EXCELLENCE & CLIENT FOCUS

THROUGH PERSONNEL RESTRUCTURING OF

A SOUTH AFRICAN GOLD PLANT

by

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To those who had to suffer, I salute you!
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1 CHAPTER ONE: WHY CHANGE?

"When men are following veins of gold and silver, groping with their picks in the bowels of the earth, what fumes are emitted from the pits of Scapte Hyle! What malignant breath is exhaled by gold mines! How it acts upon men's features and complexions!"

- Lucretius, On the nature of the universe

1.1 INTRODUCTION

The South African gold mining industry has in the last decade increasingly come under pressure. The radical drop in the dollar price of gold, the lowest it has been in 16 years, has depressed revenues to the point where drastic action is needed.

Furthermore, costs have been escalating. Where the South African Industry was the international leader in low cost production ten years ago, it has now become the most expensive.

The following statement by the Chamber of Mines President, Bobby Godsell (1998: Godsell), underlines the problem:

"The gold mining industry world-wide is in a state of crisis, with the price of its product at a 16-year low. Few industries would not be in crisis if they were receiving 1982 prices for their product.

In South Africa, two other features contribute to an even more acute crisis. Over the last decade South Africa has moved from being the lowest cost major gold producer to being the highest. Secondly, many South African gold companies are facing physical depletion of their ore reserves. Many companies have now been in operation for more than half a century. Eventually every mine must come to the end of its mineable reserves.

Members of the Chamber are deeply committed to meeting the challenges of low prices, high costs and ore depletion constructively and effectively. To this end the Chamber proposed a productivity-linked wage agreement last year. Since that
agreement we have seen a further $30-drop in the gold price, with a third of Chamber member gold mines making losses, aggregating about R12-million a week. The Chamber shares the National Union of Mineworkers' concerns about job losses. Retrenchments are the consequences of the industry's problems - not their causes. Without addressing the causes, a moratorium on retrenchments will, in our view, achieve nothing, and possibly create expectations which would not be fulfilled. There is only one way to reduce job losses and this is to find ways to return companies to profitability and to make them cost-competitive with producers of gold elsewhere in the world.

Much as it understands the National Union of Mineworkers' anger, the industry will not find a way forward through marches, protests or strikes. The combined wisdom, and then the combined effort of management, labour and government will be required to find a way forward for the South African gold industry."

Due to these pressures on the industry, it has become very apparent that the cost of gold production in South Africa needs to be reduced and that productivity must be drastically increased.

It is accepted by all Mining Houses, through the Chamber of Mines, that personnel needs to be decreased to achieve the above mentioned goal and that personnel restructuring and right sizing are necessary. It is however doubtful whether government and its power base the National Union of Mineworkers, will accept this to be the only way to save the fledging South African gold mining industry.

This research will concentrate on increasing the efficiency of the gold extraction plant of a South African gold mine by considering an option for restructuring and right sizing the supervisory personnel thereof, inside a single business unit. Theory and practice will be combined to establish business functions and personnel will be structured around these.
1.2 BACKGROUND INFORMATION

The study will be focused on a large Gold producer in the stable of a new company that recently came into being through a merger of gold assets of two large mining houses. This merger led to major restructuring in the new company head office, making it lean and efficient.

This personnel restructuring and down sizing spilled down to the subsidiaries, requiring them to shed jobs through attrition, early retirement, voluntary retrenchment and forced retrenchment. These labour reductions were drastically needed, “to stop the bleeding”, as these companies had experienced major financial losses in the previous financial periods.

This led to a management directive that required an across the board personnel reduction of between thirty and fifty percent, vertically, mostly in the non-mining departments.

Another modification that came as a result of the changes in the company, was the restructuring of the extraction plant into a single business unit. This was done solely by closing the dual reporting line of the engineering maintenance department, that formerly reported to the Engineering Manager, to now report to the Metallurgical Manager (Figure 1).

This resulted in making the Metallurgical Manager responsible for all functions within the plant. However, the business functionalities, necessary for the proper operation of a business unit, were not re-examined and it left the plant with a lopsided and top-heavy, bureaucratic organisational structure.

This is a golden opportunity to restructure and right size the metallurgical and engineering supervisory personnel of the plant and to create an environment conducive
to a culture of excellence, as defined by Peters and Waterman (1982:13), and client focus, in the business unit.

Restructuring can be done by identifying the business and operational functions necessary to operate the business unit and structuring the personnel around these. This will eliminate the structuring around geographical areas or reporting lines, which leads to duplication and sometimes responsibility disputes. This could lead to higher productivity, effectiveness, and lower costs, efficiency.

The study will thus propose a new supervisory labour structure for the metallurgical plant, taking into account the functions needed inside the business unit.

The new structure is then to be "sold" to the participants, not as a structure to cope with down-sizing, but as the solution to the problem, that which will return the business to
profitability and normal operations. The negative perceptions that is associated with the retrenchment process, must be altered to a positive perception of "change for the better of all".

1.3 PROBLEM DEFINITION

The following Problem definition is proposed:

Problem definition:

This research is done to make a proposal as to creating an environment conducive to:

% Achieving excellence; and
% Adding value for the clients

by designing an effective and efficient Personnel Structure for the supervisory personnel of the extraction plant, that:

% clearly defines and supports the business unit's functions and needs; and
% provides the best possible service to all clients.

1.3.1 Definition of concepts

The concepts that are used in the problem definition needs to be defined.

1.3.1.1 Excellence

Peters and Waterman (1982:13) identified eight attributes that make a company excellent. These eight attributes and the simple scheme for creating
excellence, proposed by Peters and Austin (Peters & Austin, 1987:5), are discussed in detail in Chapter 2.

1.3.1.2 Adding Value

The Measurement of any project or action, is in the value that it adds to the product, or to the Customer, and not whether it seems to be the right thing to do, or that it's the present trend. The concept will be dealt with fully in Chapter 2.

1.3.1.3 Effectiveness

This concept implies the achieving of set goals (Kroon, 1990:7). Thus the structure would be effective if it manages each function of the business unit so as to achieve the goals as formulated in the Vision and Mission statements of the business unit.

1.3.1.4 Efficiency

This implies accomplishing the task successfully, at the lowest possible cost (Kroon, 1990:7). Thus the structure would be deemed efficient if it minimises cost, whilst still being effective. This would mean that efficiency implies effectiveness to a set standard or specification, including low costs.

1.4 RESEARCH OBJECTIVES

The aim of this research is therefore to create an environment conducive to a culture of excellence, as defined by Peters and Waterman (1982), on the plant, that adds value for its clients. This will be done by designing a new personnel structure for the supervisory personnel of the plant, aligned along the business needs of the business unit.
1.4.1 Methodology

*Vision & Mission defines Strategy defines Structure defines Culture*

Peters and Waterman (1982:9) originally defined the McKinsey 7-S framework for concepts that had to be incorporated in the organisation function of any business (Figure 2).

![Figure 2: McKinsey's 7-S Framework](image)

Source: Peters & Waterman (1982)

From this model three concepts, **strategy**, **structure** and **shared values** (i.e. culture) were taken and used to define the path for the research. This was to be done within the framework of the Vision for the future of the company and the plant and always keeping in mind the overall company strategy of low cost production.
The following study objectives were identified (See Figure 3):

**Define vision, excellence & adding value**

**Lay out the strategy:**
- Identify the clients;

**Develop the structure:**
- Translate these functions into jobs;
- Design an appropriate structure; and

**Check the culture**
- Check whether the structure is conducive to a culture of excellence and adding value.

![Figure 3: Research Objectives](image-url)

Source: Adapted from Peters & Waterman (1982)
1.5 SCOPE OF THE STUDY

A number of decisions were made about the scope of this study:

- It will only include personnel and/or functions reporting to the present Metallurgical Manager;
- Only jobs with a Paterson grading of C4 and higher will be considered;
- Artisans are excluded as they are not deemed to be supervisory personnel;
- and
- It will not attempt to produce extensive and complete job descriptions and job specifications for each position. It will only demarcate the functions and jobs necessary for the effective and efficient operation of the business unit.

1.6 DEPLOYMENT OF THE STUDY AND DEMARCATION OF CHAPTERS

% Chapter 1: Why Change?

This chapter introduces the background information, explaining the reasons for the research. It also defines the problem definition, sets the Scope of the research and Demarcates the Chapters.

% Chapter 2: Visions of the future

This chapter discusses the general theoretical aspects that precedes the thinking in the study. The cultural environment and world view that will influence the thought and development process are defined. This is reflected as Visions of the Future. They form the basis from which the study is done.
The chapter discusses Change as a concept, Vision, Excellence and Adding Value for customers.

**Chapter 3: The Tools for Restructuring**

This chapter contains the Literature Review that was done to find the theoretical tools and concepts that will be used in the study. Horsfall's simple model of a manufacturing industry and the Gold plant's position there in, as well as Porter's value chain model and business functions are discussed. Organisational Structure and Architecture and its importance to the study will also be discussed and will be covered under the headings of:

- The basic principles;
- Network organisations; and
- Other important points

**Chapter 4: Research and design**

This chapter contains the application of the theory. It covers the identification of the clients and the defining of business functions through the use of:

- Horsfall's (1982:6) simple model of a manufacturing process; and
- Porter's Value Chain Model (1982).

These functionalities will then be translated into jobs and the structure will be designed.

**Chapter 5: Findings and Recommendations**

This chapter discusses the findings of the research and makes recommendations as to the application thereof. It checks whether the structure is conducive to a culture of Excellence and whether it is adding
value for the client. It will furthermore make recommendations as to implementation of the new structure, the proposed Vision and Mission for the plant, self-organised-work-teams (SOWT's) and a possible bonus scheme.

## Chapter 6: Summary and Conclusion

This chapter summarises and concludes the research.

### 1.7 CONCLUSION

The dire position of the mining industry, as outlined by the President of the Chamber of Mines, is forcing the industry to take a hard look at the way that they do business. The business environment and the mining industry in particular, is feeling the pinch of the realities in a changing South Africa and an ever-changing competitive World Market.

This Chapter supplies the background information as to the need for the research, prompted by the restructuring needs of the new business environment. It also defines the scope of the research, the methodology used and demarcates the chapters.
2 CHAPTER TWO: VISIONS OF THE FUTURE

"The next century will not prove who was right and who was wrong, but who is left."
- Anon

This chapter discusses the general theoretical aspects that precede the thinking in the study. The environment in which the thinking is done and a vision of the future are defined. This forms the foundation of the study.

2.1 CHANGE AS A CONCEPT

The only certainty, is change
- Anon

Clem Sunter in his book The new century (1992:4), quotes figures on the disappearance of companies, through time, off the list of the top 100 companies in the United States. Of the top 100 in 1956 in America, only 29 were still there in 1992. Outside the United States, of those who were on top in 1957, only 27 are left. This is a sign of the devastation of change and what happens when it is ignored and if the company cannot adapt to the changing times.

Thus big, financially strong companies, cannot rest on their laurels and believe that they are "the untouchables". They have to look proactively to the future and ask "How will it influence me, and where do I want to be then?"

When he was asked what his company would look like in the next century, Sunter goes on to say that, he would be very worried if he knew, as it would be an indication of stagnation, the fatal disease of large companies. "It is much better to have the dynamic tension of the nursery than the deep tranquillity of the graveyard" (Sunter, 1992:5).
Thus, change, whether political, economical, social, technological or any other form thereof, waits for no man nor company. It is part of our daily lives and influences it continually, consciously or subconsciously. It forces out old norms and ways and replaces it with a new set. Not everybody copes with this evolution with the same amount of ease. If care is not taken and the process not monitored, the only way to eventually adapt to the new ways would be through revolution.

It is thus necessary for companies to reconsider what they do and what they are. They need to restructure themselves for the new era, as nothing is the same any more. It is no longer "business as usual".

Furthermore, change should also not be a once off, "forever", exercise. It should be the beginning of the process of continuous improvement, perpetual adaptation, to be the market leader continually and not to become the market follower.

2.1.1 New management thinking and the Third Wave

Through the ages class differentiation was determined by royalty and land owners vs. the workers, during the feudal times, and later by company owners and/or managers vs. labour in the industrial era. This has been the cause for much strife and revolt, from the Magna Carta, through the French Revolution, the rise of Communism and the power of the labour unions and maybe beyond. ¹

Alvin Toffler defines the present philosophical environment in which we find ourselves, as the "Third wave" of change, the post-industrial era that challenges all previous thinking and structures of the industrial age. He defined these terms in the early eighties to explain the new era and the specific needs that it brings. The "First wave"

¹ It is however interesting to note that the manager and owner have been separated through the advent of the stock exchange. In many instances, management has become as much a hired hand as the cleaner in the office. This has contributed to the feeling that all people in the organisation are equal and no one has more rights than others.
would be the agricultural era, when existence was sustained mainly by farming, and the "Second wave" the industrial age with the mechanisation that it brought (Toffler, 1980).

During the first wave, management's function was simple and focused on production and survival. The second wave brought management, as we know it, to the fore. Management was characterised by autocracy, bureaucracy, hierarchical structures, standardisation and a search for order, security and stability (Boessenkool & Kruger, 1992). This led to a rigid materialistic society that functioned around and depended upon, the workplace (Toffler 1980).

The Third wave, the present era we live in, with the rapid changes in technology, the increase in competition and the changing perception of the environment, led Toffler to state that organisations will have to become multipurpose entities. They can no longer see themselves only as economic entities, but will have to get involved in the complete spectrum of activities that the individual is exposed to, in the workplace and in the society as a whole (Boessenkool & Kruger, 1992).

Seen in context of the previous section on change, it is apparent that companies have to strive for flexibility, to be light on their feet, and to be able to adapt to change with ease, not once, but continually. These characteristics are not to be found in Second Wave organisations and the need for a new way of doing things is clear.

This leads to defining the third wave company with its unique characteristics, contrasted against that of the second wave company. The following table (Table 1), quoted by Kruger and Coetzee (1994), lists a number of characteristics and highlights the contrast in approach that exists between second and third wave companies in these.

These characteristics are to be kept in mind when the new Vision is to be formulated and the new structure developed.
Table 1: Contrasting Management Paradigms

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Second Wave organisations</th>
<th>Third Wave organisations</th>
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<tbody>
<tr>
<td>Organisation</td>
<td>Hierarchy</td>
<td>Network</td>
</tr>
<tr>
<td>Output</td>
<td>Market share</td>
<td>Market creation</td>
</tr>
<tr>
<td>Focus</td>
<td>Institution</td>
<td>Individual</td>
</tr>
<tr>
<td>Style</td>
<td>Structured</td>
<td>Flexible</td>
</tr>
<tr>
<td>Source of Strength</td>
<td>Stability</td>
<td>Change</td>
</tr>
<tr>
<td>Structure</td>
<td>Self-sufficiency</td>
<td>Interdependencies</td>
</tr>
<tr>
<td>Culture</td>
<td>Tradition</td>
<td>Genetic code</td>
</tr>
<tr>
<td>Mission</td>
<td>Goals/ Strategic Plans</td>
<td>Identify/Directions/Values</td>
</tr>
<tr>
<td>Leadership</td>
<td>Dogmatic</td>
<td>Inspirational</td>
</tr>
<tr>
<td>Quality</td>
<td>Affordable best</td>
<td>No compromise</td>
</tr>
<tr>
<td>Expectations</td>
<td>Security</td>
<td>Personal growth</td>
</tr>
<tr>
<td>Status</td>
<td>Title &amp; Rank</td>
<td>Making a difference</td>
</tr>
<tr>
<td>Resources</td>
<td>Cash</td>
<td>Information</td>
</tr>
<tr>
<td>Advantage</td>
<td>Better sameness</td>
<td>Meaningful difference</td>
</tr>
<tr>
<td>Motivation</td>
<td>To Complete</td>
<td>To build</td>
</tr>
</tbody>
</table>

Source: Sculley, as quoted by Kruger & Coetzee (1994)

2.1.2 The Changing nature of work

Looking at the statement that the third wave environment is rife with rapid changes in technology, it is all the more apparent with the advent of information technology (IT) in the workplace. Ten years ago information technology and personal computers (PC’s) were something that a select few had access to, or needed for their daily task. Now every worker is exposed to technology and it is required of him to have at least a working knowledge thereof.

It is possible that information technology can be the catalyst for change in the company (Callon, 1996:193). With the incorporation of Supervisory Control and Data Acquisition
(SCADA) Systems, Local Area Networks (LAN's) and Client Server Technology on the plant, it has the capacity to reduce the levels of supervision and concentrate the input of information to a single source. This could be the single most beneficial technology for the reduction of personnel.

The number of people needed could be reduced, as large volumes and types of information can be spread over diverse geographical areas, changing the need for narrow spans of control. It can also limit errors due to the single input source of information and remove the need for data input personnel.

2.2 VISION

2.2.1 The company vision

In the previous chapter the plight of the South African mining industry was aptly described by the President of the South African Chamber of Mines, Bobby Godsell. The low gold price, the escalating production costs and the depletion of ore reserves are placing the industry under financial pressure. It has become an absolute necessity to reduce the production costs of operation and to stop the losses suffered. These changes are at present survival driven and not for want of larger profits.

The new company Vision, to take the company through the changes and beyond, has been spelled out by the new Chief Executive Officer. The company wants to become a "World Class Gold Producer", by concentrating on "Output, Cost & Market value". Any restructuring done inside the Gold Plant Business unit, must thus be done in support of this new vision.
2.2.1.1 Market share - Output

Any restructuring of the Plant personnel structure will not alter the output of the Company, as long as the effectiveness of the extraction process is not reduced.

2.2.1.2 Cost, Revenue & Profit

The gold price is determined by external forces and sentiment, and not by the quality of the product. It is only through the containment and reduction of cost that a competitive advantage can be achieved in the market. Even though the extraction process only attributes to ±2% of the total production cost, the aim of minimisation of cost is nonnegotiable.

2.2.1.3 Market Value of Shares

The market value of the company's shares is determined solely by:

- The future expected financial return;
- The risk associated with this return (Stewart, 1991:22); and
- The perception in the market about these two issues

Future expected financial returns for the company are a function of present and expected ore reserves and the perception of the future gold price.

If the company carries an excess of personnel per production unit, in comparison to industry averages, it reflects negatively on the associated risk of the future return, due to the cost of and responsibility towards employees. This might force the share price down, destroying shareholders' wealth. The perception of future expected financial returns and the inherent associated risk can therefore be positively affected by reducing the number of personnel carried by the company.
2.2.2 The Gold Plant Vision

In support of the Company vision of becoming a "World Class Gold Producer" by concentrating on Output, Cost and Market value the Gold Plant has to establish its own vision and mission.

Looking at the present culture in the Company and the Gold plant specifically, the new dynamics and the changes in the corporation, the situation lends itself perfectly to aligning the plant along new management thinking.

The theory of Excellence was developed more than fifteen years ago by Peter and Waterman, but none of the features has been incorporated in the present plant environment. It would seem that there is no better time for change, than now.

The table (Table 2) created by Human & Horwtitz (1992), typifies four types of organisations with different characteristics. They believe the perfect organisation is able to balance the four types into perfect harmony. Looking at the present organisation, the plant finds itself in a Technocracy with strengths in institutional focus and control orientation, a strategy of maintenance, autocratic management styles and a culture of efficiency and procedures.
Table 2: Four typologies of organisations

<table>
<thead>
<tr>
<th></th>
<th>Boardroom</th>
<th>Hard hat</th>
<th>Technocracy</th>
<th>Missionary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
<td>Institutional Focus</td>
<td>Social focus &amp;</td>
<td>Institutional Focus</td>
<td>Social focus &amp;</td>
</tr>
<tr>
<td></td>
<td>&amp; Strategic orientation</td>
<td>Control orientation</td>
<td>&amp; Control orientation</td>
<td>Control orientation</td>
</tr>
<tr>
<td><strong>Weaknesses</strong></td>
<td>Social focus &amp;</td>
<td>Institutional focus</td>
<td>Social focus &amp;</td>
<td>Institutional focus</td>
</tr>
<tr>
<td></td>
<td>control orientation</td>
<td>&amp; Strategic orientation</td>
<td>&amp; Control orientation</td>
<td>&amp; control orientation</td>
</tr>
<tr>
<td><strong>Structure</strong></td>
<td>Corporate/</td>
<td>Simple Structure</td>
<td>Machine bureaucracy</td>
<td>Network</td>
</tr>
<tr>
<td></td>
<td>Divis ional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cultural values</strong></td>
<td>Effectiveness,</td>
<td>Production, Hard work</td>
<td>Efficiency and</td>
<td>Social development</td>
</tr>
<tr>
<td></td>
<td>Strategic health</td>
<td></td>
<td>Procedures</td>
<td></td>
</tr>
<tr>
<td><strong>Governance</strong></td>
<td>Oligarchic</td>
<td>Supervision</td>
<td>Autocracy</td>
<td>Democracy</td>
</tr>
<tr>
<td><strong>Strategy</strong></td>
<td>Growth</td>
<td>Productivity</td>
<td>Maintenance</td>
<td>Development</td>
</tr>
<tr>
<td><strong>Examples</strong></td>
<td>Corporate Head</td>
<td>Small manufacturing</td>
<td>Large Bureaucracies</td>
<td>Professional firms,</td>
</tr>
<tr>
<td></td>
<td>offices</td>
<td>concerns</td>
<td></td>
<td>Social movements</td>
</tr>
</tbody>
</table>

Source: Human & Horwitz, (1992)

Taking this knowledge and placing it in the “Organisational Culture Model” created by Rowe (1998) (Figure 4), as quoted by De Bruyn (1994:179), we find ourselves in a productive culture with characteristics of efficiency, consistency, procedures and ritual.

This culture is not conducive to radical change and would resist it. The natural flow would be to take the company through a “Quality” culture to a “Supportive” and eventually a “Creative” culture. Due to the nature of gold extraction it is possible that elements of the previous cultures would be maintained, as they are necessary for efficient operation. The benefits of a “Creative” culture in the new era of management and change have however been established.
The route for the plant to the new era and a "Creative" culture, is thus through a "Quality" culture and then a "Supportive" culture. The route to this, is through the entrenchment of the values of Excellence and Customer satisfaction.

The Vision is thus to create a culture of excellence that maximises value for the plant's clients. This vision thus drives the research, to find an organisational structure that supports it.

**The Gold Plant Vision**

To support the Company in becoming a "World Class Gold Producer" by:

- consciously and continually improving customer value, through serving the client with excellence.
2.3 EXCELLENCE

"To see victory only when it is within the ken of the common herd is not the acme of excellence"

- Sun Tzu in "The Art of War"

One of the aims of the research is to create an environment for excellence in the Business Unit. The following eight attributes were identified by Peters and Waterman (1982:13) as the attributes that cause a company to be excellent. It is thus imperative that they must be investigated and that the structure must be able to incorporate these issues. Only then will the environment be conducive to excellence.

2.3.1 A bias for action.

When it comes to action the motto must be “Do it, try it, fix it”. The team must be able to "get on with it", and not be paralysed by the analytical approach to decision making. One way of accomplishing this would be to set up project teams and let them experiment with novel ideas that they take up to prototype stage. A culture of Continuous Improvement or KAIZEN must be established.

2.3.1.1 The need for Kaizen or Continuous improvement

"If you build a better mouse trap, nature will build a smarter mouse"

- Peter Cheales (1995)

The new realities expect us to establish a culture of change that can adapt easily; one that can bring about change in a controlled and evolutionary fashion. This would also ensure that the effort of redesign and change is not sporadic, every “X” time period, but rather a continuous process of adaptation to the changing times.
The Japanese concept of Kaizen or Continuous improvement lends itself beautifully to this. According to Masaaki Imai, the author of *Kaizen: The key to Japan's Competitive Success*, as quoted by Dean (1996), "Kaizen means improvement. Moreover it means continuing improvement in personal life, home life, social life and working life. When applied to the workplace Kaizen means continuing improvement involving everyone - managers and worker alike. Quality is related to Kaizen in stating that in its broadest sense, quality is anything that can be improved".

Kaizen can also be defined as a Japanese strategy for continuous improvement encompassing the following principles (Cusumano: 1991):

i) Human resources are the most important company asset;

ii) Processes must evolve by gradual improvement rather than radical change; and

iii) Improvement must be based on statistical/quantitative evaluation of process performance.

Or as an advertisement for Kaizen courses put it so aptly: "do it better, make it better, improve it even if it ain't broke, because if we don't, we can't compete with those who do." (Video Publishing House, 1995)

Kaizen must be the way we think and act in terms of all issues, people, production and process. A belief must be created in every employee that we have to strive towards a process of gradual, unending improvement, doing "little things" better; setting and achieving ever-higher standards. In practice, it requires ongoing and incremental changes in the workplace so that real value is added and waste is eliminated.
2.3.2 Close to the customer.

The customers must be identified, listened to and learned from. Not only in terms of service and complaints but also as to what they need in terms of products. Every employee must realise that he or she has to set up a partnership with the customer that could last a lifetime.

2.3.3 Autonomy and entrepreneurship, Empowerment

Every worker must be empowered and made to foster feelings of ownership of his department, task or problem. Every employee must have the feeling of autonomy and being an entrepreneur in his field and department. If every employee is a champion there will be no distinction among them.

2.3.4 Productivity through people.

*The road to excellence is lined with people.*

It has to be accepted that every employee is an adult that can make decisions and work independently. Treating people as untrustworthy leads to their being just that. Trust is a motivator that is often disregarded and it can lead to higher levels of productivity. We have to trust our employees to do the right thing right (Ivancevich, 1994:59). We have to empower the employees to make decisions, based on their knowledge and motivated by incentives.

2.3.5 Hands-on, value-driven.

Management by walking around (MBWA), inside and outside the company, is the only way to keep your ear to the ground and to know what is happening. This connects to the concept of being close to the customer, talking and listening to him, heeding to his needs.
The shared values, the culture of the company, must be so entrenched in the worker that he makes all his decisions by this, ensuring the desired outcome. This is only possible if all workers know what is the focus and what is required. This can only be installed through proper training and charismatic leadership.

2.3.6 Stick to the knitting, Core Business.

Core business is where the company should be investing its scarce resources. It should stick to the business that it knows best and should not be wandering off into unknown areas.

The concept of "Out-sourcing" should be applied for specialist jobs, instead of carrying expensive specialists on the compliment. This would move the fixed cost of labour for specific tasks to the variable cost of contracting, which can be better managed.

2.3.7 Simple form, lean staff.

Shallow organisational structures and small corporate headquarters prove to be more successful. Simple effective and efficient structures are needed. This also leads to faster action as the decisions can be made "on the floor", quickly, as there is no need to wait for issues to be referred to a higher management level.

2.3.8 Loose-tight properties.

The work situation should be simultaneously centralised and decentralised. The worker or project team should be empowered and thus power is being decentralised, but simultaneously the shared values, the culture of the company, are centralised in that they are strategically entrenched in the mission and vision of the company.
These points will thus assist in creating a culture of excellence in the company. They will assist in developing an organisational structure that creates an environment for excellence and that supports the business needs of the business unit.

It must however be seen in context of what Peters and Waterman call "Managing ambiguity and Paradox", being able to break away from the numbers and letting common sense take a good look at a problem. With this attitude of openness, the problem can be looked at in a "fresh" manner.

Furthermore, it must be kept in mind that this is not a "magic wand" that will suddenly solve all problems. These are all suggestions that must be implemented with common sense prevailing and proper caution as to how they fit into the business needs of the business unit and its organisational structure.

2.4 THE SIMPLE SCHEME FOR CREATING EXCELLENCE

The "Simple Scheme for creating excellence" of Peters and Austin (Peters & Austin, 1987:5) is complementary to the eight excellence attributes of Peters and Waterman. "The Simple Scheme" is made up of three elements, "Care for the customer, Constant Innovation and People", with a fourth, "Leadership", tying them all together.

These points tie the excellence attributes into a single triangle that makes them easier to manage, understand and explain to others (Figure 5). This would be the tool to use when explaining the concepts to the members of the plant staff.

The individual points can now be discussed in detail.

2.4.1 Care of Customers

Doing business is about pleasing the customer. Every employee must be committed to serving the customer, making him happy and making sure he is
satisfied. Service and Quality are non-debatable issues and they must be of the highest possible standard. Training for Service and Quality must be given on a regular basis.

2.4.2 Constant innovation

The plant personnel are to be firmly entrenched in the concept of Kaizen. Constant innovation must be a way of life. This is the only way to ensure constant competitive advantage.

Figure 5: The Simple Scheme for creating Excellence

Source: Peters and Austin (1985:5)
2.4.3 People

Create in-house entrepreneurs that are given trust and are allowed to make decisions. Support the people of the company and make them feel needed. Utilise the brains of people not only their hands. Treat all people with dignity.

2.4.4 Leadership

The whole simple scheme is brought together by "management". The most prominent form thereof here would be "Management By Walking Around (MBWA)". This means that management must get out of their offices, onto the "shop floor" and be seen, talking with the workers and the customers. That is the single most important concept that has to be adopted and made part of our management style.

This concept has to be carried through down the complete length of the value chain, from the Suppliers, through the Shop floor, to the Distributors, to the Customers. There should be communication with everyone and individual characteristics known intimately. Knowledge of what they want, what they can or cannot do and what and how they think, is essential.

It is furthermore important to remember that management and leadership are interdependent and not mutually exclusive concepts. However, leadership is what makes a company prosper, whereas a lack of management will make it go under (Charleton, 1993).

Lastly, people want to be led and not managed. They want to feel that there is human involvement and not just mechanistic repetitious actions. The humanisation of management will turn managers into leaders.
2.5 ADDING VALUE

The aim of any business enterprise is to create wealth for its owners (Stewart, 1991:22). All actions taken should be directed at this. One should refrain from anything that does not add value, or even worse, destroys wealth.

The second aim of this research is to establish an environment that adds value for all the clients of the plant. This would primarily be the owners of the company, but it also looks at all the other clients the plant has, internally and externally. Servicing them with excellence would also enhance the performance of the company, assisting in adding value for the owners.

The opinion has been expressed that the only place that value is added to the company's product is at the underground work-face. This is however not true, as gold ore, once it has been brought to the surface, has potential value only, as it contains the final product in low percentages. Value is to be added when gold is extracted from the ore, converting it into a saleable product.

However, further value can be added to the final financial return by:

✦ reducing the cost incurred to produce the product; and / or
✦ by reducing the amount of revenue locked up in work in progress (WIP) inventory.

Eliyahu M Goldratt, in his business orientated novel "The goal - A Process of Ongoing Improvement", proposes a number of measures, that when implemented, will add value to production in a manufacturing plant.
He defines the goal for any business operation as "...to make money by increasing net profit, while simultaneously increasing return on investment, and cash flow", or from a different perspective;

"To increase Throughput, simultaneously reducing both Inventory and Operating expense" (1986:59), where:

- **Throughput** is the rate at which the system generates money through sales;
- **Inventory** is all the money that the system has invested in purchasing ("acquiring") things that it intends to sell; and
- **Operational expense** is all the money the system spends in order to turn inventory into throughput.

Translated to the gold plant environment, this would read:

"To increase the rate of revenue production, by minimising money locked up in work in progress while reducing costs",

Therefore the aim is to increase value, for the shareholder, by increasing market value through adding value to the product, increasing the expected future financial return, it can be supported by reducing the time that the product spends in the process, getting it sold more quickly. This results in the money being in the bank a lot sooner, collecting more interest. When it is considered that the average daily production represents approximately R3.5m in revenue, the interest lost per day could be quite substantial.
2.6 CONCLUSION

This chapter discussed the general theoretical aspects that influenced the thinking in the study. The cultural environment and world view that prompted thought in a specific direction were defined. These Visions of the Future were discussed under the headings of Change as a concept, Vision, Excellence and Adding Value for customers.

Under the heading of “Change as a concept”, “New Management Thinking” and “The Changing nature of work” were discussed. In the section on “Vision”, the company vision and the “Gold Plant Vision” were defined. The section on “Excellence” touched on both the detailed scheme as proposed by Peters and Waterman and the “Simple scheme” of Peters and Austin. The need for “Continuous Improvement” was outlined as a guardian against change and “Adding customer value” was discussed in detail.

This chapter has now “prepared the field” for developing the new organisational structure. As “structure”, “culture”, “strategy” and “vision” are all interdependent concepts, they were thoroughly discussed and brought in to context of the plant. One can now move from these more abstract concepts to the more concrete “tools” for building the structure.
3 CHAPTER THREE: TOOLS FOR Restructuring

"Form follows Function" or "Function follows Form"

-Anon

This chapter discusses the theoretical tools and concepts that will be used in the development of the organisational structure.

3.1 HORSFALL’S MODEL AND THE GOLD PLANT AS MANUFACTURING INDUSTRY

The mining industry is classified as a primary industry. The underground mining operation, in as much as acquiring the primary ore, definitely is. However, a gold extraction plant is not intrinsically part of mining. If the simple model that Horsfall (1982:6) proposed for graphically illustrating a manufacturing process (Figure 6), which is classified as secondary industry, is applied to a gold extraction plant, it is possible to place it in the same framework. It is a value adding process that is inherently a secondary industry, similar to a factory. It is thus obvious that it should be treated differently.

Through this model the separate operational functions of the Plant is generically defined. The value adding process has been "filled In" with the separate plant operations. The first of these is the Crushing Section, the part of the operation that receives the raw material from the underground mining departments and produces and delivers the correct size ore to the Milling Section. The milling operation produces a slurry of specific size, that it delivers to the Extraction Section. The Extraction operation removes the gold from the slurry and delivers a high grade gold slurry to the Smelting Section. They also deliver the now barren slurry to the Backfill Section that extracts the
coarse rock fraction as Backfill, that goes to the mining sections. The Extraction Section also disposes of the barren slurry, as waste, to the Tailings dams.

The Smelting Section smelts the gold slurry to produce the "Dore" gold bars and gold slag that is shipped as the final product.

These sections are to be treated as separate entities, due to their geographic positioning and the technology utilised. The maintenance function needed for the plant is not visible in the model, but is an intrinsic part of the plant and has to be taken into account.
3.2 PORTER'S VALUE CHAIN

The Value Chain Model as defined by Porter (1985), quoted by Callon (1996:49), gives structure to the primary and support activities to be found in any business (Figure 7). The model is important in this research as it will be used to investigate the functions that needs to be performed by the Gold Plant Personnel. This is important if the Gold plant wants to function as a separate Business Unit. This model will thus assist in defining the Personnel Structure.

![Figure 7: Porter's Value Chain](image)

Source: Porter (1985) as quoted by Callon (1996:49)

The primary functions are found in the value chain, the chain of actions that adds value at each step. They consists of:
Inbound Logistics: Receiving, storing and distributing inputs to the process;

Operations: Transformation of the inputs into the saleable product;

Outbound Logistics: Collection, storage and distribution of the final product;

Marketing and Sales: Identifies the market.

Service: Deals with Customer support and Service

The support functions are necessary for the efficient operation of the primary functions. These include:

Firm Infrastructure: includes the planning, accounting, and finance, legal, community affairs, government relations and quality management functions;

Human Resources Management: involves recruiting, hiring, training, development and compensation of employees;

Technological Development: for all facets of the organisation, including IT;

Procurement: of inputs to the value chain, including stores.
The personnel structure will thus be so designed that none of these functions is neglected. If one of these functions is not covered, the business unit will fail to perform effectively.

3.3 ORGANISATIONAL STRUCTURE & ARCHITECTURE

Before a new structure can be developed the theory behind organisational architecture needs to be investigated.

3.3.1 The basic principles

The following points are listed as the first principles for the design of an organisational structure (Kroon, 1990:246).

3.3.1.1 Line of command

The vertical lines of command give authority to the supervisor to expect action from the subordinate. It also represents the lines of reporting and communication up and down the structure.

3.3.1.2 Single line of reporting

Each employee must have only one superior from whom he receives instruction and to whom he reports.

3.3.1.3 Span width

A narrow span width leads to tighter control and vice versa. The number of subordinates that can successfully be controlled by a single supervisor, is a function of the factors listed in Table 3.
Table 3: Factors that determine Span width

<table>
<thead>
<tr>
<th>Factor</th>
<th>Level</th>
<th>Span width</th>
</tr>
</thead>
<tbody>
<tr>
<td>The effectiveness and experience of the supervisor</td>
<td>High</td>
<td>Wide</td>
</tr>
<tr>
<td>The geographical distribution of the subordinates</td>
<td>High</td>
<td>Narrow</td>
</tr>
<tr>
<td>The amount of non-supervisory tasks that has to be controlled</td>
<td>High</td>
<td>Narrow</td>
</tr>
<tr>
<td>The amount of interaction needed between supervisor and</td>
<td>High</td>
<td>Narrow</td>
</tr>
<tr>
<td>subordinates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The level of standardisation of the jobs</td>
<td>High</td>
<td>Wide</td>
</tr>
<tr>
<td>The differentiation between the jobs to be supervised</td>
<td>High</td>
<td>Narrow</td>
</tr>
<tr>
<td>The frequency of new problems experienced</td>
<td>Low</td>
<td>Wide</td>
</tr>
<tr>
<td>The level of control preferred by the Supervisor</td>
<td>Low</td>
<td>Wide</td>
</tr>
</tbody>
</table>

A narrow span width results in a steep structure with many levels.

3.3.1.4 Minimum levels

Fewer levels result in shorter communication routes and higher potential effectiveness. The biggest of corporations should not have more than seven levels of management.

3.3.1.5 Specialisation

The higher the levels of specialisation, the better the chances of effective operation. The level of specialisation must however not be so high that the job becomes monotonous and the person becomes bored.

3.3.1.6 Homogeneous grouping of functions

If functions are split up, it forces the level of decision making up the hierarchy. Placing related functions in homogeneous groups alleviates this problem.

3.3.1.7 Equalisation of authority and responsibility

When responsibility is given to a person, he must also be given the necessary authority to fulfil his responsibility. He can not be held accountable without this principle being satisfied. It is furthermore of importance that authority be spiralled
down to the lowest possible level. This brings the level of decision making as close as possible to the action, reducing reaction time.

3.3.1.8 Elasticity

The structure must be susceptible to change. It must be able to stretch up, down or sideways to accept changes.

These points will have to be taken into account when a new structure is developed.

3.3.2 Network Organisations

For the design of a Network organisational architecture on Unit Level, Marc Gernstein highlighted the following points (Nadler ea., 1992:35).

3.3.2.1 Micro-Enterprises

Micro-enterprises should be used as the basic building blocks within the network. Each unit should consist of a Micro-business unit, that has a set of capabilities that allow for the fulfilment of an entire segment of the work process. They need to deliver a product or service to a designated set of customers. If possible, each unit should have external suppliers and customers, but internal customers are an alternative.

A further spin-off form breaking the work flow down into a micro-business unit, is that the work can be split into separate business units, allowing for more effective accounting. Each unit can now control his cost and measure it against the value it adds. It also allows for easy bench-marking against other similar units. This could lead to healthy competition in the industry that creates job pride.
3.3.2.2 From the centre outward

Design should take place from the centre outward, not from the top downward. The starting point is the micro-enterprise units and the administrative superstructure should be kept to a minimum.

3.3.2.3 Work processes first

Design work processes before designing organisational structure. Instead of building the organisational structure around the division of labour with the intent of creating a hierarchy, rather analyse the logical steps in the work process. These natural breaks will then dictate the necessary subgroups needed to redesign the structure to create meaningful jobs for individuals and teams.

3.3.2.4 Maximum practical automation

When designing work processes, there should be a drive to automate as much as is practically possible. This will encourage a situation where people do tasks that uniquely use human skills and capabilities, not just inhumane repetitive work that kills the soul. It is imperative however, to heed Gernstein’s warning: “Since the automation frontier will always be changing, maximum practical automation is more orientation to design rather than a fixed technological frontier”.

3.3.2.5 Zero defects

When designing the structure, engineer the work processes for zero defects. After-the-fact inspections or reconciliation should be engineered out. It is imperative that data should be entered only once, and inspection should be built into each step in the work process to ensure that mistakes are not exported down the line. The need for the use of exception reports is evident.
3.3.2.6 Teams

The basic organisational building block for the structure should be teams, not individuals. The wider scope of teams leads to focus on output, ensuring that the output is tangible, measurable and meaningful to the people producing it. Teams also allow for flexibility, accommodating the day-to-day fluctuations in availability of staff. It furthermore allows for multi-skilling. People should be multifunctional and tasks should be defined with minimum boundaries and maximum freedom. For the team to operate most effectively, it should be self-managed, not traditionally supervised.

3.3.2.7 Share the wealth.

“People wish to share in the prosperity created by their work, though the benefits they seek, may not solely be financial.” Thus, in addition to recognition and fair pay, mechanism to understand the work-force’s values and satisfy them should be created, be that financial or otherwise. A team orientated bonus system will satisfy this need, but it is imperative that the mission of the micro-business unit be clearly defined and communicated down to the lowest level. This bonus system must then support the mission.

These points are essential for the understanding and the functioning of teams, and should be incorporated in the new structure. Putting all the factors in place at once, will be difficult, due to financial and cultural constraints, but it should be the ultimate goal.

It is foreseen that as a start, a structure that flows from the new vision and mission, accommodating the present personnel with skills that the plant cannot afford to lose, will have to be put in place. As resources become available the structure must grow.
towards the ultimate perfect structure, putting in place the "correct fit" incumbents, whilst grandfathering out the others.

3.3.3 Other important points

Apart from the low cost strategy, a number of points, made by McLagan & Nel (1995), underwrites the objectives set by the vision and assists in the understanding of what the organisational structure should achieve. They suggest that:

- When there are mistakes, don't blame, use them to learn;

- Build co-operation, not competition, between departments;

- Share all information;

- Organise around customers;

- Get feedback from customers and subordinates;

- Eliminate activities that do not add value; and

- Operate with three levels of management, not seven.

These points support the concept of a value adding, learning organisation, that serves the customer and has a flat network structure.

From experience on the plant, a number of other objectives can be formulated for which the need has arisen. They are:

- To clearly define the Vision of the Gold Plant and to develop a structure that supports this;
To reduce the levels of management and move away from a bureaucratic structure, incorporating a Network Structure which results in a free flow of information and a feeling of Teamwork;

- To establish a Team culture throughout the business unit, removing the us-and-them culture that presently exists between operational and maintenance personnel;

- To set-up and empower self managing production teams that will be evaluated and rewarded on their output;

- To bring the maintenance staff closer to the production teams, reducing down time and need for overtime.

3.4 CONCLUSION

This chapter discussed the theoretical tools and concepts that will be used in the development of the organisational structure.

Horsfall's model of a manufacturing industry was discussed and the sections and operations found on the plant were fitted into the model. This clearly showed the plant's true nature of being a secondary industry, in contrast to the mining operation which is a primary industry.

Also discussed was Porter's "Value chain model" and the business functions that it defined. It showed the primary and support functions that are needed for the effective operation of a business function.
The theory pertaining to the development of an organisational structure and the design of a network structure, showed the need for wider spans of control and a flat structure, that is based on team operations.

The discussion of other important points lead to the realisation that the structure should enhance issues such as co-operation, sharing of information and feedback. These points support the concept of a value adding, learning organisation, that serves the customer and has a flat network structure.

From experience on the plant, a number of other objectives were formulated for which the need has arisen. It became obvious that the plant needed to define clearly its “Vision” and to develop a structure that supports this. A team based structure, removing the us-and-them culture that presently exists between operational and maintenance personnel on the plant, is envisaged.
To fully understand something, try to change it

- Anon

This chapter will be the application of the previously discussed theory. The new structure will now be designed. The following points outline the procedure that will be followed:

- Identifying the client
- Defining business functions through the use of:
  - Horsfall’s (1982:6) simple model of a manufacturing process; and
  - Porter’s Value Chain Model (1982)
- Translating the functions into jobs;
- Check jobs against needs; and
- Designing a structure.

4.1 IDENTIFYING THE CLIENT

Adding value for the clients is the responsibility of every employee. Learn from the people you serve by listening to them, intently and regularly and deliver excellent service (Peters :1982:14).

It is necessary to identify the plant’s clients so as to ensure that the focus is directed at the right services.

The following clients have been identified:
**Direct**

- Inbound: the mining department, as supplier of raw material;
- Inbound: other suppliers;
- Outbound: the mining department, as receiver of Backfill;
- Outbound: the Rand refinery, as receiver of the Product.

**Indirect**

- The Company's shareholders;
- The Company's employees;
- The people and environment that the Extraction plant operates in.
4.1.1 The mining department

The extraction plant has the mining department as a client, both as a supplier of raw material and as a receiver of backfill needed for underground support. This requires quality specifications to be set for both incoming ore and outgoing backfill. It also requires close contact and communication channels that need to be put in place.

4.1.2 Other suppliers

Suppliers of equipment, chemicals and services are clients of the company, just as much as the company is a client of theirs. It is thus essential to set up the right communication channels and specifications to ensure ease of use. The company is dependent on these suppliers and should not neglect them.

4.1.3 The Rand refinery

The Rand Refinery is the “client” to whom the final product is delivered. They are in essence the out-sourced specialist that handles outbound logistics, refining and packaging to market requirements, sales & marketing and client service. They rework the product to higher purity, adding value and then sell it on the company’s behalf. Quality specifications are set in terms of weight and size of the product, when in bar form and there is close liaison in terms of delivery times. Electronic data exchange is used for the communication of other information that is time dependent, such as assay values, weights and financial information.

It is obvious that the Refinery has already established its client relationships and have done a lot towards setting-up proper technology and procedures.
4.1.4 Company’s shareholders

The shareholders are the major client. They are in essence the employer of all personnel and it is the responsibility of all employees to deliver the best return on, and add value to, the shareholder’s investment. Employees receive their salaries for work done, to the best of their abilities. The effective and efficient operation of the plant is thus the responsibility of each employee. The plant does not deal with the shareholders directly, but indirectly they are the major client.

4.1.5 The Company’s employees

*If Environmental Awareness is the 90’s solution to exploitation of Natural Resources, what would be the equivalent in terms of Human Resources, People Awareness?*

Employees are clients of the company in as much as that they render their services for payment. Contracts are drawn up and money changes hands. If value is to be added for all clients, it also applies to employees. Employees are not to be exploited, but are to be treated fairly, working in a safe environment and a fair price is to be paid for services rendered. Communication channels should be swift and efficient. If the employee feels that he is treated unfairly, he will leave, taking valuable skills with him.

4.1.6 The people and environment that the Extraction plant operates in.

Business is to realise that they are not operating in isolation. They are an integral part of the environment and impacts upon it just as much as environmental issues impact upon them. The people and community around the operation is always aware of what is happening in the operation and will have opinions as to the impact thereof on them. This will lead to their voicing their opinions and expecting a response. It might go as far as interference by government departments and laws or new laws being passed.
The plant personnel have to realise that they have interfaces with the environment and the people living in it, and that they have to respond to this. Stuart Taylor (1992), in his article *Green Management: The next competitive weapon*, proposes a proactive management trend that will assist managers in caring and servicing the environmental client.

### 4.2 DEFINING BUSINESS FUNCTIONS

The next step is to define the business functions needed. This is to be done by making use of the following two models:

- Horsfall’s (1982:6) simple model of a manufacturing process; and
- Porter’s Value Chain Model

The two models were placed on the two axes of a matrix. Horsfall’s model was populated with the functions found inside the "Sources of power" and "Value adding technology" sections presently found on the plant. Every intersection was then assigned a number, as it was deemed to fit into a specific field of responsibility.

The sections that had no causal connection were greyed out. A similar number was assigned to functions that were closely associated or could be managed by a single supervisor.

What became apparent very quickly, was that every section has a value chain and is a micro-business unit. Each section is self contained, (Mohrman et al., 1995:75) has its own unique clients and serves as sub-units for servicing the clients of the Gold Plant as a whole.
### Table 4: The defining of functions

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<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Capital</td>
<td>Electricity</td>
<td>Auxiliaries (Water &amp; Compressed Air)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inbound Logistics</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Operation &amp; Maintenance</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>Supplied by Mining Dept.</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>Out sourced to FA</td>
</tr>
<tr>
<td>Outbound Logistics</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>7</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sales &amp; Marketing</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Client Service</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Firm's Infrastructure</td>
<td>1</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>Out sourced to FA</td>
</tr>
<tr>
<td>Human Resources Management</td>
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<td>2</td>
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<td>4</td>
<td>7</td>
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<tr>
<td>Technological Development</td>
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<td>2</td>
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<td>1</td>
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<tr>
<td>Procurement</td>
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<td>4</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>4</td>
<td>Out sourced to FA</td>
</tr>
</tbody>
</table>

### 4.3 TRANSLATING THE FUNCTIONS INTO JOBS AND POSITIONS.

Each of the functions can be subdivided into a specific unit or micro-enterprise with his own "clients". This means that each sub-unit should have a separate "manager".

The job grading and position will have to be determined through analysis and the Paterson grading given in the Table is only a proposed level, based on experience.
Table 5: Functions, Jobs and Titles

<table>
<thead>
<tr>
<th>Function</th>
<th>Job</th>
<th>Title</th>
<th>Paterson Grading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Manager</td>
<td>Metallurgical Business Unit Manager</td>
<td>E1/D4</td>
</tr>
<tr>
<td>2</td>
<td>Crusher &amp; Ore Transport</td>
<td>Superintendent Crushing</td>
<td>D1/2</td>
</tr>
<tr>
<td>3</td>
<td>Mill &amp; Backfill</td>
<td>Superintendent Milling</td>
<td>D1/2</td>
</tr>
<tr>
<td>4</td>
<td>Extraction &amp; Smelting</td>
<td>Superintendent Extraction</td>
<td>D1/2</td>
</tr>
<tr>
<td>5</td>
<td>HR &amp; Safety</td>
<td>Superintendent Human Resources</td>
<td>D1/2</td>
</tr>
<tr>
<td>6</td>
<td>Utilities &amp; Maintenance</td>
<td>Superintendent Maintenance</td>
<td>D1/2</td>
</tr>
<tr>
<td>7</td>
<td>Metallurgy, Information Technology &amp; Process Control</td>
<td>Superintendent Process &amp; Technology</td>
<td>D1/2</td>
</tr>
</tbody>
</table>

4.4 DESIGNING THE STRUCTURE

Figure 1 already gave us a view to the present structure. The structure has between four and five levels of supervision and is staggered as functions are set on different levels. The Paterson Grading varies from E1 for the Metallurgical Manager, through D3, D1, C4, C3 to C1.

The new structure must incorporate the theory that has been discussed. The structure must have minimum levels of supervision, preferably three, and a span width of one in six is envisaged. The requirement pertaining to span width is flexible, as needed, but must be efficient.

The micro-business units were determined through the combination of the Porter and Horsfall models and the jobs were defined. These functions now have to be placed in a structure (Figure 8).
The seven sided, heptagon, symbolises the flow of information and power through the management functions. The next layer is added for completeness and as a suggestion only. This will have to be finalised with the input of all the people in the first ring. This will ensure buy-in and co-operation.

Inside the teams one or more understudies have to be identified, and they must be given the opportunity to develop their skills. A career path must be visible to them.

It is also imperative that the structure be seen as relying heavily on empowerment. It is foreseen that the Metallurgical Business Unit Manager will be part of the Company's senior management. He will expect the superintendents to be responsible for the day to day running of their individual plants, keeping in mind their universal goals.
4.5 CONCLUSION

This chapter went through the process of developing the new structure. The clients were identified and the business functions were defined through the use of Horsfall's (1982:6) simple model of a manufacturing process and Porter's Value Chain Model (1982).

The idea of using teams to fulfil functions were found through the combination of the two models. These teams were clearly defined and each could be turned into a separate micro-business unit.

These teams each has its own functions and were given a "Manager". This could then be translated into jobs and the structure designed.

A network structure was designed that could clearly show the flow of power and information inside the structure. It resulted in three levels of management and a wide span of control. Further input for the completion of the structure is needed from all involved parties to ensure success.
CHAPTER FIVE: FINDINGS AND RECOMMENDATIONS

FIFO - Fit In or Fly Off

- Nasser & Vivier (1993)

This chapter is to discuss the findings of the research and make recommendations as to the implementation of the new structure.

5.1 FINDINGS

The study clearly identified the possibility of establishing micro-business units on the Plant. Through the combined use of the two models, it was possible to define each functionality in the value chain and allocate business functions to it. Each unit has its own clients, internal and external and the culture of client service will have to be entrenched.

These units could then be allocated a “Micro-business unit manager” that has to lead the unit to success. These “managers” form the first ring in the new structure, that through the guidance of the Business Unit Manager will manage their individual units. The structure is drawn as a heptagon to accentuate the need for intercommunication and the equality of all members and their commitment to achieving the same goal.

The question is now whether the structure is conducive to a culture of excellence and if it is adding value for the client.

5.1.1 Excellence

Looking at the structure and evaluating it against the excellence attributes of Peters & Waterman the following is to be said.
5.1.1.1 A bias for action

The structure is conducive to action as it reduces the levels of management, bringing them closer to the shop-floor. It elevates long reporting lines and slow responses. It also could aid in developing a culture of continuous improvement as it makes each unit responsible for innovation and development in its own sphere. The importance of Kaizen or Continuous Improvement must be entrenched in every member, so as to ensure survival in an ever changing competitive market.

5.1.1.2 Close to the customer.

It brings everybody closer to the action that serves the client, which could improve effectiveness. The individual "managers" will have to ensure that they increase their interaction with their customers, setting up quick response lines. They will also have to instil a culture of client service in the members of the team.

5.1.1.3 Autonomy and entrepreneurship

The structure gives ownership of the process and area to the team. The structure lends itself ideally to the decentralisation of power, empowering the employees. The culture of teamwork could lead to self-management teams that would install autonomy and entrepreneurship.

5.1.1.4 Productivity through people.

A large amount of trust is given to each member of the team, making them responsible for their own actions. The structure is built on the assumption that each individual has the capacity to take decisions that will add to the accomplishment of the vision and mission of the Plant as a whole.

5.1.1.5 Hands-on, value-driven.

There is a large onus on the leaders of the teams and the Business unit manager to entrench the values and aims of the plant in the workers. As the structure
brings “management” closer to the floor, it is possible to interact closer and ensure that the right values are pursued.

5.1.1.6 Stick to the knitting.

The structure focuses all activities towards the core business of the plant. It makes every employee responsible for achieving results and not to meander off in his own direction.

5.1.1.7 Simple form, lean staff.

The structure is able to reduce the amount of personnel needed and thus be simple and lean. Specialist tasks are easier to identify and the opportunities for out-sourcing can be exploited more readily.

5.1.1.8 Loose-tight properties.

Due to the interaction between individuals, the structure is flexible making it possible to handle change more effectively.

Each of the excellence criteria is thus met through the new structure. The structure is thus conducive to creating a culture of excellence on the plant.

5.1.2 Adding value for the clients

The second aim of the new structure was to add value for the clients of the Gold Plant. We will look at each client individually.

5.1.2.1 The mining department

The inbound client, the mining department, as supplier of raw material, expects of the plant to receive ore as it is hoisted, as they have minimal storage capacity and limited time to hoist in.
The new structure dedicates a team toward servicing their needs. This team however also has the Milling section as their outbound client to whom crushed ore is supplied. This leaves the possibility of creating two dedicated teams to service the two clients.

As the receiver of Backfill, the Mining department has to deal with a different section of the plant, but the structuring of their department places a layer between the producer and the user, in the Rock Mechanics Department, that is the secondary client. They have the same benefits in that a single team is to be dealt with in terms of supply and quality.

5.1.2.2 Other suppliers

Through decreasing the layers of management the supplier is brought closer to the actual user. The new structure leaves a single individual to deal with as he carries full responsibility for the products that are used. The monitoring of these transactions must eliminate the possibility of corruption.

5.1.2.3 The Rand refinery

Due to the excellent client service that the Rand refinery has put in place, very little will change for them. As the receiver of the final product, they will deal with the Business Unit Manager directly in terms of transport, assaying and accounting for the gold. They have to deal with other clients on the mine for financial issues.

5.1.2.4 The Company's shareholders

As the Company's shareholders are the primary clients, the new structure must not infringe on their rights to increase their wealth. Adding value for them means that the new structure must increase the market share-price. This can only be
done through increasing the expected future profit or by reducing the risk to making this profit (Stewart, 1991:22).

By reducing the amount of management used to achieve the same results, value is added for the shareholder. It reduces cost and it increases efficiency as excessive management rather destroys than adds value (Koch & Godden, 1996).

5.1.2.5 The Company's employees

Value is added for the employees as they are given more responsibility for, and "ownership" of, their own actions. This could increase their quality of work as they are realising more of their higher hygiene and motivational factors as defined by Herzberg (Gibson ea., 1994).

5.1.2.6 The people and environment that the Gold Plant operates in.

As a client, the need for improving the service to the people and environment that the plant operates in, is ever increasing. This responsibility cannot be shirked.

As for the new structure, this is the one client that does not benefit directly from the restructuring. It might even be damaging in that there is a decrease in the number of people required and the short term unemployment in the area might increase.

From an environmental point of view however, the task of waste disposal management is clearly defined and not just left to chance.

5.2 RECOMMENDATIONS

The present structure is typical of the organisational structures found in most of the older mining houses. There is a concerted effort by all to remove these structures and bring South Africa in line with newer management philosophy. The driving force is cost and competition. The rapid globalisation of markets and the competition that it brings,
is forcing the South African mining industry to reconsider the way it does business. The change in the political situation is also changing the face of labour and ways must be found to reduce these threats.

5.2.1 The New Structure

The new proposed structure is setting the trend and creating the climate for flatter, more people orientated organisational structures. It also puts in place a structure for building teams that take responsibility for their own actions. It must be put in place as soon as possible.

It is however important that the structure is not perceived as trying to cope with retrenchment, but rather as the solution to the problem. This is to be conveyed and championed by management if the new structure is to be accepted.

The new structure only made suggestions as to the job grading of each position. Each job will have to be evaluated to assess its job grading and detailed job descriptions will then have to be written.

It might be necessary to put people in positions without promotion to higher levels and "grandfather" some other persons through to retirement. This must however be phased out as soon as financially possible.

Lastly, it is to be made clear that this is the new way of doing business. It does not allow for people that do not commit to the team principle. Those individuals that find themselves unable to work in this kind of environment, will do better by leaving the organisation, as this is not negotiable.
5.2.2 Vision and Mission

The vision and mission proposed for the plant should be firmly entrenched. Excellence and client service must become the entrenched values by which all decisions are judged and made. This will ensure that empowerment does not become a problem as all members have a common goal. The strategy of low cost is to be the battle cry for all teams and team members.

5.2.3 Self Organised Work Teams

The new structure divides the operation neatly into micro-business units. The possibilities of turning these micro-units into self managing work teams are significant. The structure aims to establish the culture that will lead to this.

The people inside the structure will determine the speed and type of empowerment that will lead to the decentralisation of power. The situation can be monitored and power transferred at a rate that is acceptable to higher management and as the teams become more and more proficient in self management. Therefore will have to be monitored properly and the proper care will have to be taken not to force the pace. If the teams are not ready to handle the responsibility the whole process might fail.

This highlights the argument of training and developing the team members to higher levels of proficiency and enhances the need for a properly organised Human Resources development department, even if some of the training is out-sourced.

5.2.4 Production Bonus

The new structure will be entrenched, and its efficiency enhanced, if the participants can see a tangible gain in it for themselves. The hidden profits are not as clearly visible to the shop floor team member and it would be beneficial to give everyone a tangible
gain. Looking again at the Herzberg motivational model, it will be profit sharing, lower hygiene factors, that will move people, but it will be the higher motivators, that motivated them (Gibson ea., 1994).

It is foreseen that the bonus should have two tiers, one that compensates for the achievement of team goals, and another that compensates for the achievement of plant goals. This is to ensure that team priorities do not override plant priorities. The split could probably be a 40/60 percent split for team and plant performance for team members. Support personnel will receive 100% of their bonus on total plant performance.

The Bonus Payment should thus be a function of customer value added production. It should however be tied to the average Gold Price and rand / dollar exchange rate for the month, as revenue will be determined by this.

The bonus system could use the following criteria for plant wide evaluation and rewarding each member:

- Rewarded for low cost production, not just being within budget;
- Rewarded for the decrease in Gold inventory on plant;
- Rewarded for minimum hours that the mining sections could not hoist due to plant issues;
- Rewarded for high recovery and high percentage gold in calcine slime; and
- Rewarded for low amounts of gold in slag

Each of these issues adds value for the client and should thus be managed and rewarded. Each section will have to set up its own criteria and measuring systems for each of the plant-wide criteria.
As possible suggestions, each team can be rewarded for measuring criteria such as:

- Tons Crushed per ore available hour for the crusher team;
- Tons milled per ore available hour and particle size for the milling team;
- Residue gold values for the extraction team; or
- Gold in slag for the Smelting team.

The bonus system is deemed imperative to get buy-in from each team and support member and should be implemented as soon as the new structure is fully in place.

5.3 CONCLUSION

This chapter measured the new structure against the original aims. It proves that this structure will indeed assist in creating an environment for excellence, fulfilling each of the excellence attributes of Peters. It is furthermore proven that value will be added for each of the plant’s customers. In the case of the environment it is however not clearly visible. It is thus proven that the structure will reach its aims if it is implemented and properly championed.

Further recommendations are made as to the Vision and Mission of the plant, to ensure the acceptance thereof.

The concept of Self Organised Work Teams and empowerment became clearly visible and empowerment should be part of the restructuring. The pace should however be monitored so as not to alienate the participants due to the fact that they cannot cope with their new responsibilities.

Lastly, it became apparent that a Production Bonus scheme would support the implementation of the new structure, bringing tangible gains to the participants. This should be implemented as soon as the new structure is in place.
There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain of success than to take a lead in introduction of a new order of things, because the innovation has enemies in all those who have done well under the old conditions and lukewarm defenders in those who may do well under the new.

- Machiavelli - The Prince

6.1 SUMMARY

Due to the dire position of the mining industry, as outlined by the President of the Chamber of Mines in chapter one, the industry is forced to take a hard look at the way that they do business. The business environment and the mining industry in particular, is feeling the pinch of the realities in a changing South Africa and an ever-changing competitive World Market.

This research took five chapters to develop a new organisational structure for the plant that would assist it in coping with the new realities. A structure had to be designed that would be conducive to an environment of excellence and would add value for its clients.

The first chapter gave the background information as to the need for the research, prompted by the restructuring needs of the new business environment. It also defined the scope of the research, the methodology to be used and demarcated the chapters.

The second chapter discussed the general theoretical aspects that influenced the thinking in the study. The cultural environment and world view that prompted thought in a specific direction were defined. These Visions of the Future were discussed under the headings of Change as a concept, Vision, Excellence and Adding Value for customers.
The third chapter discussed the theoretical tools and concepts that was used in the development of the organisational structure.

Horsfall's model of a manufacturing industry was discussed and the sections and operations found on the plant were fitted into the model. This clearly showed the plant's true nature of being a secondary industry, in contrast to the mining operation which is a primary industry.

Also discussed was Porter's "Value chain model" and the business functions that it defined. It showed the primary and support functions that are needed for the effective operation of a business function.

The theory pertaining to the development of an organisational structure and the design of a network structure, showed the need for wider spans of control and a flat structure, that is based on team operations.

The discussion of other important points lead to the realisation that the structure should enhance issues such as co-operation, sharing of information and feedback. These points supported the concept of a value-adding, learning organisation, that serves the customer and has a flat network structure. A team-based structure, removing the us-and-them culture that presently exists between operational and maintenance personnel on the plant, was envisaged.

The fourth chapter went through the process of developing the new structure. The clients were identified and the business functions were defined.

The idea of using teams to fulfil functions were found through the combination of the two models. These teams were clearly defined and each could be turned into a separate micro-business unit.
A network structure was designed that could clearly show the flow of power and information inside the structure. It resulted in three levels of management and a wide span of control. Further input for the completion of the structure is needed from all involved parties to ensure success.

The fifth chapter measured the new structure against the original aims. It proved that this structure will indeed assist in creating an environment for excellence, fulfilling each of the excellence attributes of Peters. It furthermore proved that value will be added for each of the plant’s customers.

The concept of self organised work teams (SOWTs) and empowerment became clearly visible and empowerment should be part of the restructuring.

Lastly, it became apparent that a Production Bonus scheme would support the implementation of the new structure, bringing tangible gains to the participants.

6.2 CONCLUSION

One of the surest ways to achieve efficiency is through the increase of productivity, reducing the number of people needed per one production unit. This flows from the overall low cost strategy. But if the benefits of empowering people and making them responsible for their own destiny is considered, the motivation for "less is more" places the onus on the team members themselves.

The research led us through the concept of change and the need for continuous improvement and the changing nature of work. It defined excellence and adding value for the customer concepts and gave us a vision for the future.
It developed a new organisational structure, making use of the business and operational needs of the plant, resulting in an operational team and support structure that will fulfil these needs.

I believe the new structure will create an environment for excellence and lead to an operation that proactively and consciously, continually improves customer value.

This structure now needs to be taken to the members of the plant personnel and sold to them. If they, as a team, do not buy into the new structure, restructuring should best not be done at all. Individuals that do not accept the concept can be discarded, but the team as a whole must accept it. The new structure was developed to improve operational effectiveness and efficiency, and if that is destroyed by the new structure, we would in fact have moved backwards instead of forwards.

This research has been a journey into the possibilities of human endeavour and the growth of individuals. It opened up the possibility of taking something old and turning it around, into something new. It was a fresh look at the way business is being done and how it actually should be done. It "... could be the beginning of a long and meaningful friendship".
# Bibliography


HUMAN & HORWITZ, 1992. On the Edge, How South African Companies cope with Change, Juta, Kenwyn, Cape Town, South Africa


