3450
Contribution (After NCE)	772	68	362	556	883	1234
Total Real Capital (R ' Mil)	624	653	650	650	648	634
NCE (R/kg)	196,319	195,268	195,744	204,864	209,261	215,664
TEC (excl contractors)	10688	9922	9174	8651	8278	8037 46

Source: Beatrix Internal Strategic plans F2008

5.5 Summary and conclusions

The process of rightsizing an organisation such as Beatrix mine requires a significant amount of emotional intelligence in all participating stakeholders. During the interview process, the participants gave the following summarized feedback:

- The majority of participants fully agree that the employment of excessive labour costs in Beatrix organisation can result in the company paying more on labour costs than other cost elements. All participants agree that the overall reduction in labor costs is regarded as an acceptable norm.

- The production systems which are linked to new technology are streamlined in order to achieve the benefits of economies of scale principles. Eighty-five percent of the participants strongly agree that the implementation of new technology in the organisation reduces costs.
- All participants strongly agree that trade unions can play a significant role in restructuring the organisation.
- Participants also feel that health and safety programs can lead to a significant amount of losses if the systems are not implemented properly. On the same note, it is clear that Beatrix mine as company has adopted the principle of no production if safety is not up to standard.
- The majority of respondents feel that government involvement in the daily operation of the business is costing the organisation a significant amount of money. The leadership of the organisation strongly agrees that government authorities are there to monitor the compliance to charter requirements.
- One hundred percent of the respondants felt during the interviews that a company such as Beatrix mine, must invest in capital expenditure in an attempt to secure the future of every individual in the company. Participants felt that growth in the business is a necessity.

After the interviewing process, every participant felt that it is necessary to re- position Beatrix operations by performing the rightsizing exercise in order to reduce costs. The restructuring will in the long run, adjust the paylimits of the organisation and as a result, the growth projects can be achieved with great success.

CHAPTER 6

CONCLUSIONS, RECOMMENDATIONS AND SUMMARY

6.1 Introduction

The primary purpose of this management report was to identify the opportunities to reduce the production costs and to optimise the profits of Beatrix mine. The secondary objective of this report was to establish whether some of the fixed assets of the organisation that are not utilised to their full capacity, can be merged in an attempt to reduce wastage across the operations.

6.2 Conclusions

The report has revealed clearly that there are opportunities available to reduce costs in the organisation. The factual numbers compiled in the report show that some sections within the organisation can be combined because they are not used to their full capacity. The gold plants of Goldfields Beatrix mine are the examples of many opportunities within Beatrix mine that should merge with an immediate effect, provided the due diligence process has been followed. If management of Beatrix Mine do not take advantage of these opportunities, the future of the company will be at risk because the unit cost of the gold mining companies are forever increasing and thereby the paylimits will reach the point of no existence. The research also reveals that growth in the company is an absolute requirement to the 10 700 employees in this organisation.

6.3 Recommendations

It has been acknowledged in the overview of this script that the unit costs the entire gold mining industry are escalating in an alarming rate. Moreover, the production is decreasing due to depletion year-on-year and the fixed assets of these companies are underutilised due to insufficient feed. Beatrix mine is also not immune to these global challenges. The feedback from employees, management and trade unions as outlined in Chapter 5 of the empirical research, indicates clearly that if management of Beatrix mine do not think differently in these tough times, they will fail every employee in the organisation. The following recommen-

dations are therefore put forward to the management of Beatrix mine and its stakeholders:

- The Beatrix gold plants should be merged in an attempt to reduce unit costs. Prior to the merging of the Beatrix plants, a thorough due diligence process should be conducted in a very careful manner to avoid unnecessary misunderstanding among the employees. A proper consultation process with the trade unions and the affected employees should be done diligently.
- New technology in the Beatrix mine should be considered positively as it can add value in the growing of goldfields Beatrix mine. New technology in the form of mechanisation and automation plays a very critical role in achieving the efficiencies of the company. Although the technology does not come very cheap, it has been proven in many industries that new technology can add value in the future of any company.
- Management of the Beatrix mine should invest in capital expansions while the gold price is still high. This initiative should focus on positioning the business for the future growth.
- It is important that management must engage extensively with the trade unions leadership in an attempt to mend the current fragile relationship. During the interview process, it was clear that the union leadership does not trust the senior management of Beatrix management.
- In the process of rightsizing the organisation, management must ensure that the morale of all employees remain high so that they can still produce as per the required targets. When conducting the rightsizing exercise, management must ensure that key skills and experience are retained within the organisation.

6.4 Summary

The main objective of this script was to evaluate the cost reductions strategies in Beatrix mine by rightsizing some business units that do not add value in the organisation. The script has managed to identify the areas which can be exposed to the rightsizing exercise such as the gold processing plants of Beatrix mine. It was clear in the evaluation process that the unit cost to operate the Oryx plant is way above the norm. The merging of the two plants viz Beatrix and Oryx plants, will be the greatest achievement by management to bring the operating cost down to an acceptable level as required by the operational plans.

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GOLD FIELDS

BEATRIX MINE

MBA STUDY - RESEARCH QUESTIONNAIRE

As part of an MBA research study, qualitative information is gathered which will be used to determine whether it will be necessary to merge some of our Departments and sections in Beatrix mine in an attempt to keep unit costs as low as possible. Your contribution to this survey will also provide an indication to Beatrix mine's management and its stakeholders of issues to consider in business re engineering process. Your response will be treated in a confidential manner.

NAME:	
AGE:	
DESIGNATION:	
GRADE:	
WORKING AREA:	

In responding to this Questionnaire, please indicate by an (X) whether you **Strongly Agree; Agree, Disagree, Strongly Disagree and/ or Do not know** with the statement about your business.

APPENDIX A.

1. **Beatrix Mine Labour Costs**

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1.1. Do you believe that it is necessary for Beatrix mine to reduce labour costs?					
1.2. Do you believe that Beatrix shafts including Oryx, have excess employees in the system?					
1.3. Do you believe that the implementation of new technology can add value in the company?					
1.4. At Beatrix mine, there is a skill shortage in the engineering and technical departments.					
1.5. In your opinion, do you think contractors at Beatrix mine are adding value?					

2. **Economies of scale.**

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
2.1. Do you believe that Beatrix mine can produce more with fewer employees?					

APPENDIX A.

2.2. Do you believe that higher unit cost reduces the life of the mine?					
2.3. Higher fixed costs destroy the margins of the company. What is your view on this statement?					
2.4. In your opinion, do you think the middle and senior management structure is too heavy?					

3. The impact of Trade Unions in Business re engineering

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
3.1. Do you believe that trade unions activities can make a positive difference in production and costs?					
3.2.Do you believe that trade unions activities can make a negative difference in production and costs?					
3.3.Do you believe that production losses at Beatrix are attributed to trade unions actions?					

APPENDIX A.

3.4. Do you think trade unions can play a pivotal role in the re engineering of Beatrix mine.					
3.5. In your view, do you think trade unions have more voice in the company than management?					

4. Safety and Health at Beatrix mine

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
4.1. Do you believe that safety of employees is regarded very high in the organisation?					
4.2. Do you believe that there is a strong link between safe production and profitability?					
4.3. Do you believe that management of Beatrix mine regard safety high on the priority list?					
4.4. In your mind, do you think management concentrates on production than safety?					
4.5. Do you think employees are aware that Beatrix spends a lot of money on safety ?					

APPENDIX A.

5. The impact of retrenchment on the employees within Beatrix mine.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
5.1. Do you believe that employees should be reduced as production output decreases?					
5.2. Do you believe that retrenchment exercises can affect the morale of employees?					
5.3. Do you believe that new technology can contribute to the layoffs of employees?					
5.4. Do you think that retrenchments affects more unskilled labour than the skilled employees?					
5.5. In your opinion, do you think retrenchments affect the South African households?					

6. The influence of government and authorities in Beatrix mine

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
6.1. Does government have a strong influence in the smooth running of Beatrix mine?					

APPENDIX A.

6.2. Government involvement in Beatrix mine have a negative impact in the net profits?					
6.3. Do you think Beatrix requires the help of authorities to meet its objectives?					
6.4. Authorities are more of a barrier in Beatrix company`s success?					
6.5. In your opinion, do you think South African labour laws are rigid?					

7. **Growing the operation.**

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
7.1. Do you believe that the investment in capital have in impact an the growth of the company?					
7.2. Growth in the company enhances the chances of the company to sustain its business in the future? What is your view on this?					
7.3. Do you believe that new technology can help make speed up the growth prospects in the company?					

APPENDIX A.