DURBAN CAMPUS

# The contribution of a reengineering/retrenchment process to organisational effectiveness

by

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Supervisor : Professor Elza Thomson

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**DECLARATION**

I, Mohamed S Khan, declare that this dissertation, titled;

"The contribution of a reengineering/retrenchment process to organisational effectiveness"

submitted by me for the Master of Business Administration (MBA) at the University of Natal, Durban has not been submitted for a degree at any other university. I further declare that this my own work in design and in execution and that all sources consulted and used have been indicated and acknowledged by means of complete references.



Signed:.....

Mohamed S Khan

Dated:.....

**ACKNOWLEDGEMENTS**

I would like to thank the following people who took the time to share their experience, information and expertise :

| | |
|---|---|
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**Abstract**

With the advancement of technology and rapid globalisation, organisations need to be alert and responsive to changes in the marketplace. It is expected of organisations to be lean, low cost producers of goods or providers of services. Those that do not fit this general description are mercilessly raked aside to make way for new competitors. Those that do survive cannot stagnate into old style business operations, but have new adopt new ways to forge forward or suffer a similar fate of other organisations, forced to close their doors by being uncompetitive.

In the world competitiveness report, seen below, much to the dismay of a handful of brilliant businessmen, South Africa features in the twenties and thirties, and has for the past five years shown fair but not rapid signs of advancement into the top twenty.

**Table 1: World Competitiveness Report Summary**

**GROWTH COMPETITIVENESS INDEX RANKING**

| Country | Growth Competitiveness Ranking 2001 | Growth Competitiveness Ranking 2001 among GCR 2000 countries | Growth Competitiveness Ranking 2000 |
|---|---|---|---|
| Finland | 1 | 1 | 5 |
| United States | 2 | 2 | 1 |
| Canada | 3 | 3 | 6 |
| Singapore | 4 | 4 | 2 |
| Australia | 5 | 5 | 11 |
| Norway | 6 | 6 | 15 |
| Taiwan | 7 | 7 | 10 |
| Netherlands | 8 | 8 | 3 |
| Sweden | 9 | 9 | 12 |
| New Zealand | 10 | 10 | 19 |
| Ireland | 11 | 11 | 4 |
| United Kingdom | 12 | 12 | 8 |
| Hong Kong SAR | 13 | 13 | 7 |
| Denmark | 14 | 14 | 13 |
| Switzerland | 15 | 15 | 9 |
| Iceland | 16 | 16 | 23 |
| Germany | 17 | 17 | 14 |
| Austria | 18 | 18 | 17 |
| Belgium | 19 | 19 | 16 |
| France | 20 | 20 | 21 |
| Japan | 21 | 21 | 20 |
| Spain | 22 | 22 | 26 |
| Korea | 23 | 23 | 28 |
| Israel | 24 | 24 | 18 |
| Portugal | 25 | 25 | 22 |
| Italy | 26 | 26 | 29 |
| Chile | 27 | 27 | 27 |
| Hungary | 28 | 28 | 25 |
| Estonia | 29 | - | - |
| Malaysia | 30 | 29 | 24 |
| Slovenia | 31 | - | - |
| Mauritius | 32 | 30 | 35 |
| Thailand | 33 | 31 | 30 |
| South Africa | 34 | 32 | 32 |
| Costa Rica | 35 | 33 | 37 |

**CURRENT COMPETITIVE INDEX RANKING**

| Country | Growth Competitiveness Ranking 2001 | Growth Competitiveness Ranking 2001 among GCR 2000 countries | Growth Competitiveness Ranking 2000 |
|---|---|---|---|
| Finland | 1 | 1 | 1 |
| United States | 2 | 2 | 2 |
| Netherlands | 3 | 3 | 4 |
| Germany | 4 | 4 | 3 |
| Switzerland | 5 | 5 | 5 |
| Sweden | 6 | 6 | 7 |
| United Kingdom | 7 | 7 | 8 |
| Denmark | 8 | 8 | 6 |
| Australia | 9 | 9 | 10 |
| Singapore | 10 | 10 | 9 |
| Canada | 11 | 11 | 11 |
| France | 12 | 12 | 15 |
| Austria | 13 | 13 | 13 |
| Belgium | 14 | 14 | 12 |
| Japan | 15 | 15 | 14 |
| Iceland | 16 | 16 | 17 |
| Israel | 17 | 17 | 18 |
| Hong Kong SAR | 18 | 18 | 16 |
| Norway | 19 | 19 | 20 |
| New Zealand | 20 | 20 | 19 |
| Taiwan | 21 | 21 | 21 |
| Ireland | 22 | 22 | 22 |
| Spain | 23 | 23 | 23 |
| Italy | 24 | 24 | 24 |
| South Africa | 25 | 25 | 25 |
| Hungary | 26 | 26 | 32 |
| Estonia | 27 | - | - |
| Korea | 28 | 27 | 27 |
| Chile | 29 | 28 | 26 |
| Brazil | 30 | 29 | 31 |
| Portugal | 31 | 30 | 28 |
| Slovenia | 32 | - | - |
| Turkey | 33 | 31 | 29 |
| Trinidad and Tobago | 34 | - | - |
| Czech Republic | 35 | 32 | 34 |

Internet Reference 1

What needs to be explored are the reasons behind this phenomena. Is South Africa simply not trying as a nation to move up the competitiveness ranks? It is obvious that the answer is a simple negative. South Africa is certainly trying, but while we begin to

get into the mode of being competitive, our competitors in the rest of the world have already begun this process two decades ago and are well experienced in being competitive and forcing organisations into survival and success.

Bayside Aluminium, a subsidiary of BHPBilliton, the worlds largest mining group, did exactly that. Bayside Aluminium decided to implement two such reengineering processes. The first reengineering process, called the BRP or Bayside Renewal Process was an issue of survival. In other words had Bayside Aluminium not gone through this process, the smelter would have faced closure within one year. The objective of this process was to allow Bayside Aluminium to survive for at least the next decade. The success of this process will be discussed at a later stage in this thesis in Chapter 2.

The second reengineering process had distinct differences in the way it was conducted and had a similar objectives but with a different time frame. The second reengineering process was called the CTG or 'close the gap". The main objective of this process was to close the competitive gap between Bayside Aluminium and its competitors in the medium term in order to maintain long term survival. This process was done with the view of accelerating cost saving exercises like natural attrition, which are more medium term. Also one of the objectives was to do such an exercise whilst the company was not under pressure to reduce costs immediately.

The thesis attempts to display the success of the two reengineering processes, whilst critically evaluating the methods used to implement the two process with a greater emphasis on the CTG process, being the latter process which BHPBilliton is exercising at other subsidiaries. Issues discussed and critically analysed in detail are

- Real time cost benefits
- Full time employee reduction success
- Organisational climate before and after the process and its effect on the plant performance including the future impact of cooperation by Unions
- Bayside Aluminium's movement on the cost curve after the exercise

The learnings that arise out of this study could easily be applied to any organisation embarking on a similar exercise without having to make the costly mistakes that sometimes arise during reengineering exercises due to inexperience.

# Chapter 1

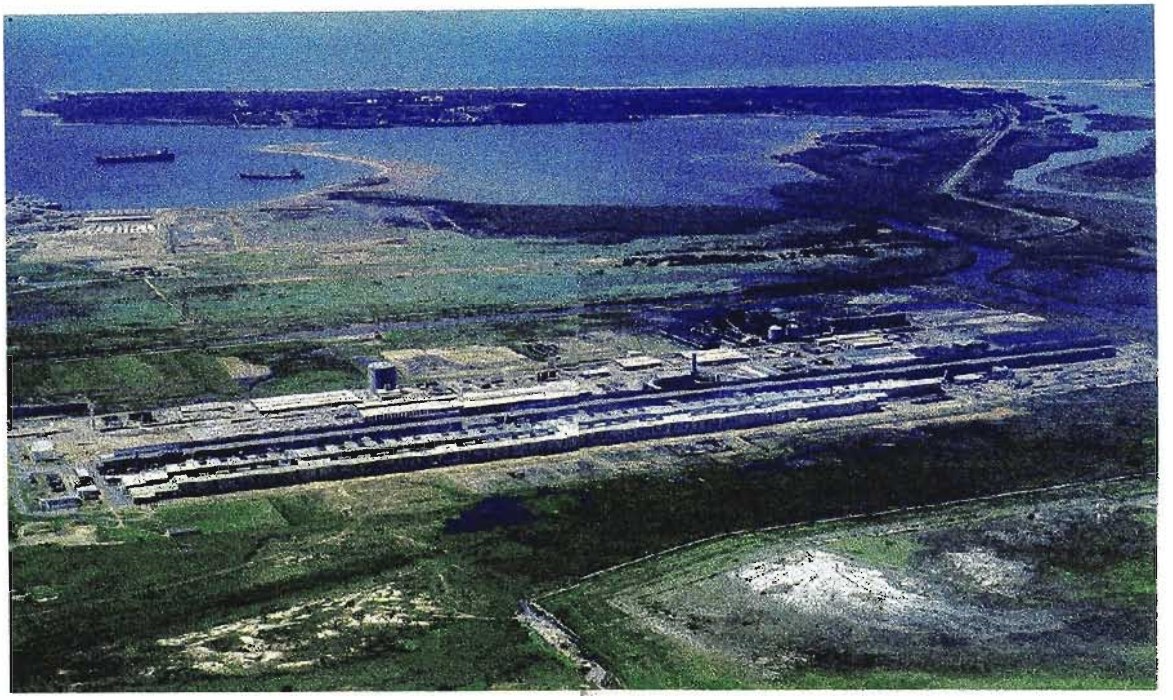
# Introduction and Organisation

# 1 The contribution of a reengineering/retrenchment process to organisational effectiveness at BHPBilliton Bayside Aluminium

## 1.1 Introduction

Bayside Aluminium is an aluminium smelter, former known as Alusaf, until taken over by the Billiton group. In the year 2000 Billiton merged with another mining resource group, BHP from Australia and formed the largest mining resource group named BHPBilliton.

Figure 1: Below an aerial view of BHP Bayside Aluminium



Most of Bayside Aluminium's range of products is sold locally to Hulamin which is approximately eighty percent. The remainder of the product is exported. Bayside Aluminium therefore has the transport cost advantage as compared to potential importers. In fact Bayside Aluminium has quite a few advantages other than transport as compared to it's competitors. Below are some of the advantages Bayside Aluminium has

- Low transport cost as compared to competitors using seafreight and having to endure import costs

- Competitors supplying local suppliers would have to use seafreight in order to supply local customers
- Once product lands in the country , import duties apply over and above road transport costs in order to get product to the customers

- Rand dollar exchange rate ,
  - The price of aluminium is set in dollars at the London Metal Exchange and it is for this reason that all smelters sell their product using the dollar-based price.
  - It is unfortunate that the rand has been depreciating against the dollar however for a supplier like Bayside Aluminium that is being paid in dollars, this means increased revenue.
  - Also as the rand weakens further the suppliers profit margin increases due to it being dollar based
- Cheap labour
  - Competitors in places like Europe, North America and Canada have high labour costs as compared to South Africa
- Readily available labour supply
  - South Africa has one of the highest rates of employment as compared to its competitors and therefore always has an available labour supply.
  - Skilled labour is a problem all over the world, however this is actually a serious disadvantage for South African companies and continues to be a problem due to the continual brain drain to other countries.
  - However semiskilled or unskilled labour is in healthy supply for South African companies at cheap rates
- Cheap and available power supply
  - This is once again an issue of demand and supply. South Africa has a good, stable supply of electricity. In fact South Africa is in an enviable position compared to some of the North American and Brazilian smelters who had to mothball or close down their smelters due to the cost of electricity becoming exorbitant due to throttled supply. This made it unprofitable to operate the smelters and were forced to close or mothball
- Good infrastructure

    - South African roads, rail and port infrastructure are rated of the best in the world when comparing first world countries.
- Good weather
    - Although this may be considered a minor point, it certainly has an impact on transportation costs, plant location etc. A good example is a mine belonging to BHPBilliton, located on the northern tip of South America, where due to heavy snowfalls, a new road has to be constructed annually to service the mine at the mine's cost. Such issues do not require consideration in South Africa and especially a smelter like Bayside Aluminium, which is situated in a metropolitan area
- Available technology
    - South Africa's technology and software infrastructure is one of the best in the world. Although not as advanced as some of the first world countries , nonetheless adequate for South African business needs.

Bayside Aluminium therefore becomes very similar to other companies from other industries competing globally. One other advantage that Bayside Aluminium has is the "Window of Africa", with opportunities into Africa where large corporate finance companies like the Industrial Development Corporation are investing large sums of capital in order to harness the potential that Africa has to offer. For a company like Bayside, this is business at the doorstep.

To remain in a good position to be the preferred supplier Bayside Aluminium would have to be

- Low cost producer comparable to the best in the world
- Have new, more efficient technology or be a greenfields smelter, like BHP Billiton Mozal Aluminium smelter
- Be subsidised

In Bayside Aluminium's case we had

- High costs
- High full time employee (FTE) numbers

- Costly logistics
- Old infrastructure and equipment requiring major maintenance or upgrades
- Low skill levels

All of the above caused Bayside Aluminium to move further up the cost curve, even though it had been through a reengineering process. Controlled cost reduction was simply too slow for Bayside Aluminium to have a significant impact on the cost curve.
Other reasons for this are -

- SA enjoyed tariff protection against imports until 1994 (up to 30%).
- This allowed Bayside Aluminium to fall into a comfort zone where costs did not matter which proved to be detrimental when tariff protection was removed
- In order to maximize margin, Bayside produced a wide range of products.
- This resulted in an extremely complex process with poor productivity and equipment utilisation
- All customers requests were entertained without focus on costs, profit margins and core business needs
- Too many equipment types producing a complex product range, resulting in high manning levels
- Below is an example of the excess capacity and disorganisation that was prevalent

Figure 2:

Bayside's Casthouse has low productivity levels, and poor capacity utilisation. (Typical of much of the South African Industry).

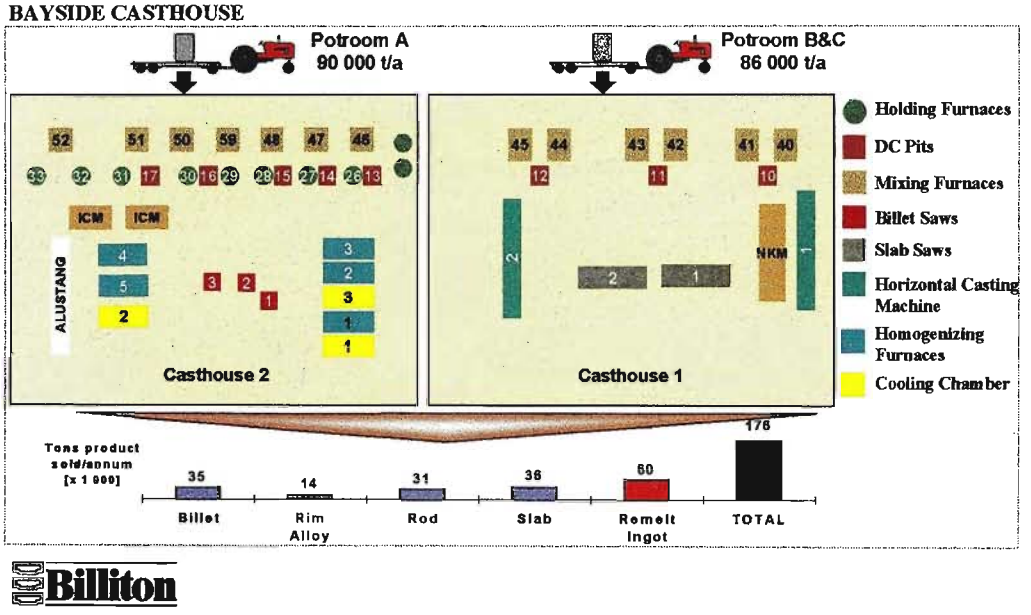
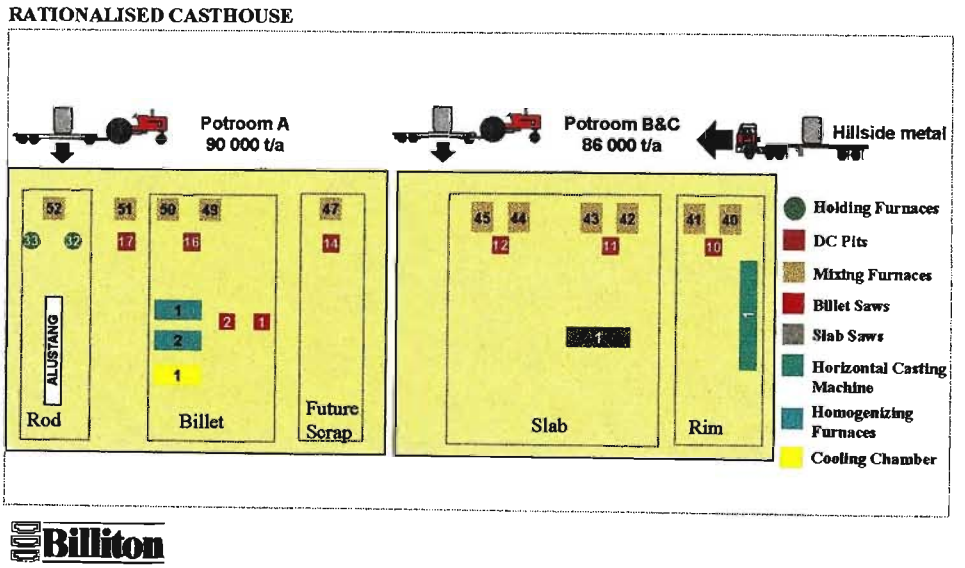



Figure 3:

Action will result in a rationalised /optimised Casthouse which is substantially more simple.




Below the example of the same plant, simplified after the reengineering process

Reference – Bayside Aluminium network – L /BG/PS/BGA. Author - J Wilson – 1999

- Poor equipment utilisation. (Having the capacity to make a product creates the desire to do so.)
- Financially inefficient especially in the Procurement and inventory areas
- Non optimal premium pricing structure.
- Unsophisticated scheduling system as a result of excess capacity.
- Poor logistical design as a result of ad hoc growth, driven primarily by domestic demand.

**Products which were simply not internationally competitive in terms of quality and price.**

The pricing of the products is done using the globally accepted price set on the London Metal Exchange, which is in US dollars.

Using a common currency for the price of aluminium, it is therefore easy to compare smelters with regards to cost base. Studies are also continually conducted to ascertain changes in cost base of individual smelters and are published on a quarterly basis.
Bayside Aluminium, being an old smelter, had a high cost base due to historical reasons. Bayside Aluminium had already conducted a cost saving exercise in 1995, however this was only to ensure immediate survival and not long term survival and growth. In reality Bayside Aluminium was still high on the cost curve and had not shown signs of reducing cost base. Competitors were seasoned in operating lean cost operations and already had a culture of continuous improvement and cost savings. Consequently Bayside Aluminium was continually climbing up the cost curve as competitors continued to reduce costs.

## 1.2 Bayside Aluminium's first reengineering exercise – the BRP (Bayside Renewal Process)

In 1994 Bayside Aluminium, known then as the former Alusaf embarked on a reengineering process called the BRP. At that point in time Bayside Aluminium's cost base was high and the plant was treated more as a means for employment rather than a business. The result was that Bayside Aluminium was uncompetitive and was in no position to

endure 'privatisation' or hold any sort of shareholder interest. Had nothing been done the smelter would face almost immediate closure.

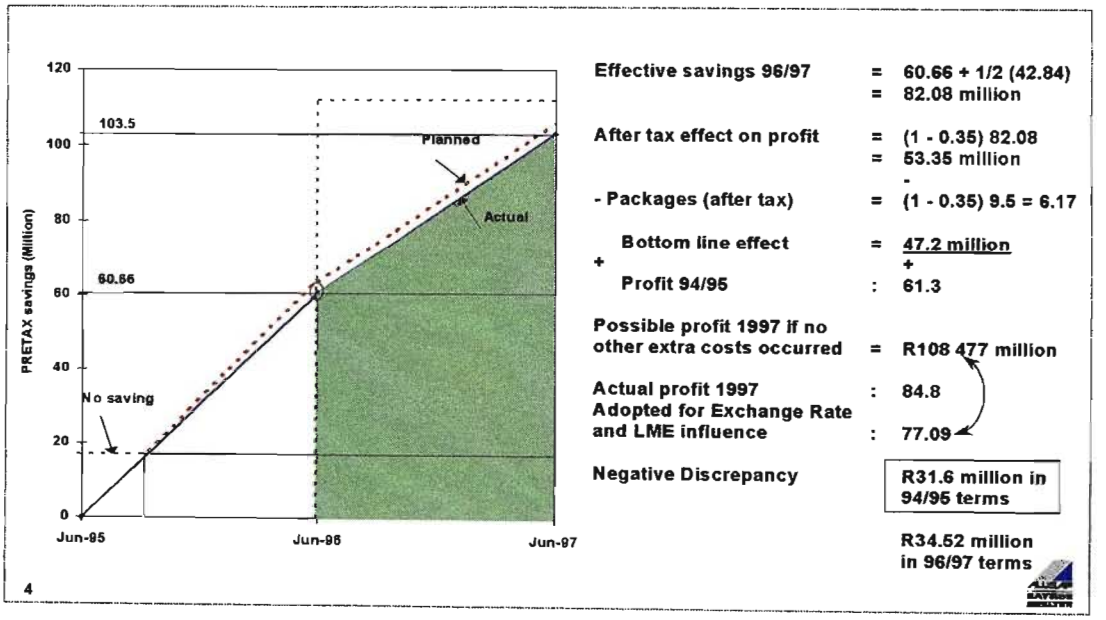
A consulting company, the Mckinsey Group was called in to facilitate the process and was given targets to aim for. McKinsey did a study of the requirements and submitted a proposal of cost savings to the value of $100 per ton aluminium produced. In addition to this they also promised a reduction of full time employees (FTEs) by half, from 3000 to 1500. Bayside Aluminium at that point in time was not organisationally prepared to do an in-house reengineering process and had to therefore call in the external consultant at a high cost. This issue is discussed in more detail in Chapter 3.

The process was hailed a success since it had facilitated the survival of Bayside Aluminium. However the savings that were predicted were all not realised. In fact only approximately seventy percent of the predicted savings were realised. However the greater portion of the seventy percent was what saved Bayside Aluminium from closure

Figure 4:

Contrary to popular belief, the After tax impact of the BRP savings are considerably less than the total claimed amount.

**REAL MECHANISM OF BRP - EFFECT ON PROFIT AFTER TAX**




The graph and calculations below illustrates the savings realised from the process

Reference – Bayside Aluminium network – L/BU/PS/BUI

Author – C Espach

Comments on the above graph:

- The BRP needed to save an effective R34,52 million in fixed costs in 96/97 terms in order to realise the targets set by Mckinsey
- Had the target been reached it would have placed Bayside Aluminium beyond survival and into competitiveness
- The targets set may have been too ambitious
- Another issue to consider is that when the consultants have left, will some of the new standards set slip back into the old methods of doing things, reducing the amount saved by further amounts.

The management of Bayside had to now critically analyse the reasons why the fortunes of the BRP process were slipping away. Basically what were the other costs creeping into the process and these reasons had be followed up and addressed.

Some of the conclusions reached were as follows

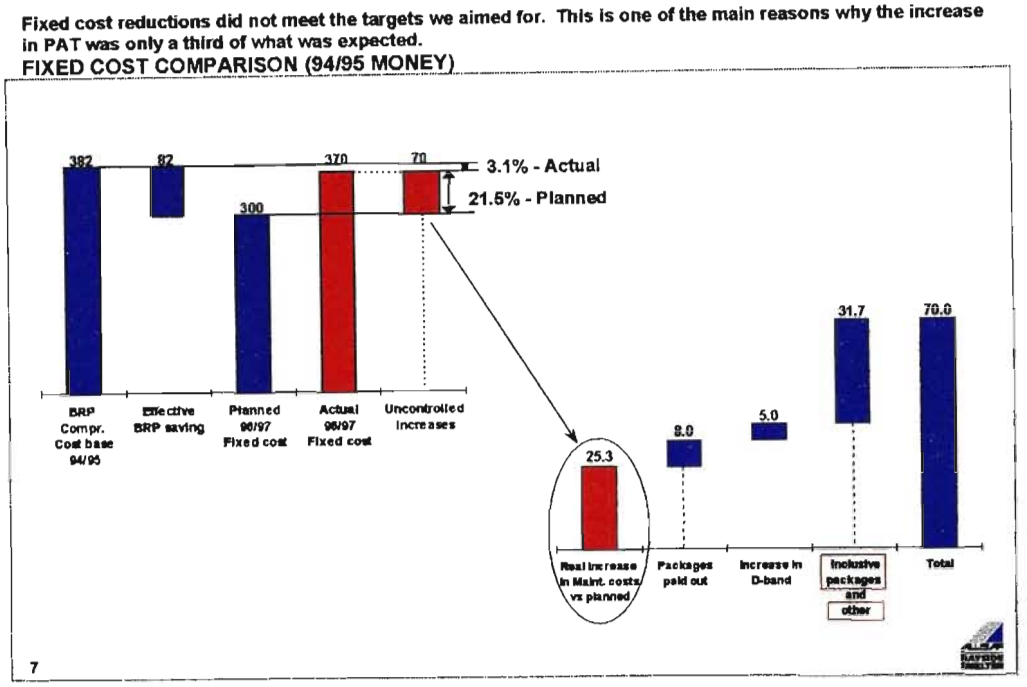
- Unusual price increases in variable raw material costs.
    - Bayside Aluminium unfortunately had little or no control over raw material costs since these were an overseas supply subject to currency fluctuations
- Increases in raw material specific consumptions.
    - This indicated a lack of process control and needed to be addressed operationally
- Inclusion of the total package concept. (Transport, housing etc. 27% increase on scheduled labour bill.)
    - Bayside Aluminium was one of the first companies to have embarked on the all-inclusive package deal for employees. Basically Bayside Aluminium distanced itself from all types of subsidies and grants but included it into employee's packages. This in effect took away the need for the extra administrative burden that companies usually carry in order to maintain such systems for example housing.
- Drastic increases in contractor spending.

- With the reduction in FTEs, employees panicked and brought in contractors to do the jobs.
- These contracts were however not cheap and not well negotiated. As a result Bayside Aluminium's costs became more uncontrolled.
- Procurement practices needed review urgently
- **LACK OF CONTROL!**

- Drastic increases in the total maintenance costs.
  - Poor maintenance practices ensured that the plant could not do without extra capacity
  - Bayside Aluminium would have to invest heavily over the next few years in order to get the maintenance effort more aligned to world class practices
- Appointment of technical people to maintain SAP etc.
  - For Bayside Aluminium to become world class, it would need world class systems, which would enhance Bayside Aluminium's competitiveness position in the long term. Bayside Aluminium would then need the skills and infrastructure to maintain these systems and would therefore have to invest in costly IT resources.

A closer analysis of the financial summary indicates that other costs factors had arisen causing the effect of the BRP to be undermined. This problem had to be addressed sooner than later or else the company would reel back into the same position it was which could again prove detrimental.

Figure 5:




Reference - Bayside Aluminium network – L/BU/PS/BUI

Author – C Espach

Above is a graphical analysis of the financial summary of the BRP

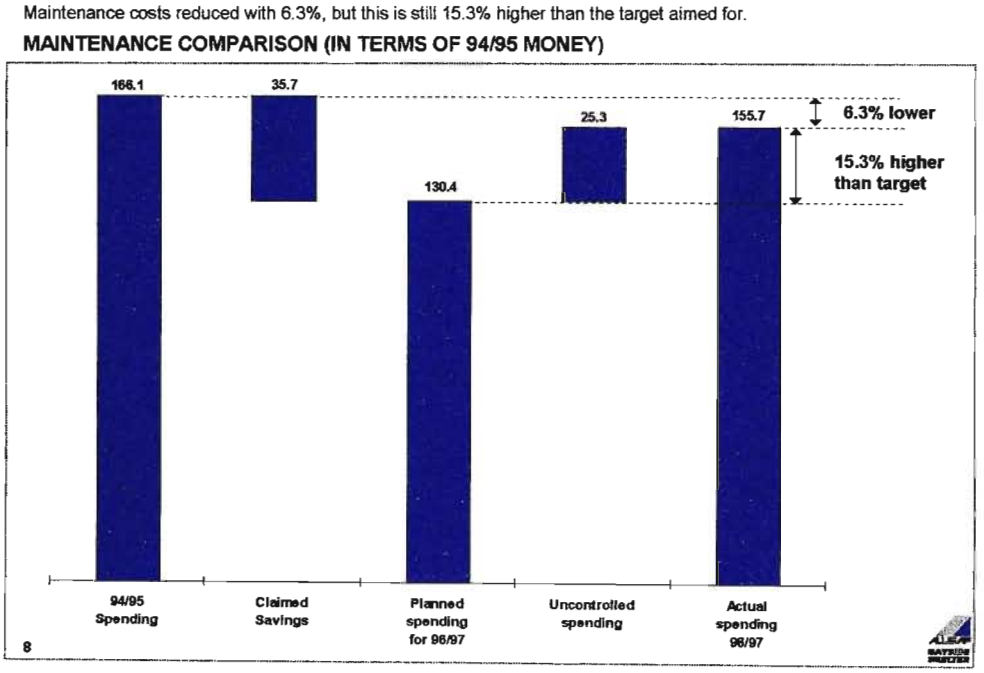
An analysis of the graph above illustrates

- All figures calculated in dollars per ton
- Effective BRP savings – 82 $/ton was the amount required to be saved to bring the smelter to a cost base of 300$/ton
- However as can be seen from the graph, the costs in the very next financial year rose to 370$/ton instead of remaining at the required post BRP figure of 300$/ton
- Uncontrolled, unplanned or unexplained costs amounted to 70$/ton which was 82 percent of savings from the reengineering exercise
    - The would make the BRP exercise negligible if allowed to continue
- However an explanation and analysis of the 70$/ton seen in the adjoining graph was made up of remuneration packages and maintenance costs. Remuneration packages in any organisation would have a one year payback since the position that paid the package would be removed from the company organograms therefore making it a

medium to long term saving to the company. This will hold true provided the position is not filled at a later stage or other resources are not brought in to continue the duties of the missing incumbent for that particular position.

- Maintenance costs made up 25% of the 70$/ton which amounted to 17,5$/ton. This was a serious issue since the increase in cost was not predicted during the BRP process. Therefore something had to urgently be done to arrest this cost. Maintenance costs had to be analysed and addressed as a matter of urgency.
- Further analysing the maintenance costs it can be seen that the maintenance costs reduced by 6,3%, however were still 15,3% higher than the target. This would cause overspending immediately and would escalate on a continual basis with external effects for example petrol price increases or the weakening of the rand etc
- The graph below displays the effect of the maintenance cost increase

Figure 6:

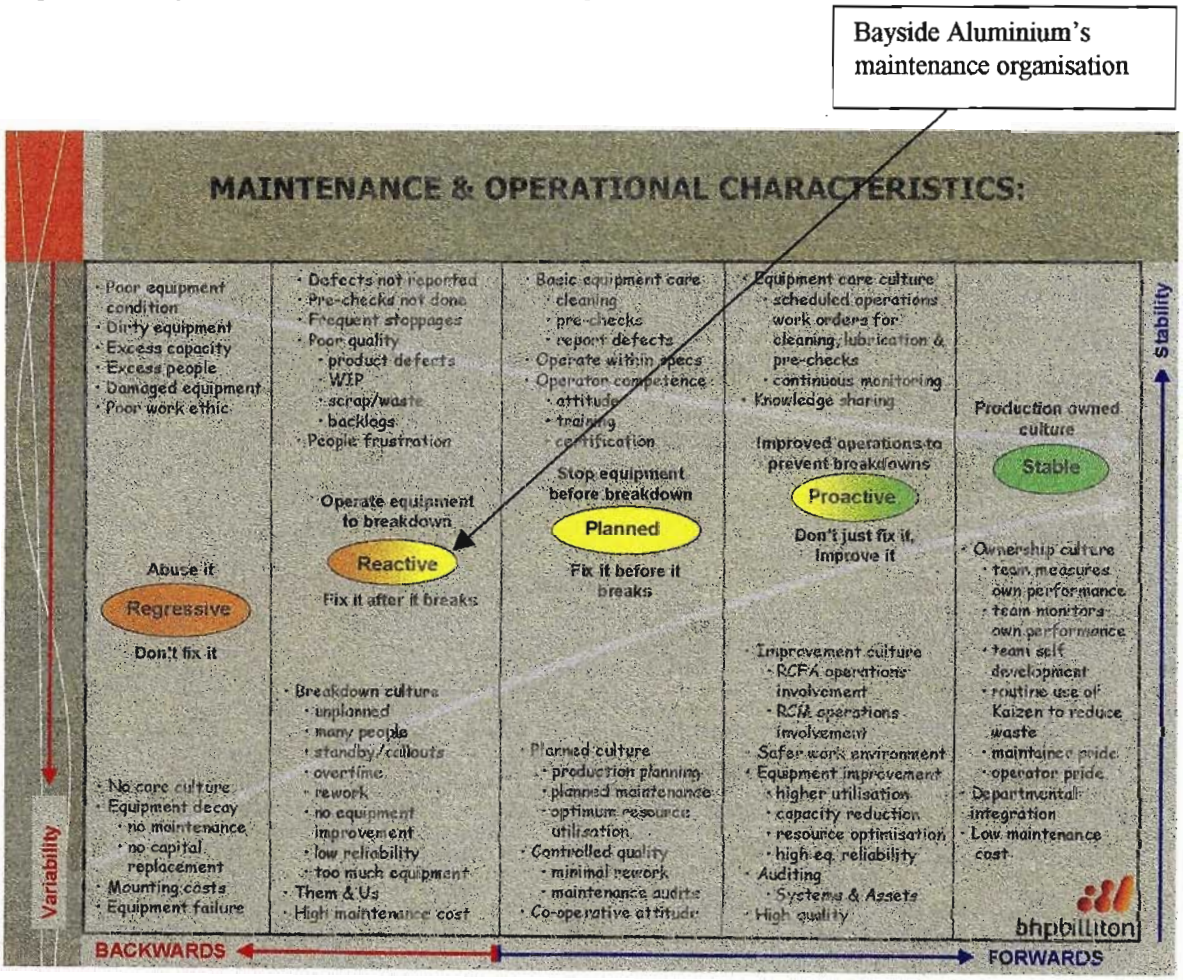



Reference - Bayside Aluminium network – L/BU/PS/BUI

Author – C Espach

One of the reasons for high maintenance costs was Bayside Aluminium's ability to perform maintenance on a mature level. This can be illustrated by the figure below, which illustrates where Bayside's Maintenance effort rated on a maturity chart.

Figure 7: Bayside Aluminium would at that point in time rate at the description "Reactive"




Reference – Bayside Alumninium network - L:\Be\Ps\Bem\Journey to Maintenance Excellence
Author – S Visser - 2001

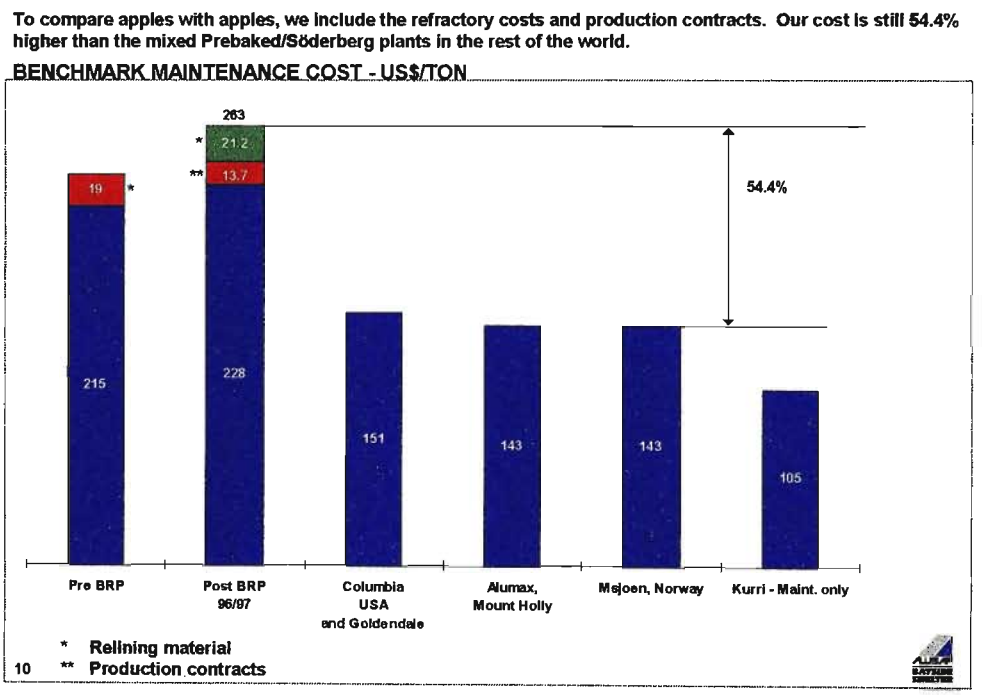
Being a reactive maintenance team would ensure high costs and the organisation would never be able to arrest costs as long as it does not climb up the maturity curve.

Since maintenance was the main area of concern for the uncontrolled in crease in costs, it was decided to perform maintenance benchmarking in order to ascertain whether Bayside

Aluminium's maintenance costs were in line with world standards. It would also explain whether the increase in maintenance costs was justified.

- The benchmarking exercise was carried out using smelters that had similar capacity outputs as Bayside Aluminium and had similar technology, that is to attempt to compare 'apples with apples'
- Cost comparisons were carried using real time costs, excluding capital investment, that is, focus was maintained on operational maintenance costs rather than plant upgrades, which could skew the financial figures

Figure 8:




- Above is the graph benchmarking costs with other smelters

Reference – Bayside Aluminium network - L/BU/PS/BUI

Author – C Espach

An analysis of the above graph illustrates that

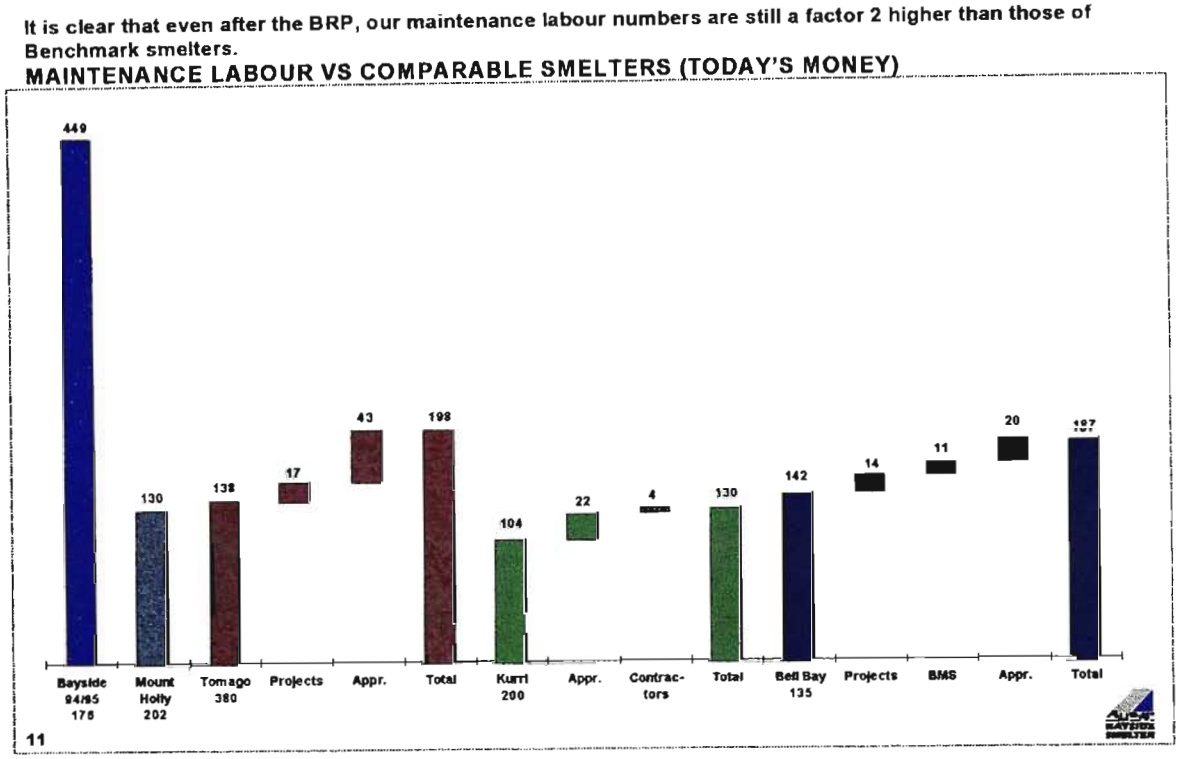
- Maintenance costs have increased after the reengineering process when in fact they were supposed to have reduced.

- There is a vast difference in maintenance costs of other smelters. Other smelters maintenance costs are on average almost half of Bayside Aluminium's maintenance costs.
- The Kurri Kurri smelter's maintenance costs are less than half of Bayside Aluminium's maintenance costs.
- This situation calls for drastic analysis and action before the situation once again spirals out of control.
- Bayside Aluminium's maintenance management needs to ask the question – "what are other companies doing right to achieve such low cost maintenance?"

One of the reasons why Bayside Aluminium's maintenance costs were so high was that the labour compliment to perform maintenance was still too high compared with other smelters. This represented a fixed cost and needed to be addressed. The question was - "how did other smelters do more quality maintenance with lower people numbers than Bayside Aluminium"

Below is an illustration of the maintenance compliment benchmarked with comparable smelters

Figure 9:



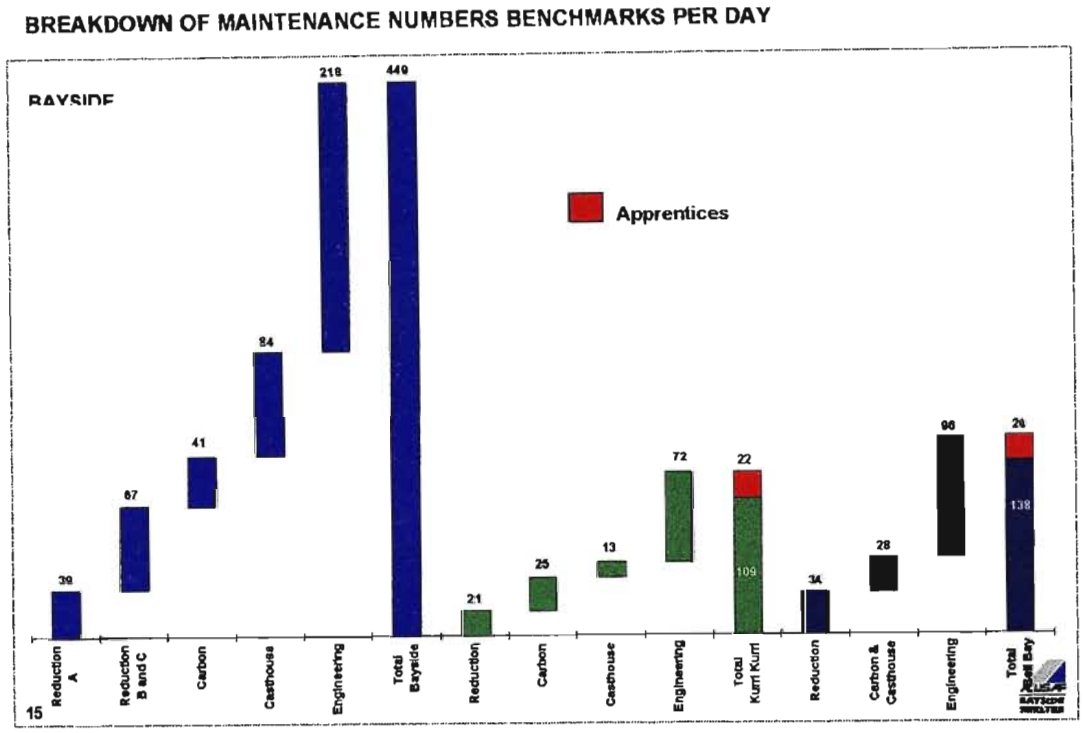

Reference – Bayside Aluminium network - L/BU/PS/BUI

Author – C Espach

The graph above illustrates

- Total compliment more than twice that of a comparable smelter.
- A total of four smelters were used and each of them are comparable to each other, illustrating that the comparison used was not biased.
- Contractor number have been included in the comparison which further illustrates a lack of bias.
- Bayside Aluminium's maintenance numbers and as a result, fixed costs was simply too high.
- The BRP reengineering process had minimal or no effect on the smelter's maintenance costs. In fact costs had increased uncontrollably after the reengineering exercise.

Figure 10:




A more detailed breakdown of the maintenance compliment benchmarking exercise is illustrated in the graph below

Reference – Bayside Aluminium network - L/BU/PS/BUI

Author – C Espach

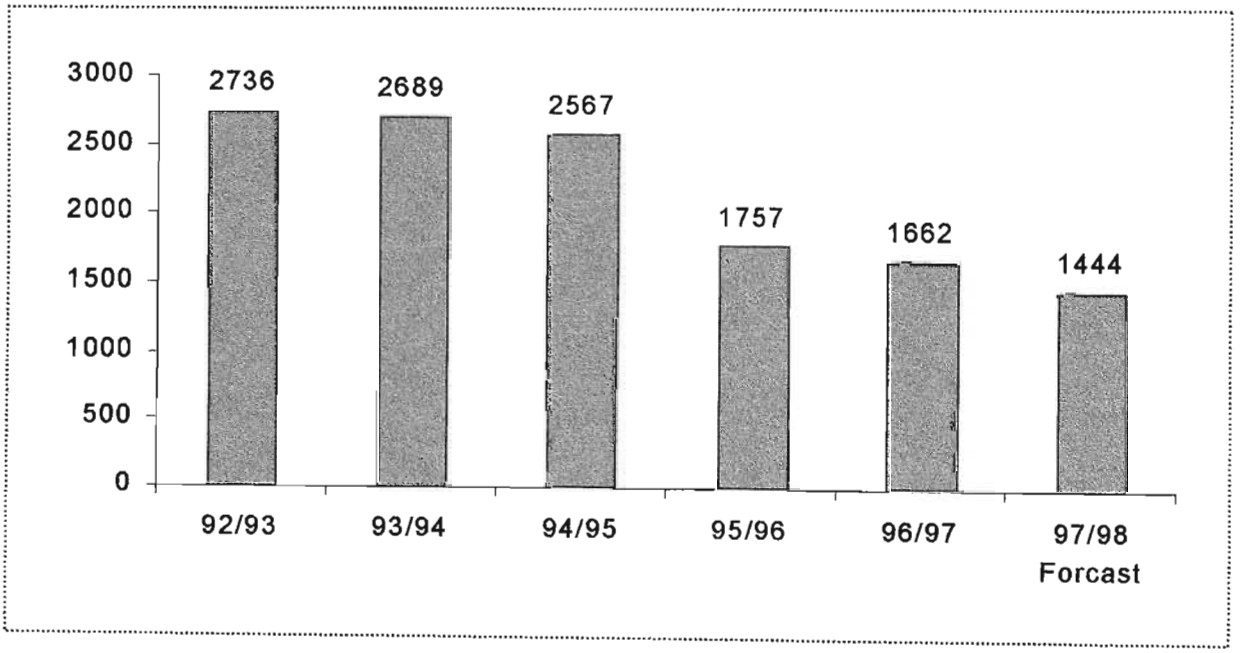
The above graph illustrates

- Each department on Bayside Aluminium is overcompliment by two or three times the figure maintained in a comparable smelter.
- Even without the extra capacity of training maintenance apprentices, Bayside Aluminium is still far overcompliment.
- It concludes that the entire maintenance philosophy on Bayside Aluminium has to be reviewed.
- It also concludes that sufficient work and thought processes were not in place for the maintenance organisation during the BRP reengineering process.

- Simply reducing maintenance numbers will not work at bringing the maintenance in line with world class smelters.
- The consultative process of reengineering did not identify the weakness in the maintenance organisation to the extent that it could jeopardise the efforts of the reengineering process.
- There was still a mammoth task ahead to bring costs in line with world class performance.
- The big question was – DID BAYSIDE ALUMINIUM HAVE THE TIME TO BRING COSTS IN LINE DURING NORMAL OPERATIONS OR WAS ANOTHER REENGINEERING PROCESS REQUIRED TO ACHIEVE THIS GOAL?

Aside from the reduction in Maintenance full time employee numbers, Bayside Aluminium also had to reduce it's total compliment since it was still well above similar smelters
Below is a graph of the FTE numbers through the BRP reengineering process

Figure 11:




Reference – Bayside Aluminium network - L/BU/PS/BUI

Author – C Espach

The above graph illustrates

- Bayside FTE numbers had reduced over a number of years through natural attrition.
- However the biggest impact of FTE number reduction was through the BRP reengineering process which reduced FTE numbers down to 1444
- The figure of 1444 FTEs was still too high a figure if Bayside Aluminium were to become an international player
- Full time employees constitute the fixed cost portion of any organisation, and organisations today cannot afford to have high fixed costs because margins are generally small and need to be managed closely due to
    - Increased competition
    - Increased costs
    - Higher pay levels for higher skill levels
    - Increased capital required for new technology and rapidly changing technology
    - Shorter lead times requiring quicker cashflow

Therefore Bayside Aluminium could not ignore this portion of the fixed cost base and needed to address this issue. One of the methods adopted to address this issue was by natural attrition. Whenever a position became vacant, the responsibilities of that position were distributed and the position was cancelled from the organogram.

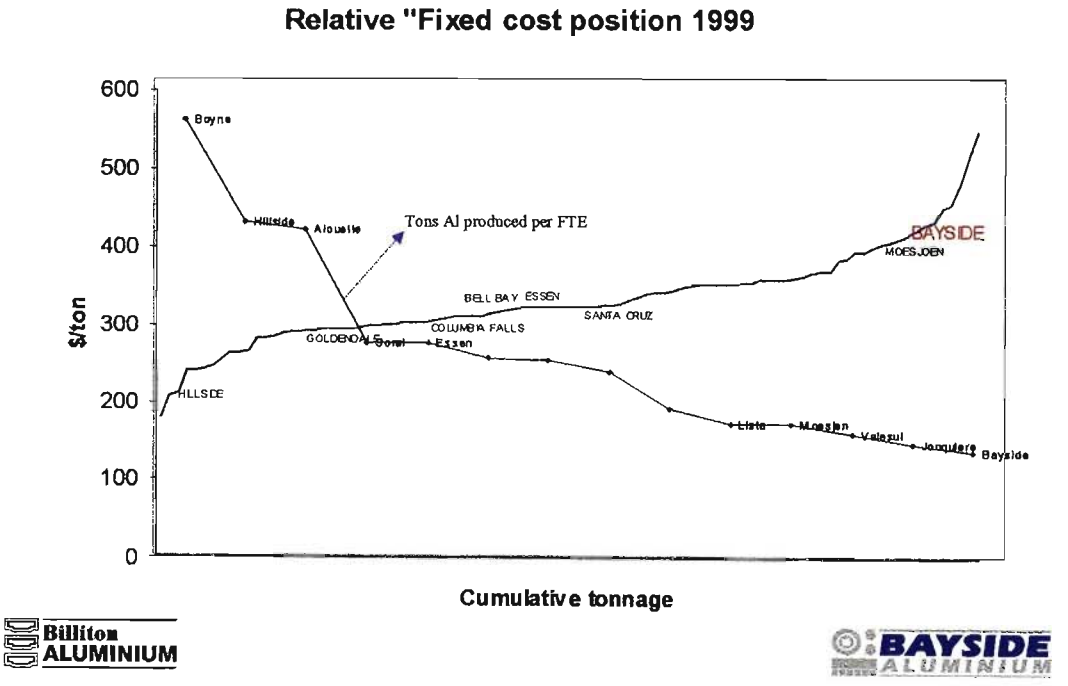
The problem encountered with the method of natural attrition was that for the process to work, positions needed to become vacant, then only could the plan come into play.

Another issue is that the process of natural attrition does not address the issues of process inefficiency. Addressing process inefficiencies was left up to the employees to resolve. However here was a workforce that had just completed a reengineering process who now perceives that there are too few people than before, and are now required to eliminate process inefficiencies. It was simply too tall an order! In fact more process inefficiencies crept in due to standards that fell away due to the amount of experienced personnel that left the company on retrenchment packages.

Therefore Bayside Aluminium needed a more efficient process to address the issue of personnel reduction to attempt to come close to competitors FTE numbers.

Another method to ascertain Bayside Aluminium's relative position is to assess the production capability of Bayside Aluminium versus number of FTEs and perform the same comparison with other smelters. This is illustrated graphically below

Figure 12:




Reference – Bayside Aliminium network

Author – J Wilson - 1997

The graph sloping downwards to the right illustrates

- Bayside Aluminium's tons aluminium produced per FTE is low
- Bayside Aluminium is the lowest in the world with regard to the above comparison

- Bayside Aluminium does have low installed capacity as compared with other smelters, however still has more FTEs to operate the low installed capacity
- **Bayside Aluminium has to do something in order to reverse the trend**

Once again Bayside Aluminium was in a dilemma and had to do something in order to reduce costs and to secure a long-term future. It was not a crisis at this point in time, however if not done in the short term, within five years, Bayside Aluminium would not be competitive and may even once again face closure.

Therefore in 1999 Bayside Aluminium embarked on a cost saving exercise called the CTG, that is, Close the Gap. **The reason it was called this was that Bayside Aluminium wanted to benchmark similar smelters of similar age and capacity, and try to bring costs in line with them or even better the cost base compared to them. Hence the term 'close the gap' - between themselves and other comparable smelters.** The average saving that needed to be achieved in order to be in line with benchmark was $100/ton of aluminium. The $100/ton was to be made up of employees positions, cost saving ideas, as well as eliminating wasteful processes or items of operations that would realise a cost saving without jeopardising the operation

The process was to be done over a month period with dedicated teams from each department conducting the process on each department's behalf. The first phase of the process was to identify the exact costs of each department. The team would then know exactly what figure to aim for in terms of savings. This would amount to approximately twenty percent of the budget.
Once the budget was known the team would need to "Map the Process", that is, review the process in an attempt to identify parts of the process that do not add value using the value chain principle.

While doing the above the benchmarking process was to take place as well. The team would contact the benchmark smelters and find out the process and staffing figures as well

as certain process procedures, to look for better, more cost-effective methods to perform certain operations.

High level involvement was incurred from the management team level and the teams did a presentation of progress to the General Manager on a weekly basis.

A summary of the results was that

- $60/ton aluminium was obtained from the CTG process. The other $40/ton was to be found via the procurement and contracts route.
    - Procurements and contracts in any organisation have to continually be reviewed in order to ensure that prices are in line with market trends. The days when long term commodity contacts were in place are long gone and competition has ensured that the company delivering the best value for money would become the preferred supplier.
- Also in doing the process Bayside Aluminium would need to reduce staff numbers from 1250 people to 950 people. Note that this figure of 950 is still not on par with benchmark smelters, but is still much higher than other smelters. Most smelters in first world countries operate a similar smelter with 650 people.
- Many waste sources had been identified and eliminated or streamlined. Waste can take many forms from solid waste, such as processed waste, to waste of company time. In both cases the company would have to bear the cost of waste. This is an unnecessary cost and money spent on waste could be put to better use elsewhere in the company or simply used to enhance the bottom line and in turn shareholder value.
- Bayside Aluminium moved down the cost curve after the exercise, but needs to ascertain whether the exercise placed Bayside Aluminium ahead of it's competitors.

## 1.3 Motivation for ascertaining whether the CTG process was a success

Bayside had gone through a lot of effort in embarking on the CTG process. It therefore had to be a success due to the proposed gains. It needs to be ascertained whether the gains achieved through the process were actually according to targets set for the process.

- This process is now fast becoming the route for other subsidiaries to follow suite to try to position themselves better in the market, thereby enhancing BHPBilliton shareholder value. Bayside Aluminium therefore becomes almost a pilot plant whose success in this process will be used to implement to other smelters or mines.
- Bayside Aluminium becomes one of the first companies to perform an in-house reengineering process successfully.
- The implications of branding a process as a long-term success are serious.
  If unsuccessful and only discovered later, it could affect other plants and cause problems for the BHPBilliton group.
- A major part of the process is the very sensitive issue of retrenching people.
  Success could mean reduced staffing levels and fixed costs. If unsuccessful then the experienced people that had left may not be available to rejoin Bayside Aluminium, therefore valuable skills could be lost. If unsuccessful there could be potential Union action, which could result in a multitude of problems and could threaten the survival of the company. The issue of how the Unions support was gained will be dealt with in Chapter 3.
- Does the plant still maintain stability or cost more because of instability due to the newer way of working?
  - The above question is a serious one, since if money is saved yet the plant process is handled poorly due to the changed situation, the reengineering process could be deemed a failure. This could cost Bayside Aluminium more money and reduce shareholder value rather than enhancing it.

The above report needs to be presented to Bayside Aluminium so that the company can ascertain the success of the process. Bayside Aluminium can then ascertain the areas where it had not been successful and may implement actions to try to regain the planned success in those areas.

Also Bayside Aluminium would be in a better position to advise other BHPBilliton plants embarking on a similar cost saving process of the potential areas of difficulty.

## 1.4 Value of the Research

The management question would be – Would the proposed retrenchment process have the desired results into the medium term in order to ensure the long-term survival of the company? The results that would be desirable are –

- Lower permanent fixed cost base
    - Bayside Aluminium is obviously conducting the process for financial gains and long term benefits.
    - The financial gains have to be in line with benchmark companies for the results to be effective. The aim of the results is to also be on par or improved on the benchmark smelters. The reason for this is that in the same financial year the benchmark smelters would also have reduced their costs and moved further down the costs curve by the time Bayside Aluminium's reengineering process was complete. Bayside Aluminium would therefore have to perform better than current target in order to be on par with the benchmark smelters.
- A move down the cost curve to be on par or improved on benchmark smelters. It must be stated that to be an improvement on benchmark smelters would be a stretch target for Bayside Aluminium. The reason is that Bayside Aluminium was not used to performing such a process in-house and would therefore become used to the continuous improvement culture only with time.
- Reduction in staff numbers towards benchmark to increase the unit tons per employee production figure.
- Elimination of unnecessary activities using the mapping process. More detail is provided in Chapter 3 regarding the mapping process which is a simple yet useful tool to critically analyse any process and eliminate the wasteful parts of the process, thereby saving costs.

## 1.5 Research Objectives

- We need to answer the question - Did the retrenchment process have the real time financial benefits and are those benefits sustainable into the future?

In reality does the company become a lower cost producer and move down the cost curve. Also does it move down the cost curve significantly enough to go ahead of it's competitors?

- Does the process change the organisations modus operandi, that is, the way it conducts it's business, in order to sustain the results of the retrenchment process into the future?
- Is "Mapping the process", using the value chain an appropriate tool to identify waste in the organisation?
- Is it appropriate to benchmark for competitors for the retrenchment process
- Would the process of natural attrition take too long for the organisation to reduce staffing levels?

## 1.6 Limitations of the study

- Financial information spans over the past five years. During this time exchange rate fluctuations have occurred which has affected the value of the currency. Therefore figures quoted would have to assumed in context with the financial year quoted. More importantly, there is a need to focus on the principles displayed rather than exact figures quoted.
- Formats for illustrations used through the thesis are applicable to BHPBilliton Bayside Aluminium. These however can simply be adjusted to be applicable in any industry.

## 1.7 Structure of the study

### 1.7.1 Chapter 2 – Organisational reengineering theory

Chapter 2 addresses the issues of theory and information required to be understood or sourced before planning an engineering process. It also displays the importance of obtaining metrics that are able to arrive at the real costs to the business. Further theory on benchmarking and networking are explored. Finally real procedures that were developed by Bayside Aluminium during the reengineering process are displayed.

### 1.7.2 Chapter 3 – The planning process

Chapter 3 called the Planning Process details the steps to planning and executing a reengineering process. The process flow may be applicable to any organisation and the principles of the process flow are emphasised. Towards the end of the chapter emphasis is placed on the people factor as well as Union participation.

### 1.7.3 Chapter 4 – Results and discussion of the reengineering process

Chapter 4's discussion is based on the results achieved at Bayside Aluminium. A critical view is taken on the results achieved based on different areas of the reengineering exercise. It is important to analyse the conclusions reached for the various facets of the study as detailed in this chapter.

### 1.7.4 Chapter 5 – Recommendations

The chapter on recommendations focuses on the real issues that need to be taken into account when embarking on a reengineering process. It also details the need for the organisation to implement continuos improvement systems, like benchmarking for example. However the overriding issue that any organisation needs to consider regarding the issue of reengineering is the issue of company strategy and what place a reengineering exercise has in the company's long term business plan.

## 1.8 The end results - Exploring the effectiveness and benefits obtained from the retrenchment process

- Clearly indicate the success of the process in terms of permanent financial gains
- Clearly indicate sustainability of the process
- Explore competitiveness of global fixed cost reduction
- Indicate future need or viability of such a process
- Are incompetence issues addressed in this process?
- Does the process eliminate wasteful activities from the organisation that do not add value to the organisation?
- Is there operational stability in the organisation during and after implementation of the process?

## 1.9 Important Questions that need to be asked

- Did the retrenchment process have the real time financial benefits?
- Are those benefits sustainable into the future?
- Are "Mapping the process" using the value chain, benchmarking and networking appropriate tools to identify waste and ensure continuous progress in an organisation?

## 1.10 Research methodology

- Explanation of the terms and tools used associated with the reengineering process, for example, calculation of economic profit to gauge need for the process.
- Explanation of the previous reengineering process at Bayside Aluminium and elaborate on the expectations and results of the reengineering process.
- Extract financials before the process and after the process and analyse the difference. Comparison whether it is in line with required targets.
- Analysing gains that were made in mapping the process by choosing a process and analysing it. Analysing the results to see if any gains had been made using this process.
- Explanation of the use of the Brook Hunt curve to benchmark comparative smelter costs.
- Continual use of the Brook Hunt curve to see whether Bayside Aluminium actually did move down the cost curve. Perform final analysis to conclude whether the process had the desired impact of moving Bayside Aluminium down the cost curve.
- Analyse the data regarding the system used to select retrenched employees.
- Analyse the plant technical process results before the CTG reengineering process and after the process and do comparison.
- Analyse staffing numbers and check whether Bayside Aluminium had reached required target numbers in all categories. Also analyse the impact of reduced staff numbers on the process and also whether these numbers are sustainable. Also determine whether hired labour has been used to substitute for permanent employees.
- Analyse Union involvement in the process and what Bayside Aluminium did to win the support of the Unions.

- Evaluate procedures and communication methods used to ensure consistency and an informed workforce.

## 1.11 Summary

This chapter provides a history of the process leading up to the reengineering process. The company was compelled to enter into a reengineering process using consltants. This displayed the maturity of the company to implement such a process. This process was performed for the survival of the company and would attempt to position the company for further operational improvements. However the second reengineering process was done in order to position the organisation into long-term survival and current business success. What is also explored is the questions relating to the shortfalls of each process and opens up a discussion in later chapters as to the reasons behind these shortfalls, and recommended steps to prevent these shortfalls for future processes.

# Chapter 2
# Theory

# 2 Organisational reengineering theory

## 2.1 Introduction

This chapter will provide a brief overview of Bayside Aluminium as an organisation, it's core values and an idea of Bayside Aluminium operating systems. It will also focus on the theory, tools and methods used to facilitate the reengineering process. The chapter provides a profile of the company, Bayside Aluminium, and the historical business background.

Various concepts are discussed regarding business methods and tools used by Bayside Aluminium to conduct their business. It also illustrates various cost components that are identified in the cost structure and their relative weightings in terms of expenditure.this is important for any organisation to understand if any reengineering process is to be embarked upon.

The Brook Hunt graph is used extensively during the reengineering process. The Brook Hunt graph is used as a high level benchmark to illustrate to the organisation what their comparative position is as compared to other similar organisations. The Brook Hunt graph is also used to serve as a dashboard to continually monitor where the organisation is positioned with regards to the world benchmarks.

Benchmarking is also a concept that is explored in detail. An organisation needs to entrench a culture of benchmarking in order to make continuos progress. It also needs to ensure that the benchmarking process does not infringe on core business. Benchmarking however needs to be placed in perspective and in terms of ensuring similar comparisons and comparing "apples with apples".

Also explored is the concept of using consultants in the organisation to facilitate the reengineering process.

Finally, a copy of procedures used to facilitate the process is included towards the end of the chapter.

## 2.2 Bayside Aluminium profile

If any industry symbolizes the value of Richards Bay as a major African port, it is the two giant aluminium sister smelters: Hillside and Bayside Aluminium. Both receive their principal raw materials through the port and then export many of their products via the same port to customers worldwide.

Bayside Aluminium was the town's very first industry back in 1971 and the catalyst for major economic growth. Thus Richards Bay owes its very existence to aluminium and the once sleepy fishing village has become the headquarters of South Africa's aluminum industry.

Previously known as Alusaf, Bayside Aluminium is now owned by the global BHP Billiton natural resources group and has successfully repositioned itself over the past few years as a significant player in the global marketplace. It is the third largest industrial consumer of electricity in South Africa.

Producing 180 000 tons of aluminium per annum, Bayside Aluminium employs 1 000 people. Finished products include: billets for extrusion; rim alloy for wheel manufacturers; rolling ingots for the manufacture of anything from tin foil to cooking utensils and rod for the manufacture of cables and conductors. Bayside also sells some of Hillside's ingots onto the domestic market for re-melting and processing.

While Hillside produces only re-melt ingots, Bayside Aluminium focuses on value-added products and therein lies its strength. Major domestic clients include Tiger Wheels and Hulett Aluminium. Around 30% of Bayside Aluminium products are exported while the rest is sold onto the Southern African market.

Aluminium is used extensively in aircraft construction; building materials; consumer durables such as air conditioners and chemical and food processing equipment. It is highly corrosion resistant and an excellent conductor of heat and electricity.

Bayside Aluminium's success has not been achieved without dedication. There has been a constant quest for technological excellence and Bayside Aluminium is

committed to the well being of its workforce both at work and in the community. Bayside Aluminium invests a large amount of capital annually into community capacity building, focusing specifically on education and rural upliftment projects. Its corporate social investment programme is managed by the Zululand Chamber of Business Foundation, which has been internationally recognised for its achievements in the Zululand region.

Bayside Aluminium is part of the BHP Billiton global resources group. The BHP Billiton Charter says that the group will achieve sustainable success only if it:

- provides superior returns for its shareholders
- its business partners benefit from the relationship or association
- the community values it as a responsible corporate citizen
- its employees go to work with a sense of purpose and leave with a sense of achievement.

These success indicators show the commitment that BHP Billiton has towards community development. Community development for BHP Billiton is an integral part of our business strategy and the CSI portfolio.

Over the past few years the company has undergone a dramatic business renewal process aimed at ensuring its long-term survival. Modern business systems (SAP and MES) have been put into place. An upgrade of the smelter's carbon bake furnace was completed in 1999 using state of the art Alusuisse technology. Bayside Aluminium continues to invest heavily in renewing and upgrading integral parts of the smelter in order to retaining the position it has in the global and domestic markets.

Bayside Aluminium has ISO 9002 accreditation and was re-awarded its fifth NOSA star in December 2000. In March 2001, it was awarded the NOSCAR trophy for the first time in the smelter's 30-year history. This is NOSA's highest safety achievement.

There is no doubt that Bayside Aluminium has successfully positioned itself as a force to be reckoned with on the global market.

Reference – D Van Staden – Bayside Aluminium

## 2.3 Bayside Aluminium's Core Values and Objectives

- Health, Safety and Environment first

We are committed to an ongoing programme to improve conditions in the workplace and minimise environmental impact.

- Empowerment through training

Decision-making should be kept as close to the shop floor as possible. To meet this objective, we remain committed to providing quality training on issues directly related to the process and on some of the softer issues, such as team work, problem solving and effective delegation. We will facilitate decentralised leadership by mentoring, coaching and developing our people.

- There is always a better way to do things

We strive to continuously improve our organisational structures, leadership style, quality systems, customer services and production processes at a rate that will put us ahead of our global competitors.

- Focus on core business

We will focus on those activities that add value.

- Integrity

We are committed to lead by example and to treat each other as we expect to be treated ourselves. Our business will be conducted in an open, honest and ethical manner. The contribution of every employee is regarded as equally important.

1. Save 5% of fixed costs per year through Continuous Improvement ($23/ton/pa or $67/ton over the next three years):
2. Save additional costs over the next 3 years through focused initiatives

a) Reduce the cost of major Raw Materials and Power

b) Reduce Input Cost by 10% (excluding major raw materials) in dollar terms through focused Procurement

- Minor raw materials and bulk consumables
- Production and maintenance spares
- Jobbing and minor works contracts.
  - Rationalise the number of contractors being utilised: Contractors have become too much of a way of life at Bayside Aluminium

c) Reduce maintenance costs by 5% per annum

d) Improve productivity from 118 tons/fte to 176 tons/fte (considering reduction capacity only)

- Increase tons of Value Added Products produced to more than 215 000 tons per annum while rationalising the amount of equipment and improving personnel productivity:
- Optimise net premiums by supplying 98% of the Domestic Market needs in a rationalised product range and exporting the balance of the Value Added Products produced:

The Marketing strategy in its simplest form is to:

- Produce a rationalised product range to machine capacity.
- Dominate and grow the domestic market.
- Make the balance of the products to stock, for the export market.

The objectives to support this strategy are to:

- Improve Bayside Aluminium's status as a reliable supplier of quality products.
- Improve net premiums by fully understanding the customer's value proposition.

Reduce packaging and logistical costs by working with our customers

Reference – Bayside Aluminium Business Plan excerpt - 1999

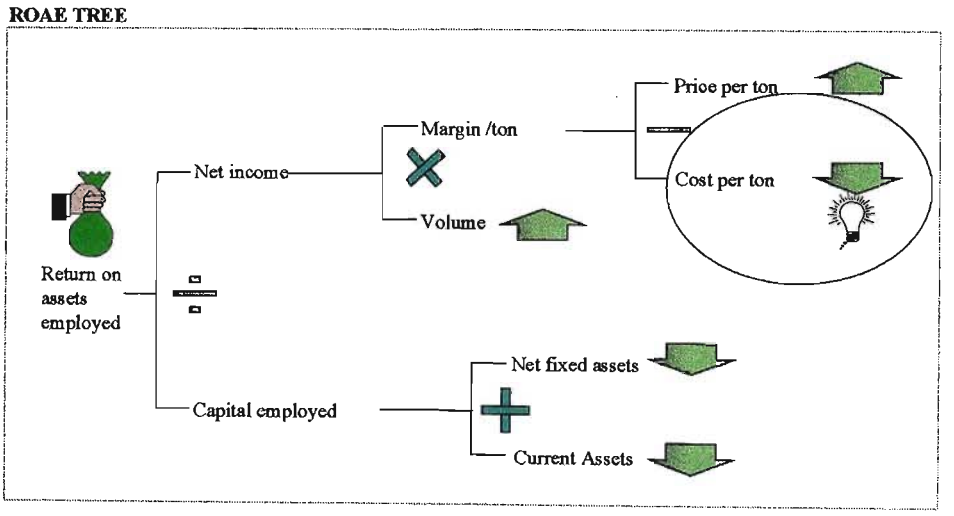
## 2.4 The cost comparison unit used by all smelters - $/ton aluminium

Since all aluminium is priced and sold in US$ and in tons mass via the London Metal Exchange, it is only apt that the basis used for comparison of costs would be in dollars per ton of aluminium.

Furthermore, it makes it that much easier for an organisation to ascertain the breakeven costs if a common base is used. Below is an illustration of the method which is used at Bayside Aluminium, which in theory should be similar to the method used at other smelters in order to calculate the return on investment

Figure 13:

The ROAE tree provides good direction




Billiton

Reference - Bayside Aluminium network – L /BG/PS/BGA

Author - J Wilson – 1999

The ROAE tree above illustrates the following

- How breakeven cost is reached
- How profit margins are determined

Economic profit improves as a result of:

- Increase net premium on products sold.

    - Bayside Aluminium could only do the above until the breakeven costs for the transport advantage were realised. Any further increase in net premium would price Bayside Aluminium out of the market and allow competitors to capture the market

- Reduce costs by improved procurement and maintenance practices, contractor number reduction, specific consumption reductions (operational efficiency) and continued full time employee reduction.

    - Organisations today need to continually challenge the way they do business. This can only have improved results with a continual reduction of costs.

- Increase metal production output. Provided the extra metal has a market and can be sold immediately, this contributes to economic profit.

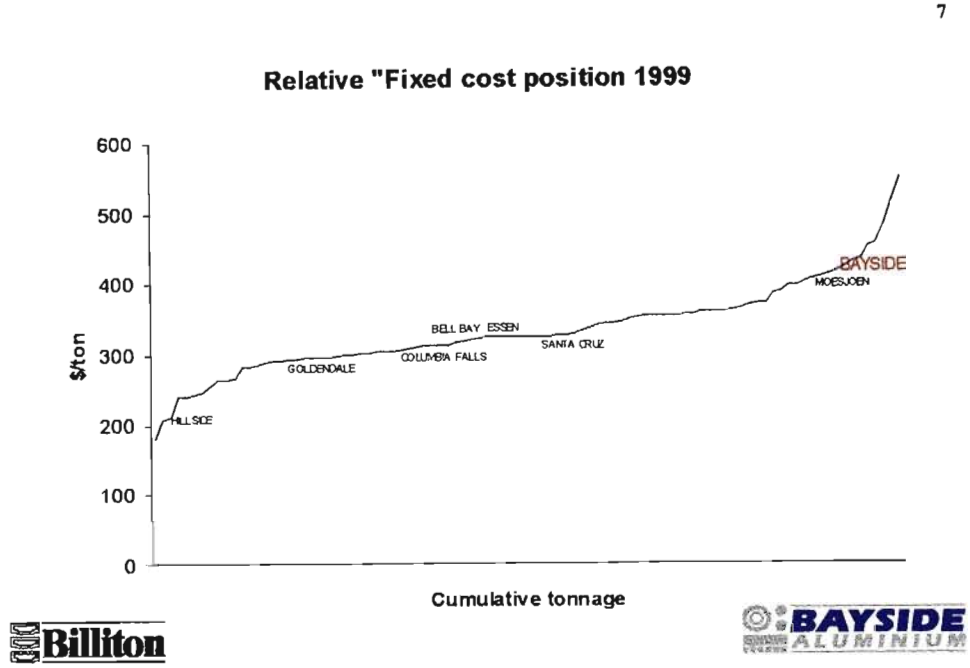
- Manage fixed and working assets (capital discipline and working asset management).

    - Organisations need to spend only the money that needs to be spent on capital projects and upgrades. Also gaining the maximum out of every piece of installed capacity without further capital injection will counter fixed costs and add to economic profit.

## 2.5 The Brook Hunt cost comparison graph

- The Brook hunt report is a report illustrating the cost comparisons of different smelters.
- All cost comparisons are done using the dollar per ton base
- Information integrity - Reports are published monthly, therefore most cost comparisons contain the latest information

Figure 14:




Internet Reference 2 – Brook Hunt reports

The graphical representation above illustrates

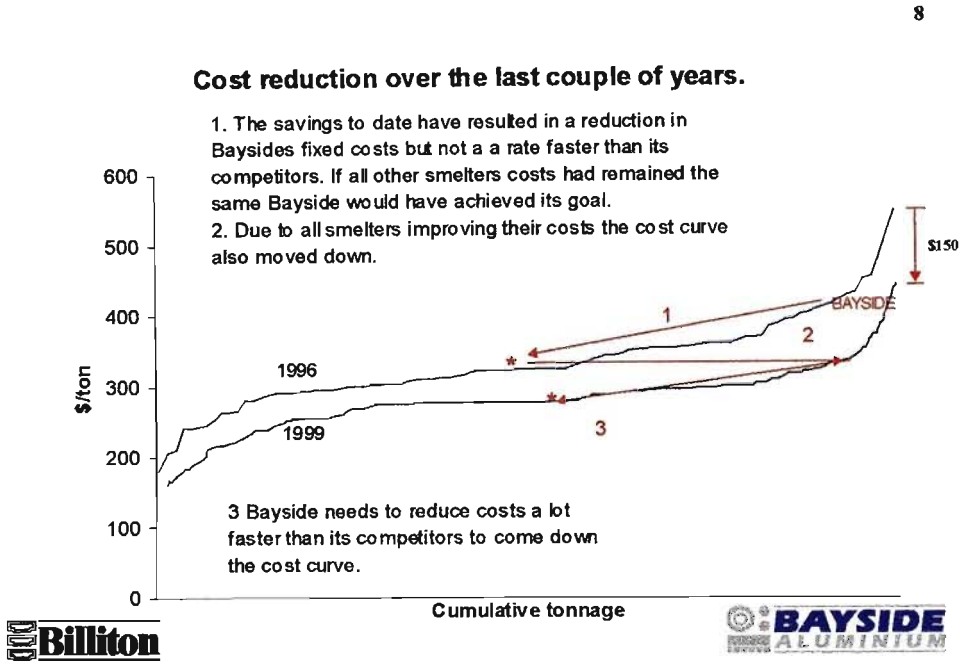
- Smelters of comparable characteristics have available and comparable data.
- Bayside Aluminium is far up the cost curve. It is also clear that Bayside Aluminium is at the point where the costs almost become exponentially high on the curve.
- The cluster of smelters are at least able to average 300$/ton fixed cost base which at that stage looked like an intimidating figure to achieve.
- The smelters used to benchmark costs against were similar to Bayside Aluminium in terms of technology, output and plant layout.
- If other smelters reduce costs and Bayside Aluminium does nothing exceptional to reduce costs, Bayside Aluminium will move further up the cost curve.
- As other smelters become smarter at operating, the curve will move downwards, creating an even bigger margin of fixed costs.

We can also look further at the cost reduction potential that Bayside Aluminium has. A point to note is that as any one organisation reduces costs to move down the cost curve, other organisations are also reducing costs and will also continually move down the cost curve. The other point to note is that a lot of organisations in other countries have been

doing this process for two decades and as a result have this culture entrenched in their organisations at all levels

The graph below illustrates this point clearly

Figure 15:



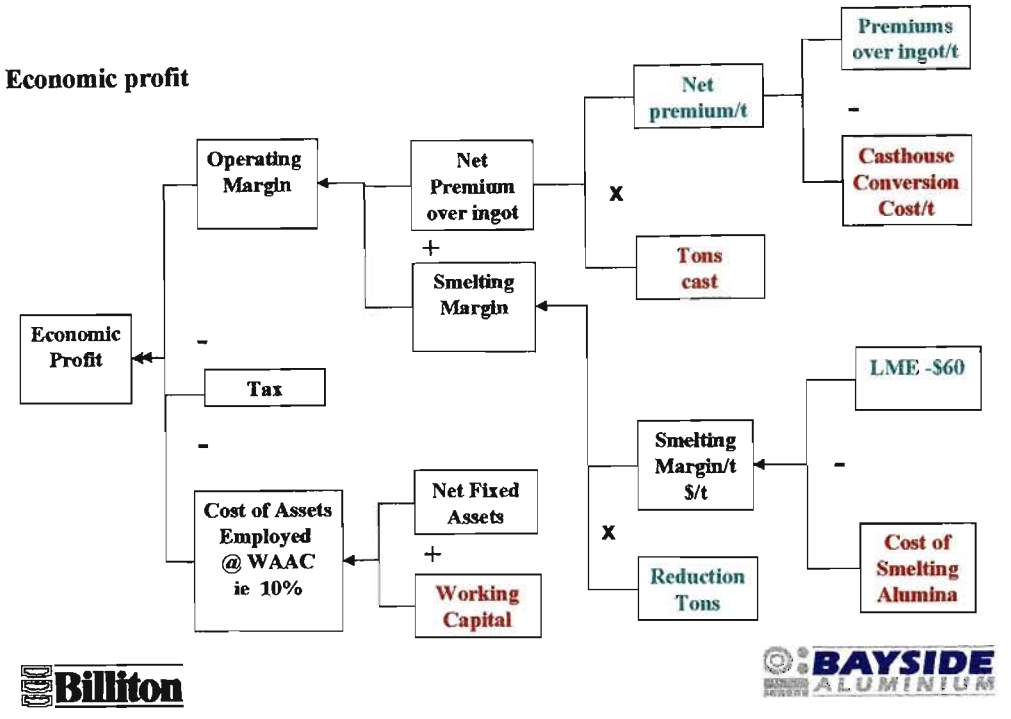

Internet Reference 3 – Brook Hunt reports

- The savings to date have resulted in a reduction in Bayside Aluminium's fixed costs but not a rate faster than its competitors. If all the other smelters costs had remained the same Bayside Aluminium would have achieved its goal.
- Due to all smelters improving their costs the cost curve also moved down.
- Bayside Aluminium needs to move faster down the cost curve in order to get ahead of it's competitors

## 2.6 Calculation of Economic Profit

The flowchart below explains the overall method used by Bayside Aluminium to calculate economic profit

Figure 16:




Reference - Bayside Aluminium network – L /BG/PS/BGA

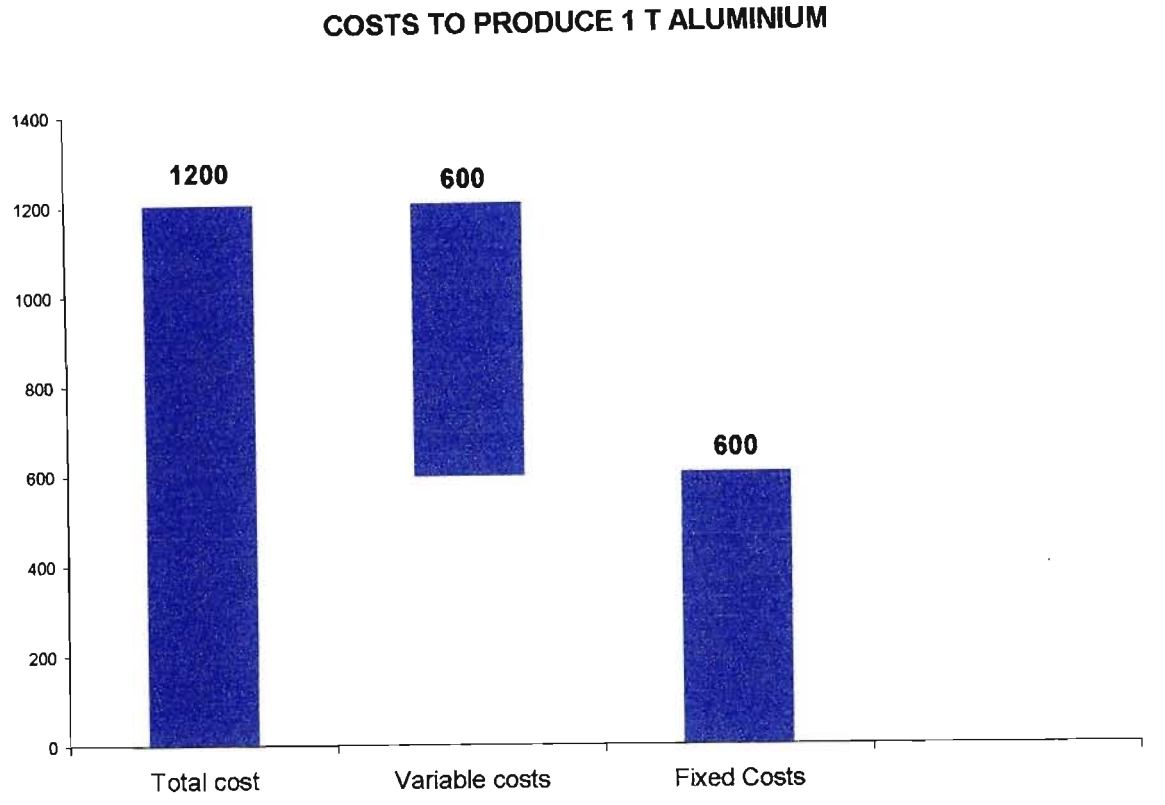
Author - J Wilson – 1999

Therefore it can be seen from the above chart that the calculations of economic profit would take into account all costs including tax and costs of assets employed. This is in line with the method used by other smelters around the world to calculate economic profit used. This illustrates once again that comparison techniques are consistent with similar units, which would present a clear indication of relative position with competitors.

Returning to Bayside Aluminium's financial situation, it is required that the cost per ton of aluminium be known in order to understand the relative cost position of Bayside Aluminium

Below is an illustration of the cost per ton of aluminium of Bayside Aluminium

Figure 17:




Reference - Bayside Aluminium network – L /BG/PS/BGA

Author - J Wilson – 1999

The graph above illustrates

- The total cost per ton of the smelter is 1200$ per ton aluminium.
- The fixed cost portion or rather the 'controllable' costs position is at 600$ per ton Aluminium
- Bayside Aluminium's total costs of 1200$ per ton Al or the breakeven cost to produce one ton of aluminium is too close to the price of aluminium. Therefore the premium on aluminium sold would have to be much higher to ensure a healthy profit.
- The other issue is that the price of aluminium is not fixed and like all commodities could swing in the downward direction, causing it to come precariously close to the breakeven cost point. This could cause an extremely small profit margin and will impact on the wellbeing of the business as well as cause concern to the shareholders.

- The bigger problem is that if the price becomes so low that the price of aluminium set on the LME falls below the breakeven costs. Bayside Aluminium would then be immediately making a loss. If the price of aluminium does not improve, Bayside Aluminium would then face the possibility of closure, due to heavy losses and minimal value added to the shareholders portfolio.
- In summary Bayside Aluminium was operating too close to the breakeven margin and needed to swiftly move the breakeven costs to at least below 1000$ per ton aluminium produced. This would ensure that LME aluminium price fluctuations in a downward direction would not put Bayside Aluminium in an uncomfortable position.
- However it must also be noted that this would still only be a first step, to place Bayside Aluminium in a safer economic position. There would still need further work to be done to take Bayside Aluminium's cost base closer to it's competitors so that it would secure it's position in the market.

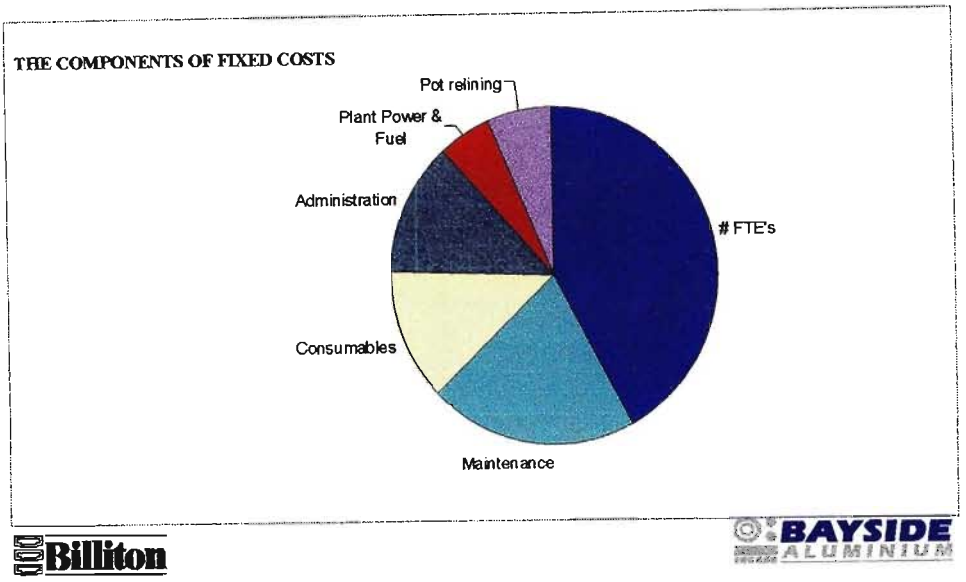
## 2.7 Bayside Aluminium's major cost components

It needs to be understood what makes up the major cost components for the costs illustrated in the graph above. Only once the cost components are known can Bayside Aluminium embark on identifying the high costs components and find ways to reduce costs in those areas.

The pie chart below illustrates the cost components with their relative contributory percentages

Figure 18:

5




Reference - Bayside Aluminium network – L /BG/PS/BGA

Author - J Wilson – 1999

The components of fixed costs above are

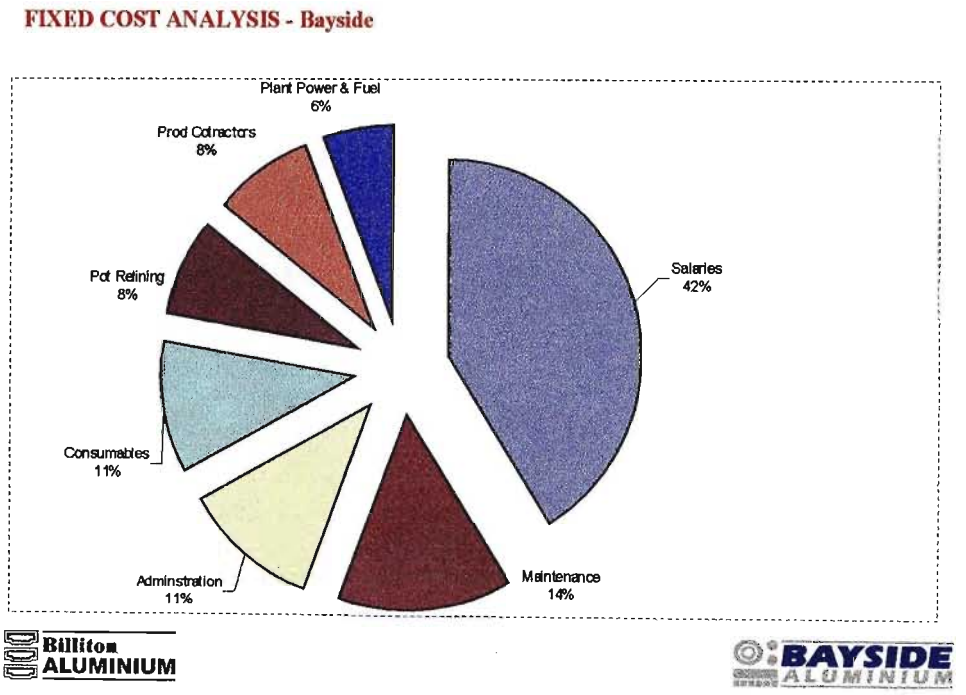
- FTEs – full time employees
- Pot relining
- Plant power an fuel
- Administration
- Consumables
- Maintenance

It is important to note the biggest cost contributors to the total cost make up of Bayside Aluminium. However what is important is that, the controllable portion of the cost breakdown needs to be separated from the uncontrollable portion, for example plant power and fuel. These kinds of costs are governed by long term contracts and as such have fixed annual prices with very little room to manouvre within.

Therefore Bayside Aluminium would look at the components of controllable costs and use these to achieve the cost objectives. Further comments on the graph are

- The FTE portion is the largest portion of the costs.
- This falls under the controllable costs.
- Maintenance, consumables and administration form the next largest portion of controllable costs.
- They are almost equally weighted in value.
- What can be seen from the pie chart is that there is opportunity to address the cost issue in that the controllable portion is significant enough to be tackled.
- Also the controllable portion belongs directly to the smelter and filters through all levels in the Bayside Aluminium organisation.

Figure 19:



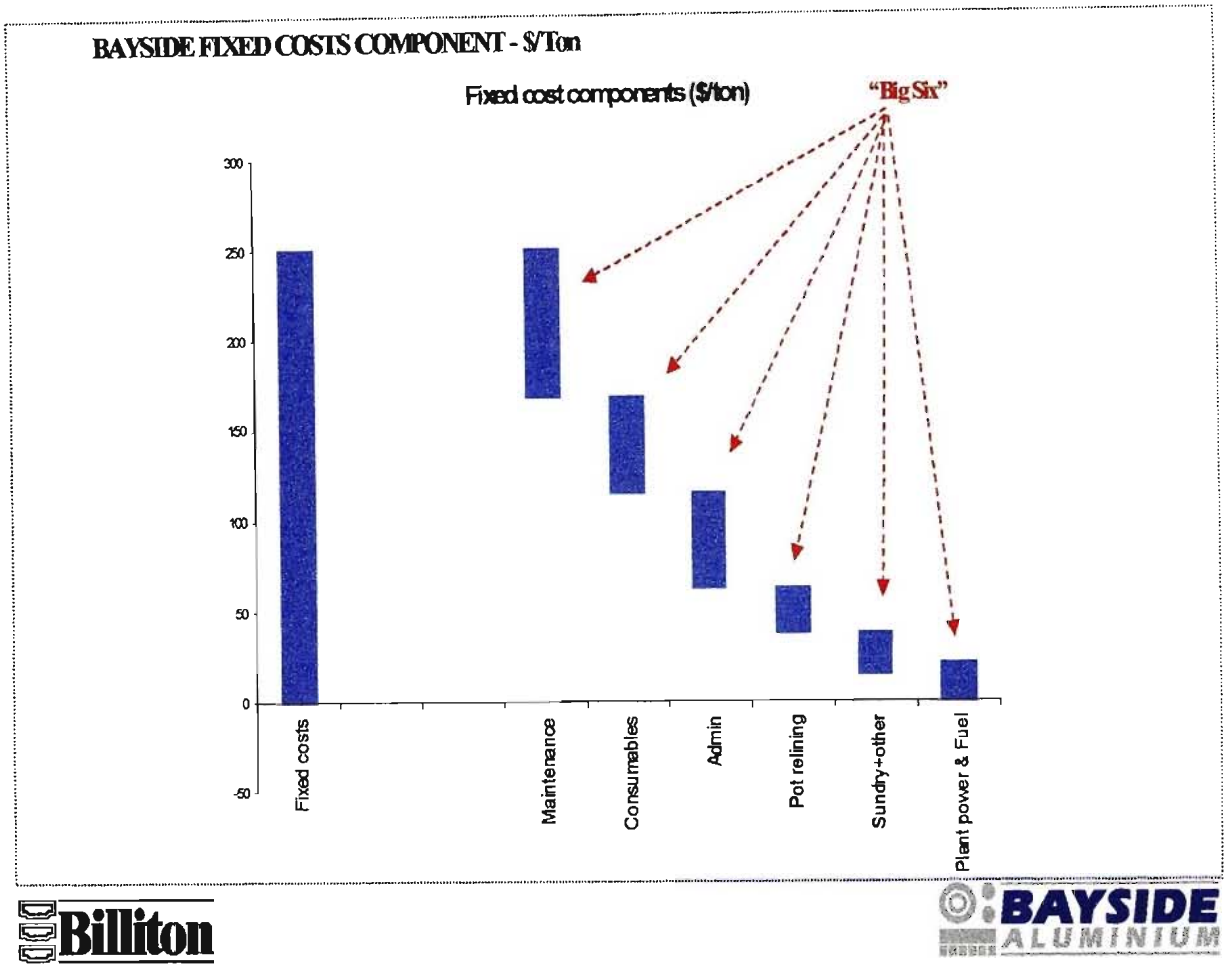

Reference - Bayside Aluminium network – L /BG/PS/BGA

Author - J Wilson – 1999

The above pie chart gives a general overview of the largest costs grouped into the high level categories. Further analysis of these costs could display more clearly where these costs lay. This will also indicate where the focus areas need to be and those areas could be addressed using the Pareto principle

Figure 20:

6




Reference - Bayside Aluminium network – L /BG/PS/BGA

Author - J Wilson – 1999

The above graph illustrates

- The costs clearly on $ per ton aluminium terms.
- All components are calculated using the same base of $ per ton Al.
- The total costs are 250$/ton Al.
- Maintenance forms approximately 90$/ton Al.
- Consumables for approximately 50$/ton Al.
- Administration for approximately 50$/ton Al.
- Pot relining – a production activity, approximately 20$/ton Al.

- Plant power and fuel approximately 20$/ton Al.
- Sundry and other approximately 20$/ton Al.
- Of the 'big six' costs, four are able to be controlled directly by the organisation on a daily basis.
- Four of the big six costs make up 84% of the costs. This shows opportunity for the organisation to make a difference in this area.
- If 84% of the company's costs are controllable, it displays that there may be opportunity for a big exercise or cost saving drive.

## 2.8 Benchmarking and its value for Bayside Aluminium

In order to perform any form of cost reduction exercise, organisations need to explore what is best practice. Organisations then need to try and strive towards obtaining this best practice within the constraints of their particular circumstances.

There are many ways of doing this and one of them is benchmarking and this is one of the methods that Bayside Aluminium used in order to strive towards being a world class organisation.

The following needs to be in place to ensure good benchmarking results

### 2.8.1 Metrics or measures of efficiency

- Organisations need to know what is optimal efficiencies as well as what is achievable efficiencies. This will enable a clearer choice of the organisation used as a benchmark.

### 2.8.2 Standardizing Operational Data Definitions

Collecting the current definitions from each site and mapping these against a set of standard definitions.

Working with sites on the requirements for change to the standard definitions.

### 2.8.3 Developing a data base

- Capturing a series of high level metrics from each operation on a quarterly basis and have this available.
- Developing Data Warehousing for benchmark data.
- Publishing interval benchmarking review reports.

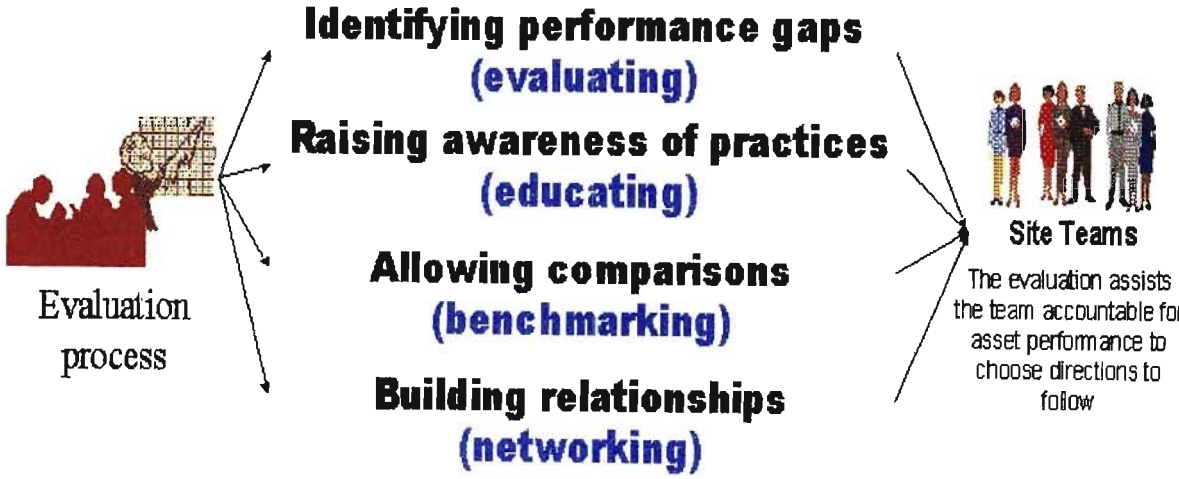
## 2.9 External Benchmarking

External benchmarking has to be come part of corporate culture if organisations are to succeed in business today.

### 2.9.1 Creating value using evaluation

Evaluation against a framework of desired practices is a widely applied tool for improving business performance. The process of evaluation can help teams to improve business outcomes in several ways.

Figure 21:




The figure above illustrates the process flow when critically looking at an organisation and how to proceed to evaluate an organisation.

### 2.9.2 Identifying performance gaps

- Organisations need to be mature enough to appreciate where improvements can be made. If this is not acknowledged, organisations cannot move forward in evaluating themselves critically.

### 2.9.3 Raising awareness of the practices

- Organisations need to then highlight these areas of improvement. Thereafter actively investigate these areas of improvement.

### 2.9.4 Allowing comparisons

- Organisations need to then understand what is best practice. Once best practice is identified, organisations need to strive towards achieving this best practice.

### 2.9.5 Building networks

- In order to get to know what is best practice as well as to continue to keep abreast of best practice, organisations need to develop a set of network contacts, so that continual information flow can help to continually improve the organisation's relative position if used to it's benefit.

## 2.10 Networking – theory

Networking is closely related to benchmarking. Grading a network may be costly in the beginning, but has many rewards soon after.

### 2.10.1 What is a "Network"?

A Network is a formally recognised joining of people across common businesses or interests that share and apply their knowledge around topics of common interest.

### 2.10.2 Why Have a Network?

Accelerate improvement through

- Solving Problems faster (increased cycle time)
- Faster & better identification of opportunity
- Greater external awareness
- Re-use of prior work (cleaning out waste)
- Finding & transferring better practice
- Stop Reinventing the wheel !

Networks are useful for the reasons stated above and today is a necessity in the fast changing business world of today. However it is not simply a one way flow of information, but has to be a mutual flow of information, beneficial to both organisations.

## 2.11 Benchmarking process flow

- Locate the smelters that the organisation thinks would be similar to form an acceptable comparison.
- Draw up document questions to be presented telephonically or by e-mail. These need to be simple, clear and concise in order to get back feedback that is of immediate use. One should not strive to obtain data that contains many inferences as this could compromise data integrity and influence critical decisions.
- Once document is developed, relevant networking contacts need to be contacted and reasons explained as to why the particular exercise is being performed. It is important to be forthright in explaining the reasons for the exercise in order to win the trust of the party that information is required from.
- Standard information sheets need to be drawn up to ensure consistency of information received. If different documents are sent to different organisations, collation of the data to form comparisons would be difficult.
- Also if resources are available, an excellent method of benchmarking is to visit the organisation that information is required from. In this method information is

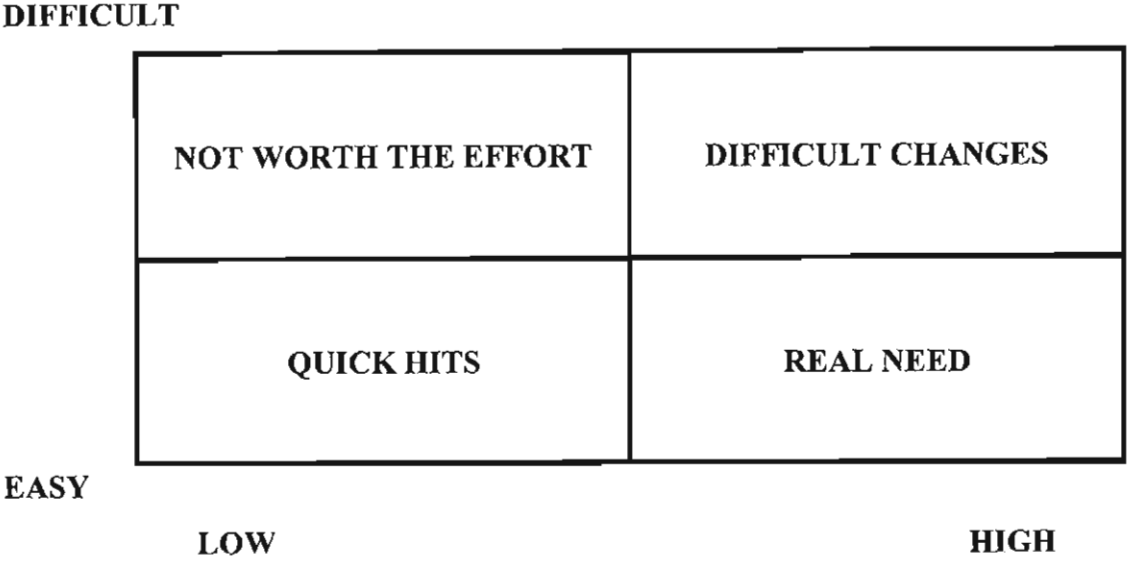
obtained in the correct context that it was intended and any misconceptions or questions can be answered immediately. Also if an organisation were to benchmark across the globe, time difference lags would delay transfer of information, and therefore delay the benchmarking process.

- Some of the points to ensure are
- Ensure that the organisation produces the similar specification product.
- The organisation uses similar technology. An organisation with old technology would not be a good comparison against an organisation with state of the art technology.
- Similar volumes of product or services are rendered.
- Similar equipment is used.
- Similar skill levels are used. This is especially important when benchmarking number of employees. A good example would be that lower job category employees in South Africa would have low qualification levels. However in a first world country, the entrance level even for the lower skilled level jobs are at least a grade twelve. Therefore a direct comparison in lower skilled level personnel cannot be made. What may need to be done is a compensation factor used in order to make the comparison valid.
- In terms of receiving the feedback one needs to also use the pareto principle in addressing issues. That is, if there are major differences in certain areas and these are high cost impact areas, then these should be tackled first. It is of not much use to address the issues that do not have a big impact on the bottom line.

One of the methods used to reach such a comparison is the use of the table or chart below. It is a simple tool yet effective in making the first decision on which issues to address.

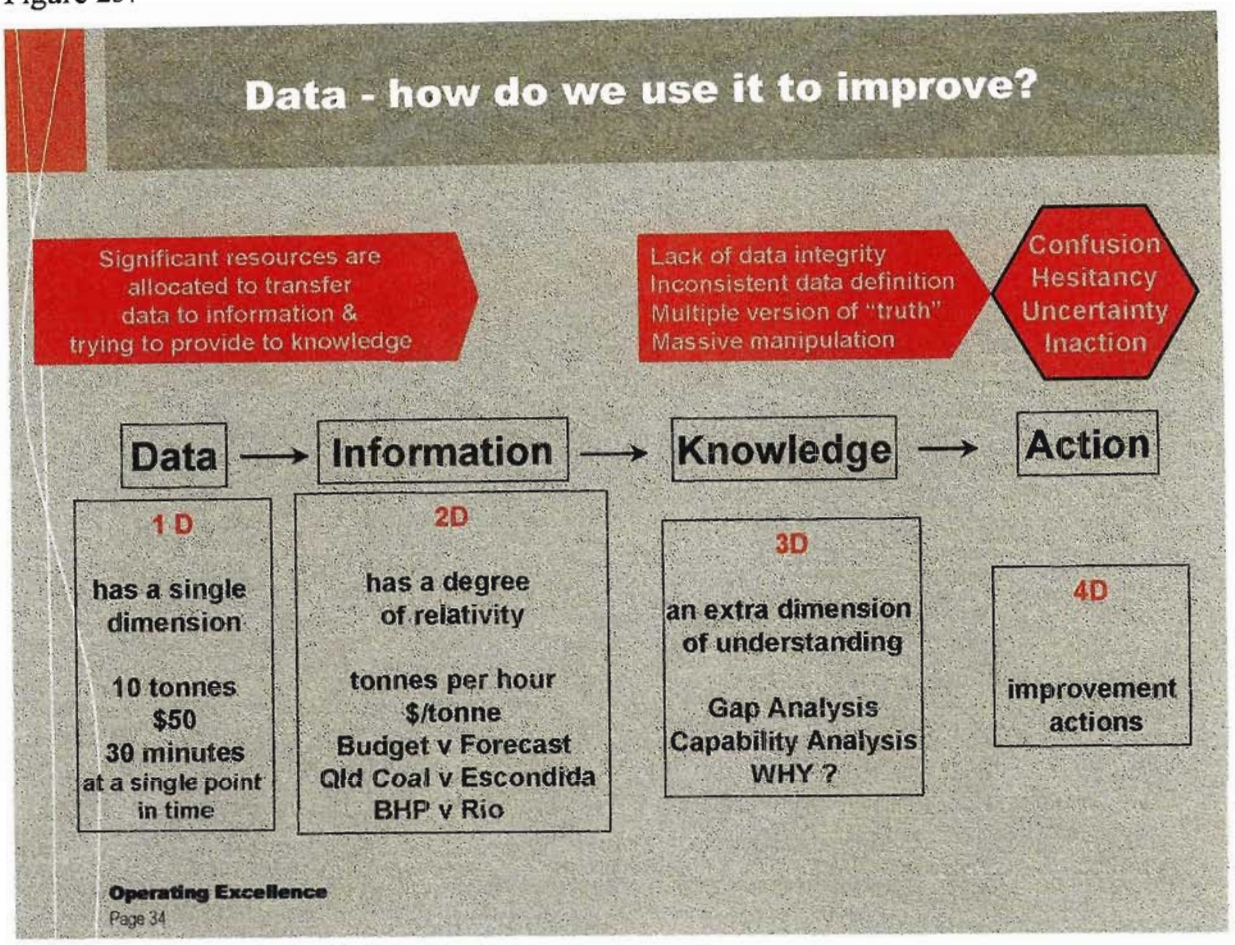
Once ideas, issues or suggestions are categorised into the relevant box, it is easier to prioritise which issues need addressing and what the expected results will be

Figure 22:




- Two activities should be taking place at this point in time.
- Issues need to be prioritised using the chart above, or any other tool that can provide an objective priority list.
- Data that has been received from benchmark smelters need to be disseminated and made into useful information to be transferred into action plans to achieve the objectives.
- The slide below illustrates the transformation that needs to take place when data is received.
- The data must eventually be converted into useful actions or else the exercise would not provide any gain to the process.

Figure 23:



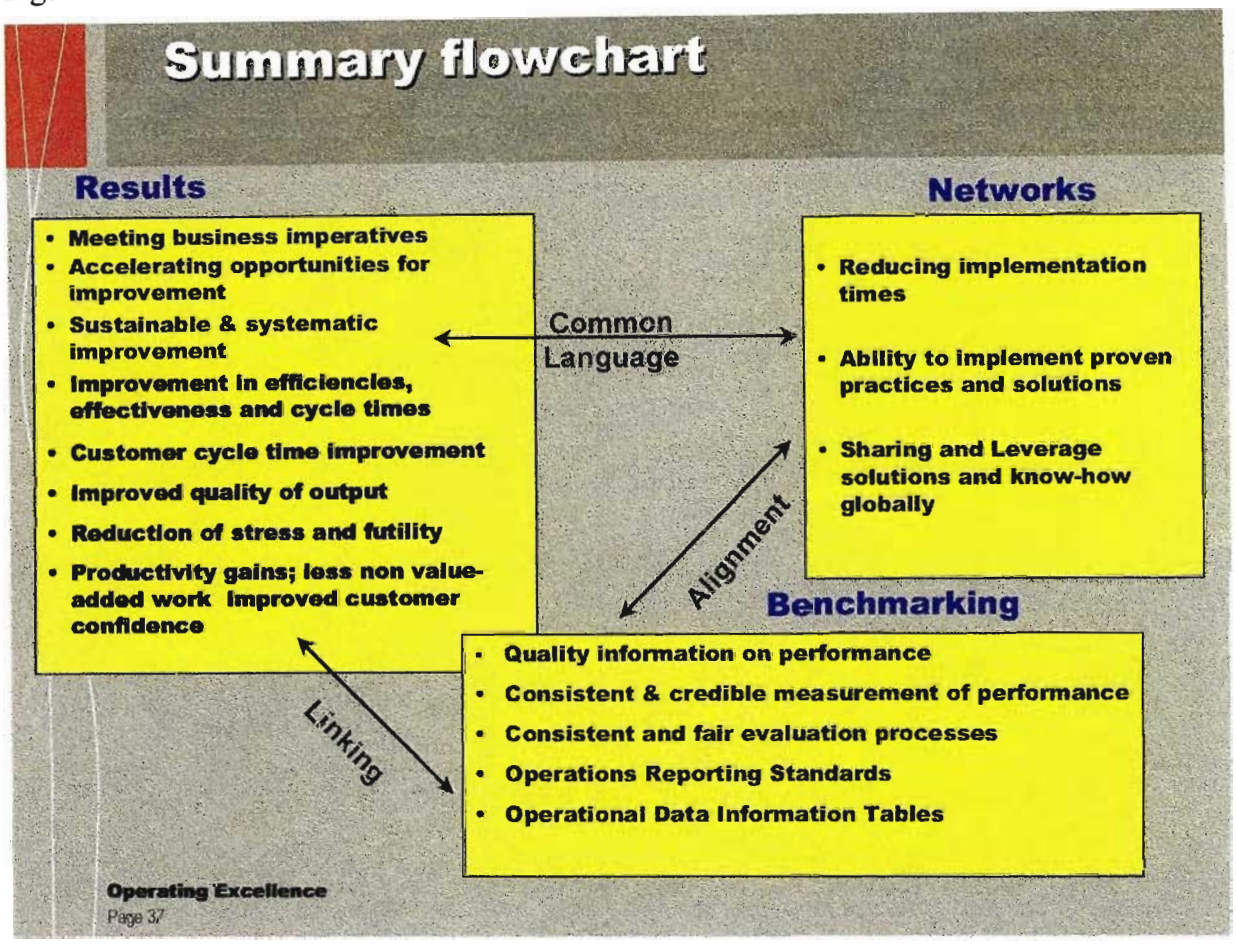

Internet Reference 4 – Operating Excellence - 2002

If the data is not used in the correct manner incorrect decisions may result in higher costs and may render the exercise a failure. As an organisation, it is imperative that the first phase of this exercise is a success, as this will set the pace for the rest of the organisation to follow. If the first exercise is considered a failure or even a difficult process, the remainder of the organisation may not support the issue and the process would lead to premature failure. This could threaten the existence of the organisation.

In summary the exercise of networking and benchmarking is only a beginning to attempt to reach a goal of becoming world class being supported by low cost operations. Out of these further downstream processes will ensure that the objectives are achieved and that results are captured where required.

To illustrate this point, below is a flowchart summary of networking, benchmarking and the results expected out of these exercises

Figure 24:




Internet Reference 5 – operating Excellence

A final point to note is that this process can and should be an ongoing process, since the more interdependencies created between theses processes, the more beneficial it is to the organisation.

## 2.12 Cost saving potential for Bayside Aluminium

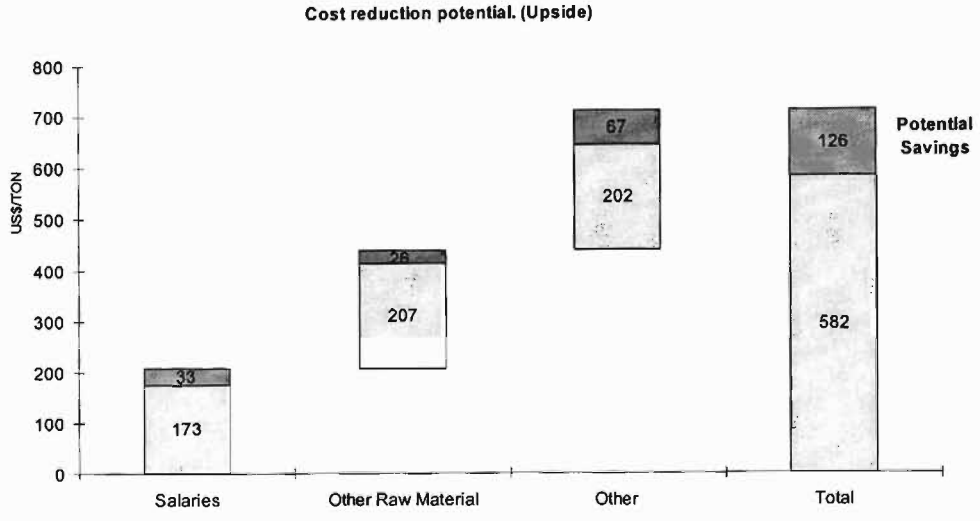
Bayside Aluminium needed to have an idea of the potential saving opportunity it would have to create were it to embark on a reengineering exercise. This figure was important since

- This must be the real figure that will have an impact on the company's fixed cost position.

- This is the figure which would be familiar with the organisation and that the workforce will strive towards.
- This is the figure that would be published to shareholders informing them of the exercise and the benefits to be reached. If Bayside Aluminium does not get close to this target it could do a lot of damage on shareholders confidence

Below is a graph illustrating the proposed target in summary

Figure 25:




Reference - Bayside Aluminium network – L /BG/PS/BGA

Author - J Wilson – 1999

The target of 126$ per ton Al is a real and a psychological target and must be adhered to. Also it is needed for the organisation to understand that once this target is met, it is not the end of the process. The target needs to be sustainable into the future and further targets need to be achieved, therefore the continuous improvement process must never seize. This has to be clearly communicated to the organisation so that the organisation begins to breed the culture of cost consciousness and it's vulnerable position on the world stage.

## 2.13 Why were items like Alumina, Plant power and Electricity left out of exercise?

The organisation needs to focus on what is controllable cost and not ponder on items that they cannot make an immediate impact on. Even though some of the uncontrollable

costs may be big costs, it would be a waste of company resources to focus on these items not knowing whether these items can be influenced. Another issue is that items like the ones listed above may involve only a few key people from the organisation, which would not achieve long term costs saving objectives. The organisation needs to involve every member of the organisation if it has to achieve success at the present point in time and into the future.

Items like plant power and major raw materials all have long term fixed price contracts with major suppliers. The scope for changing these therefore is very limited and would be subjected to senior level negotiations.

The most important reason however is that Bayside Aluminium actually has one of the best power and raw material prices in comparison to other smelters
Figure 26:

Internet Reference 6 – Brook Hunt reports

The graph above illustrates that Bayside Aluminium is at a favourable position on the cost curve with respect to major material inputs.

## 2.14 Involvement of a consultant in the reengineering process

The use of reengineering consultants is a practice used by many large organisations. The use of consultants has advantages and disadvantages. The issue is discussed below in a study conducted by AA Shabana to ascertain the success of using consultants in the reengineering process. It is interesting to note that one of the conclusions made was that it is almost necessary to use consultants if the organisation is doing the first reengineering process.

## 2.15 The effect of Outside Consultants Involvement over the Success of reengineering Projects.

Internet Reference 7- Ahmed A. Shabana – year – 2000

Organizations often seek the services of outside consultants. The consultants bring to the organization specialized skills, experience and know how that the organization has a need for and cannot afford the cost or the time needed to develop them internally. Consultants also act as boundary spanners bringing to the organization both technical and administrative innovations. Their role is far more pronounced when organizations undertake novel projects such as reengineering processes.

There are several reasons why introducing a consulting firm ought to increase an organization's chances to successfully implement a reengineering project. First, consulting firms can bring their wealth of experience implementing similar projects in other organizations. Consultants can direct the reengineering effort to areas where it can have the most beneficial results. At the same time, by being outsiders to the organization, consulting firms can take a fresh look at existing processes and uncover unnecessary steps and conditions that become an integral part of existing processes without serving a specific purpose (Hammer, 1990). Finally, as consultants allegiances are to the project at hand, they can bring an objective vision to the project and thus act as facilitators of the change process by mediating the inevitable conflicts that arise with the changes introduced by reengineering processes (Markus, 1984).

On the other hand, consultants can also be seen as having a potential negative impact on the implementation of a reengineering project. First, by being outsiders to the organization, they have a limited knowledge of the existing processes. An extensive and lengthy study is the only way they can achieve some understanding of the peculiarities of the process in a particular organization. Delays in acquiring this basic information can only have a negative effect over the completion times of the project at hand. Even after such study, their knowledge of the process will remain somewhat limited as many of the political and organizational forces that have shaped existing processes might still remain undiscovered. Without this critical information, consultants might recommend actions that, although successful in other organizations, cannot survive or lead to the results sought in a particular organization.

One can make extensive arguments for or against the use of consulting services. The fact remains that some organizations take that route while others prefer to undertake projects internally. At the same time, all organizations do not use consultant's services in the same manner. While some organizations use consultants to design and implement

reengineering projects, other organizations limit their involvement to either the design or the implementation stages of the project.

This paper looks at the success of reengineering projects on two separate dimensions. The first one is based on the direct outcomes of the project on measures such as quality, service level, operating and personnel costs and reduction in overall cycle time. The second success dimension is based on the project's performance in terms of meeting budgetary and time constraints. Projects that are completed within or close to such constraints are viewed as more successful than the ones that do not.

The first hypothesis tested in this study is the following:

***H1: The level of outside consultant's involvement has an effect over the outcomes of reengineering projects.***

The hypothesis is that increased consultants intervention will lead to better project formulation, process selection and overall implementation, which in turn ought to lead to more beneficial outcomes for the project.

In the second hypothesis, the effect of consultant's intervention over the project management dimension is examined. The consultants experience with similar projects and their problems ought to make the implementation go more smoothly.

***H2: The level of outside consultant's involvement has an effect over the project management performance of reengineering projects.***

The above hypotheses is tested on data collected as part of a larger research project aimed at better understanding organizations experiences with reengineering projects and their implementation.

## 2.16 Method

Data for this study were collected by means of a mailed survey. The survey instrument received several revisions as it was pretested with a number of IS executives and Management faculty. Using a commercially available mailing list, the instrument was mailed to a random sample of one thousand and seventy-three top IS executives. An attached letter explained the purpose of the study and promised a summary report of the results. An important issue that this study encountered early on, is the lack of consensus on what constitutes a reengineering project. In order to avoid this problem, the instructions page of the instrument included Hammer and Champy's (1993) definition of a reengineering process. In addition, the survey includes several questions to help

identify projects that clearly do not meet the traditional reengineering process criteria. A total of 201 organizations returned filled questionnaires for a response rate of 19 %. Respondents were asked to rate their projects on these dimensions on a seven point scale. A combined scale showed a high level of reliability and was used to represent the project's score on each of the two success dimensions.

Organizations in the sample ranged from small (less than $50 Millions) to very large (Over $1 Billion). This wide range confirms the widespread implementation of reengineering projects among organizations of different sizes. The participating organizations also belonged to a wide variety of industries. The largest group of respondents come from the Manufacturing Industry (37%) followed by the service industry (19%). The distribution of respondents is in line with the general distribution of organizations in the economy as measured by the Internal Revenue Service statistics.

Projects were classified by the levels of consultants involvement in the reengineering project. Projects where consultants were not involved formed the first category. The second category included projects where consultants were involved in the design phase. The third category included projects where consultants were brought in to implement the reengineering project. The final category was assigned to projects where consultants were involved in both the design and implementation of the reengineering project.

Data was analyzed to see if the outcomes and the project management performance differed significantly between each of these different levels of intervention.

## 2.17 Analysis and Results

Among the responding organizations (201), 118 had completed reengineering projects and could provide the necessary outcome measures. In terms of the breakdown by the level of consultants involvement, it was as follows.

Table 2: Breakdown of reenginering Projects by consultants involvement

| No Consultants | Consultants in Design phase | Consultants in Implementation phase | Consultants in both Design and Implementation phase |
|---|---|---|---|
| 57 | 26 | 6 | 29 |

Tables 3 and 3 report the ANOVA results.

| | Sum of Squares | Degrees of Freedom | Mean Squares | F-Ratio | P-Value |
|---|---|---|---|---|---|
| Consult (btw) | 3.2291 | 3 | 1.0764 | 1.008 | 0.392 |
| Error (within) | 121.7074 | 114 | 1.0676 | | |
| Total | 124.9365 | | | | |

Table 3: ANOVA results for the relationship between consultants involvement and the outcomes of the reengineering Projects

| | Sum of Squares | Degrees of Freedom | Mean Squares | F-Ratio | P-Value |
|---|---|---|---|---|---|
| Consult (btw) | 3.4583 | 3 | 1.1528 | 2.582 | 0.057 |
| Error (within) | 50.9019 | 114 | 0.4465 | | |
| Total | 54.3602 | | | | |

Table 3: ANOVA results for the relationship between consultants involvement and the project management performance of the reengineering Projects

The results of the analysis failed to support both hypothesis.

## 2.18 Discussion and Conclusion:

Contrary to expectations, the level of consultant's interventions had little influence over the success of the reengineering projects in both the outcomes and the implementation dimensions. There are several possible reasons why the data did not support the contribution of consultants to the success of the reengineering projects. As the benefits of Reengineering became apparent to organizations, consulting firms have actively marketed their Reengineering services. While it is clear that the pioneering firms have developed over time the know- how and gained the experience in similar projects, there is a wide fluctuation in the quality of services currently offered by consulting firms. Some of the comments of the respondents support this view.

While outside consultants can act as facilitators to the change process and provide the framework to implement the new process, the outcome of the project is ultimately dependent on the organization's commitment to the project. Organizations that hire

consultants might fall into the trap of expecting consulting firms to reengineer their processes with little or no contribution on their part (Bashein et al.,1994).

At the same time take note out that while the study captured the level of involvement of the consultants in the different phases of the project, it did not address the extent of involvement whether measured by the number of billable hours or the overall financial remuneration to the consulting firm.

Organizations using the services of consulting firms might develop higher expectations from their projects than organizations that implement the projects internally. These higher expectations often stem from the experience and track record of the external consultants. Failure to meet similar outcomes can negatively affect the organizational perception of the degree of success of the project.

Finally, it is important to point out that projects in this study represent the second generation of reengineering implementations. Organizations that implemented the first generation of reengineering projects were pioneers and their involvement of outside consultants was almost a necessity. There were no established methodologies or tools to assist organizations going on their own. Since then, a wide range of tools and methodologies have become available to organizations and the widely published experiences of failures and successes have made undertaking reengineering projects without outside consultants a less risky venture.

**There are numerous organizational and technological issues that organizations need to address when implementing a reengineering project. While using the services of consultants might help dealing with some of these issues, it is clearly not enough to ensure a successful reengineering project.**

## 2.19 Union involvement in the process

The one issue that Bayside Aluminium handled well was the issue of Union involvement. Very often organisations embark on similar exercises, having difficulties with the unions buying into the reasons and the need for such exercises. This ultimately leads to uncompromising situations for the companies. It also causes a serious strain in the relationship between the unions and the companies to the overall detriment of the company.

Unions however form an important part of the process and if an organisation can get the full support and trust of the unions, the process is far more likely to succeed.

The topic on union involvement and the mechanism used by Bayside Aluminium to gain their support will be discussed in greater detail in Chapter 3.

## 2.20 Procedure development

In order to ensure consistency of approach as well as transparency, different procedures were developed and made accessible to all employees in the plant as well as Unions.
The procedures were important because

- They ensured consistent approach.
- They allowed transparency.
- Employees could rate themselves and have an idea of what their chances of retrenchment would be.
- They facilitated easier communication regarding the process.
- They laid down ground rules for the process and incorporated acceptable boundaries.

Below is one of the procedures used to facilitate the process

**2.20.1 Below is one of the procedures used to facilitate the process**

| BAYSIDE ALUMINIUM | WE STRIVE TO DO THINGS RIGHT THE FIRST TIME, EVERY TIME |
|---|---|

PR-BHI-007

# "CLOSE THE GAP" (CTG) RETRENCHMENT PROCESS

PURPOSE

**Specification of retrenchment process to be followed as part of the Bayside CTG initiative**

**A Objectives**

**B Procedure**

B.1 Principles applicable to the CTG Retrenchment Process

Retrenchment under the CTG process is to be conducted in such a way that :

- The impact on Bayside employees is minimised.
- The process and criteria for identifying affected employees is fair
- Bayside realises its business objectives.
- All applicable legislative requirements are met.

B.1.1 Pre-CTG redundant employees

Employees who became redundant before the CTG process that could not be re-deployed or transferred to other departments for any reason whatsoever will be deemed to be affected employees.

B.1.2 Voluntary Retrenchment

From 01 February 2000 to 31 December 2000 there will be a moratorium on granting of voluntary retrenchment packages. After 31 December 2000 the company will consider applications for voluntary retrenchment subject to operational and economic conditions.

B.1.3 Retrenchment Period

The identification and notification of affected employees will commence not later than 01 February 2000 and will be completed within two months from the commencement date. Affected employees will be informed of their expected exit date subject to the implementation of relevant CTG ideas.

B.1.4 Method of Selection

The selection criteria for OMETS and LST are different and applied independently of each other.
The LST criteria are applicable to LST employees in broadbands 11, 10 and 9.
The criteria for both OMETS and LST's will be applied on a departmental basis.
The selection criteria must be applied based on the current organisational structure.

B.1.5 Transfer

Where an oversupply of skills amongst affected employees in one area exist, skilled affected employees from that area may be transferred into another area that has a shortage of skills. Transfers within a department are to be approved (in writing) by the Departmental Manager and transfers between departments by the General Manager.

B.1.6 Notice Period

Affected employees will be given a written notice of their exit date at least two months before the date.
An affected employee may at any time after being notified give one-month notice should she/he wish to leave the company. The employee would be entitled to the normal retrenchment benefits.
Should there be no work for an employee during the notice period, the Departmental Manager may grant the employee special paid leave until the end of the notice period.

B.1.7 Re-employment of retrenched employees

Retrenched employees will be entitled to apply for re-employment at Bayside should vacancies for which they are suitably qualified arise. Applications by these ex-employees will receive preference over applications by other external candidates. The preferential treatment of applications by ex-Bayside employees will lapse 24 months after the exit date.

B.1.8 Social Responsibility

Bayside will facilitate the provision of Skills Training, Financial planning advice and psychological counselling for employees who may require these services during the CTG period.

B.2 Selection Criteria

The Selection Criteria for OMET and LST employees is specified in appendices 6.1 and 6.2 respectively.

B.2.1 Application of Selection Criteria

The following steps will be followed in applying the selection criteria in each Department:

- Number and positions to be declared redundant is determined by the Departmental CTG team.(Let us say the number is "X" )
- The Departmental Manager and the General Manager approves the CTG team's recommendations and ensures that they are in line with Bayside business objectives.
- All employees (LST and OMETS separately) are assessed and scored in terms of the selection criteria
- "X" Employees with the lowest points, per department and position, after application of the criteria are identified and notified. These employees are the affected employees in that department.
- As CTG ideas get implemented employees become redundant, redundant unaffected employees will then be transferred into non-redundant positions (which are not going to be declared redundant under CTG) which are being occupied by affected employees.
- Affected employees in non-redundant positions will exit the company in order of increasing points; i.e. employees with the lowest points will leave first.
- Affected employees in redundant positions will automatically exit the company as soon as their positions are declared redundant, subject to notice requirements in 2.1.6 above.
- In the case of OMET employees, should the number of employees with lowest points exceed the required number of employees to be retrenched, the secondary criteria will be applied.
- In the case of LST employees, should the number of employees with the lowest points exceed the required number of employees to be retrenched, individual service records will be taken into consideration.
- The Superintendent Human Resources will review and certify that correct information as currently stored in the SAP system has been used where required in the application of the criteria.

B.3 Administrative Arrangements

B.3.1 Notification

Affected employees will be notified in writing using a letter of notification as in appendix 5.4 below.

B.3.2 Retrenchment Package Calculation

Retrenched employees will be paid a retrenchment package calculated as follows:

| | |
|---|---|
| 12 working days Salary for each year of service (or pro-rata for incomplete year) subject to a minimum of amount equal to 60 days pay. | |
| Training Grant | R17 500,00 |
| 42 working days Salary in lieu of notice. | |
| Employees exiting on or before 30 June 2000 as and additional once off 5,5% salary adjustment. | |
| Normal annual salary increases will apply to employees exiting on or after 31 July 2000. | |
| Affected employees will be entitled to their respective gain-sharing pay out if they have completed the respective six-month gain-sharing cycle. | |
| **TOTAL PACKAGE** | |

Employees will also be entitled to their retirement withdrawal benefits in terms of the rules of the applicable fund.

Any amounts due to Bayside by way of Study Loans, Computer Loans or Relocation Expenses by a retrenched employee will be waived by the company on the exit date, unless the amount concerned was loaned after an employee was notified as an affected employee, in this case the full amount due will be payable on exit date.

B.3.3 Skills Training

An employee wishing to enrol for skills training must contact the departmental Training Co-ordinator who will make the necessary arrangement. The cost of this training shall be paid from the affected employee's training grant.

B.3.4 Financial Planning Advice.

Employees requiring assistance must contact their HR Co-ordinator.

B.3.5 Post Retrenchment Trauma

Employees requiring psychological counselling must contact the Bayside clinic or the Helpdesk.

B.3.6 Small Business Development

Employees interested in small business development should contact the SMME co-ordinator at ZCBF or the Business advice centre. Bayside co-operates with these bodies in facilitation of small business development in the region.

B.3.7 Payment of retrenchment benefits.

Payment will be by cheque only, the HR co-ordinator will be responsible for separation arrangements.

B.4 Definitions and Abbreviations

| Term | Description |
|---|---|
| Affected Employee | Bayside employee who is currently redundant and cannot be re-deployed or An employee who becomes redundant through the CTG process and having been assessed using the retrenchment criteria is identified for retrenchment |
| LIFO | Last In First Out |
| NQF | National Qualification Framework |
| OMET | Operations and Maintenance Expertise Team |
| LST | Leadership and Specialist Team |
| SMME | Small , Micro and Medium Enterprises |
| ZCBF | Zululand Chamber of Business Foundation |
| CTG | "Close the Gap " : an accelerated continuous improvement initiative aimed at improving Bayside Business Performance |

| | |
|---|---|
| MBO | Management by objectives, i.e. performance management system. (PR-BHF-006: Performance Evaluation Management) |

B.5 Primary Selection Criteria – OMET employees

| Criteria | Description | Point allocated |
|---|---|---|
| Literacy level (Qualifications reflected on the Business Information System) as at 31/01/2000 | Up to NQF level 1 or Std 7<br>Up to NQF level 2 or Std. 8<br>Up to NQF level 3 or Std. 9<br>Up to NQF level 4 or std 10/N3 + trade<br>NQF level 5 or N6/degree/diploma or higher | 0<br>10<br>20<br>30<br>50 |
| Skill level as at 31/01/2000 | Level 1: Employee performs duties of a manual and/or repetitive nature. Minimal skill, discretion and judgement are required.<br><br>Level 2: Employee performs a limited degree of discretion and judgement, which may become virtually automatic with practical experience.<br><br>Level 3: Employee performs a considerable degree of discretion and judgement and demonstrates a basic analytical ability.<br><br>Level 4: Employee performs non-autonomous, non routine tasks of some complexity and exercises analytical, problem solving and decision-making skills acquired after considerable practice experience. | 0<br><br>20<br><br>30<br><br>50 |

B.6 Secondary Selection Criteria – LST Employees

| Criteria | Description | Point allocated |
|---|---|---|
| **LIFO**<br>Last in first out will apply where more than the required number of employees is identified. | Months continuous group service as reflected on SAP. Continuous group service means the uninterrupted service with Bayside, Hillside and any other Billiton Company. | N/A<br>Employees with the least service will be affected first |

B.7 Primary Selection Criteria – LST Employees

| Criteria | Description | | Point allocated |
|---|---|---|---|
| **Performance**<br>(Average of the sum of the points allocated, derived from the MBO ratings between the period 01/07/1997 and 30/06/1999, as reflected on the Remuneration system) | | **Rating** | |
| | Unacceptable Performance | ( 5 ) | 0 |
| | Poor Performance | ( 4 ) | 10 |
| | Average | ( 3 ) | 20 |
| | Above Average | ( 2 ) | 35 |
| | Excellent (Water walker) | ( 1 ) | 50 |
| Qualifications<br>(Qualifications as reflected at 31/01/2000 on the Business Information System vs. required as per job specification/competency profile). | Does not meet the requirements.<br>Meets the requirements.<br>Exceed the requirements. | | 0<br>30<br>50 |

**2.20.2 Procedure on how to implement the people plan**

PR-BHI-008

# OMET SKILLS LEVEL RATING FOR THE CTG PEOPLE PLAN SELECTION

PURPOSE

**To ensure consistent and fair application of the skills level ratings per department**

## C Objectives

To provide parameters ensuring:

- Fair treatment to all OMET employees.
- Consistent rating per department and job title.
- Uniform application across the plant.

## D Procedure

D.1 Principles Applicable to the OMET Skills Level

- All ratings given per skill needs to be motivated.
- An employee who was not afforded the opportunity to practice a skill, must not be disadvantaged, i.e. rated.
- An employee who was not trained in a specific skill may not be disadvantaged, i.e. rated.
- All OMETS need to be rated.
- The minimum number of people to rate an individual is to be the Supervisor and Superintendent.
- The lifespan of this procedure is from 01/02/200 to 30/06/2002.

D.2 Process

- Each employee needs to be rated on FM-BHI-020 (Excel worksheet).
- Supervisors and Superintendents need to reach agreement on the above.
- Each employee's ratings need to be transferred to FM-BHI-021 (Skills Summary: OMET Job Title or Artisan Discipline). No zero ratings nor blank spaces to be left – use N/A where no skills/tasks are applicable.
- FM-BHI-021 needs to be signed – certifying the contents to be correct – by the Supervisor and Superintendent.
- Any additional information not reflected on FM-BHI-021, needs to be attached.
- The Superintendent needs to hand a copy of FM-BHI-020 and the original FM-BHI-021 to the Superintendent Human Resources.
- The Superintendent Human Resources needs to receive **all** the above documentation by 22/02/2000.
- The Superintendent must not accept any incomplete FM-BHI-020 and FM-BHI-021 documents.

D.3 Skills Level Definitions Interpretation

D.3.1 Skills Interpretation

| Level | Interpretation |
|---|---|
| Level 1 | Employee performs duties of a manual and/or repetitive nature. Minimal skill, discretion and judgement are required. |
| Level 2 | Employee performs a limited degree of discretion and judgement, which may become virtually automatic with practical experience. |
| Level 3 | Employee performs a considerable degree of discretion and judgement and demonstrates a basic analytical ability. |
| Level 4 | Employee performs non-autonomous, non routine tasks of some complexity and exercises analytical, problem solving and decision-making skills acquired after considerable practice experience. |

D.3.2 Skills Definition

| Level | Definition |
|---|---|

| | |
|---|---|
| Level 1 | Only capable of performing repetitive, low risk tasks, e.g. sweeper. |
| Level 2 | Can do tasks with supervision. |
| Level 3 | Can do tasks without supervision. |
| Level 4 | Can provide training. |

D.4 Calculation of overall rating

Only skills rated must be used to calculate the overall rating.

The overall rating is the average of the skills rated, e.g.:

| SKILL 1 | SKILL 2 | SKILL 3 | SKILL 4 |
|---|---|---|---|
| **2** | **N/A** | **2** | **3** |

$$\frac{2+2+3}{3}$$

∴ Actual overall rating = 2,3

From *x*,1 to *x*,4 to be rounded down.

From *x*,5 to *x*,9 to be rounded up.

## 2.21 Summary

It is important for organisations to understand their current positions before attempting to change a future position. It is also important that the organisation understands it's strengths and weaknesses. An organisation cannot proceed blindly into a reengineering process without knowing what is required internally as well as what the factors are that influence such a process. It is therefore of benefit to the organisation to invest in understanding internal processes as well as the theory surrounding the reengineering process so as to know what to expect once the exercise begins. The organisation also has to be able to gather what is available in terms of experience and knowledge from other orgainsations instead of 'reinventing the wheel'. Lastly, all the theory and expertise has to be applied into a company strategy where the reengineering process will form an important component to provide long term benefit.

# Chapter 3

# The Reengineering Planning Process

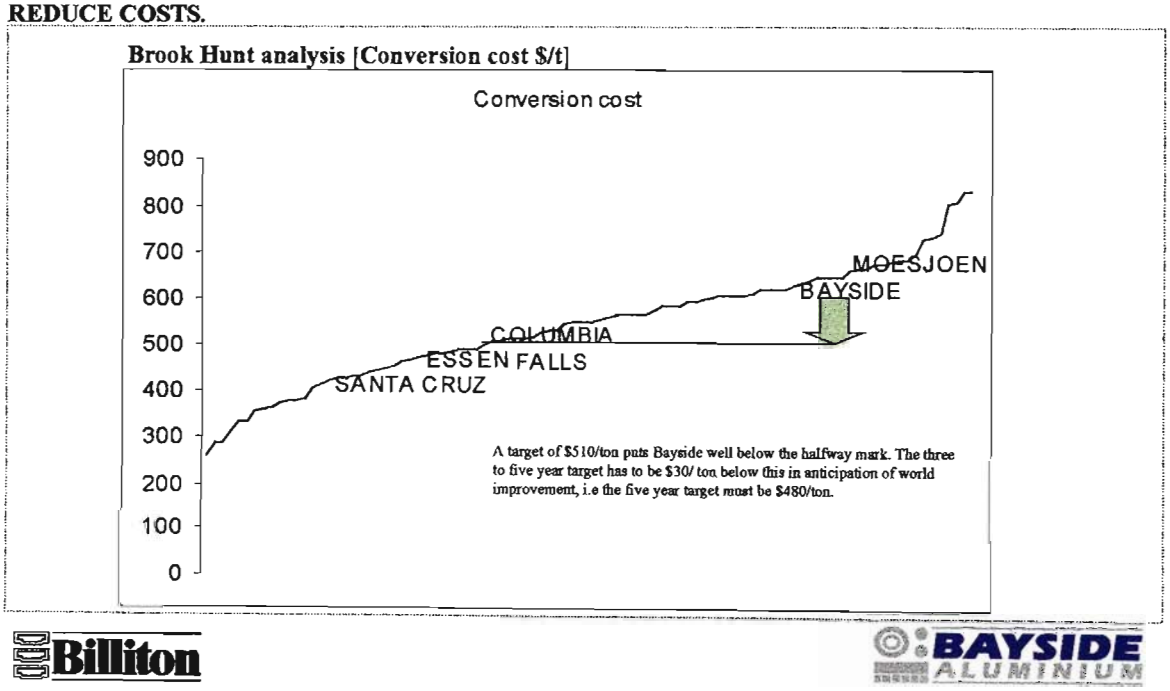
## 3 The reengineering planning process

### 3.1 Introduction

Once again the graph below reflects the savings that need to be made in order for Bayside Aluminium to lower it's fixed cost base to acceptable levels. Bayside Aluminium needs to do this process much quicker than natural ways of cost reduction over many years. Bayside Aluminium's management took a decision to conduct a short term cost cutting exercise with the hope that this exercise would have long term benefits. It was also hoped that this exercise would entrench the culture of cost saving into the organisation.

Figure 26:

To fall in the lower half of the cost curve controllable cost of production needs to be reduced to less than $ 510/t. Conversion cost reduction over the past 4 years has been ± 1.5 % or $30/ton. The five year target is thus $480/ton or $100/ton less than the current comparable cost of $580/ton (Controllable costs being all costs other than alumina and power).




Below is a statement made to the employees of the company on the need to reduce costs thereby requiring to reduce the number of full time employees

Why are we reducing people?

> "Over the past 5 years, the Bayside Aluminium Smelter has been in the process of continuously reducing costs. Whilst this process has been successful, Bayside Aluminium's position on the cost curve has remained consistently poor as a result of other high cost producers also reducing costs at a rate equivalent to and or exceeding that of the Bayside Aluminium Smelter. Management and the employees at the smelter realised that in order to ensure Bayside Aluminium's long term survival Bayside Aluminium had to accelerate the process of continuous improvement dramatically in order to stay in business and continue to receive investment from the shareholders. It was with this background that the decision to embark on the Close the Gap program was taken. Each department participated in this exercise and business practices were critically appraised and compared to benchmark peers around the world. The process has resulted in the need to conduct a program of forced retrenchment. "

As seen from the statement above the initial decision was announced to the organisation of its intention to perform the reengineering exercise. This was the first step in communicating the company's intention to progress with the reengineering process.

### 3.2 Management involvement

It is important to note that a major reengineering exercise that would have all facets of impact on the organisation would need support and involvement from top management. In the case of Bayside Aluminium, the General Manager spearheaded the exercise and involved the middle management layer of the organisation. The middle management layer of the organisation was to execute the reengineering process. Top management was involved as well. On a weekly basis progress the teams directly involved in the process did feedback presentations and progress was monitored according to the common program set up by the team for the process.

## 3.3 The first step

The General Manager did a presentation of the intention to conduct the process and the reasons behind this process. This presentation was done mainly to the LST team, or the Leadership and Specialist team, which comprised of middle management and specialist personnel. In the presentation explanations were done regarding the reasons behind the reengineering process and the implications of not conducting such a process on the long-term survival of Bayside Aluminium.

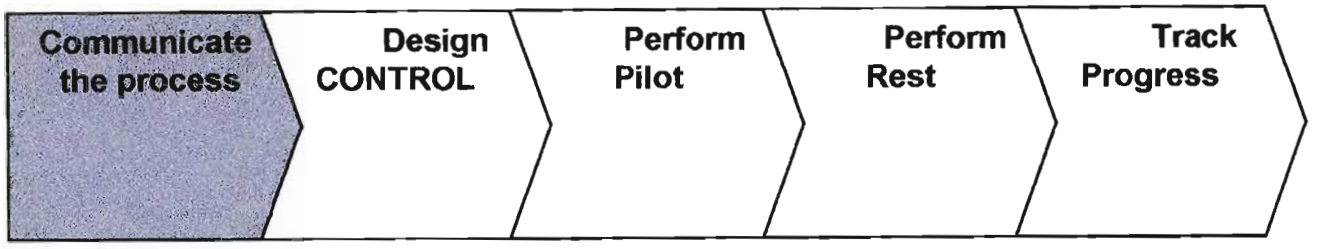
Employees would obviously be skeptical at such a process due to the fears of job security, therefore it needs to be pitched at the correct level of the organisation. Furthermore the reasons behind the exercise need to be carefully explained in order to get the support of the leadership team of the organisation, since this is the layer that are required to execute the process.

Dealing with the Unions would involve negotiations and a degree of transparency in order to obtain support from the unions for such a process to succeed. More detail will be discussed regarding Union meetings and contracts further in this chapter.

More detail on the exact process followed will now be discussed

### 3.3.1 Step 1 – Communicate the process

Figure 27:




- Communication Champion
  - Obtain a communication champion to communicate the launch of the process. This may have to be a senior person within in the organisation. Be cautious of selecting a communication champion does not necessarily reside on the site, for example, someone from head office. This begins to cause all sorts of blame tactics and neglects the spirit and theme of ownership.
- Communication Pack
  - A communication pack is to be created detailing the process and the reasons behind the process. The communication pack has to be similar to the presentation done by the Champion of the process.
- Communicate it to the whole Organization
  - This communication pack needs to be rolled out to all levels of the organisation as soon as possible. This will ensure that all levels of the organisation receive the same information at about the same time frame.
  - Senior people in the organisation need to do the communication. It must not be left to filter through the organisation but a concerted communication effort must ensue by senior people.
  - Unions need to be briefed by senior management at a separate session using the same brief that goes out to the rest of the organisation.
  - Comments and suggestions are to be invited from all those receiving the communication and these are to be addressed quickly as well

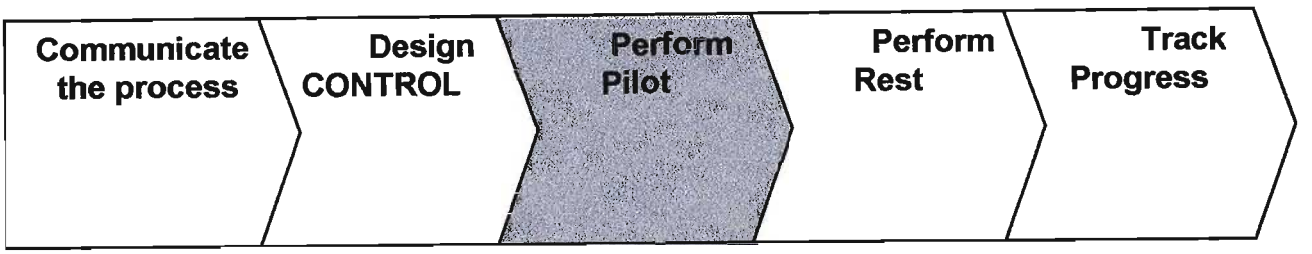
### 3.3.2 Step 2 – Design control

Figure 28:


- Steering Group: Management Team and Unions
  - A steering group needs to be selected to monitor the process.
  - It is important that the steering group is a group of senior people. It is also imperative that the Unions be included on this steering group to work together with management.
  - This group must remain intact throughout the process until the review stage.
- Review and Approval process: Monthly Progress meeting
  - A weekly progress meeting is to be held to ascertain weekly progress on the process. This would be a rather informal presentation of the weeks progress, however using the required format.
  - A monthly presentation would also be held for the benefit of the steering group.
- Team members:
  - Team leaders are to be selected. This ideally would be one team leader per department or section. It must be noted that ALL departments are involved and all would have the similar output required. In other words even support functions like Human resources have a role to play and savings to deliver. This may be more important since support functions are direct overheads to the company.
  - Team leaders will then select their teams according to functionality required. There can be up to six people on the team. An important point to note is that a union representative from each department must be a part of the team, and be allowed to function as a team member. Also these team members should be from all levels in the organisation.

### 3.3.3 Step 3 - Idea Generation

Figure 29:




- Select a pilot section to do the first exercise.
- It is important that the department selected would be one where there would be relative success. If the first department succeeded it will give the organisation the confidence to continue with the remainder of the departments.

#### 3.3.3.1 Idea Generation

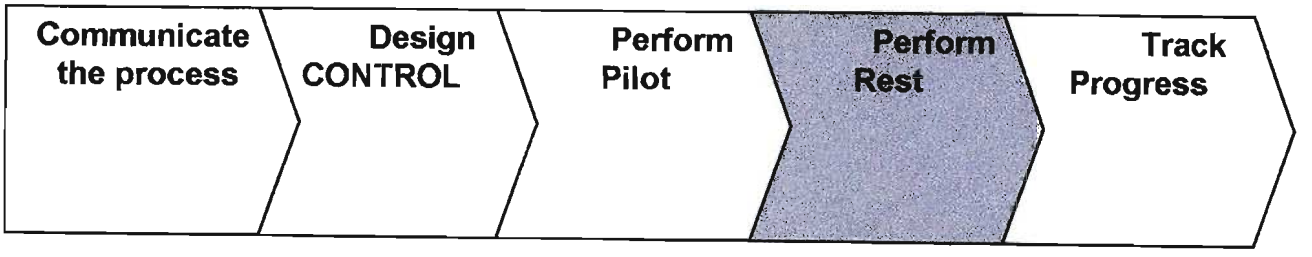
- Map the process.
  - Mapping the process involves laying out of the process as it would ideally be laid out, thereby eliminating the waste streams prevalent in the process. Over the years many unnecessary steps become part of the process, mainly due to beauracracy or poor discipline. These unnecessary steps must be eliminated and a fresh look taken at the process. Mapping the process will be discussed shortly.
- Benchmark the organisation's departments.
  - Quite a bit has been said in Chapter two about the process of benchmarking. In summary consistent worksheets or questionnaires need to be sent out to other smelters that need to be benchmarked against. The feedback is to be matched logically with the smelters situation and then direct comparisons are to be made. Once this is done, the areas of concern are to be highlighted and addressed.
- Define the gap

- Once mapping the process and benchmarking is complete, the team should be in a position to define the gap and have an understanding of what figures need to be reached.

- Brainstorm high impact areas
  - Big money savers or large gaps with benchmark organisations should be the first areas to start with.
  - Ideas should be obtained as to how to overcome this situation in order to move in line with benchmark organisations.
- Idea approval
  - Ideas should be written up in standard format forms requiring all the necessary information. A copy of these forms is in shown later in the chapter on p26.
- Syndicate the ideas with the teams and the departments for buy-in and get ideas signed off by relevant stakeholders.
- Present savings to steering committee
  - prepare presentation pack
  - practice presenting
  - present and get management approval
  - It is important that the ideas presented and the saving predicted are realistic and achievable. The pilot team must remember that the Unions are watching critically what is presented to them. If this presentation succeeds then approval will be given to proceed with the remainder of the departments.

### 3.3.4 Step 4 – Perform remainder of departments

Figure 30:




- The CTG project plan can be as follows:

- **The teams:**
  - **First Phase:** Finance, Carbon 1, Red A 1, Red B&C 1, Casthouse 1.
  - **Second Phase:** BMS, Projects, Carbon 2, Red A 2, Red 2.

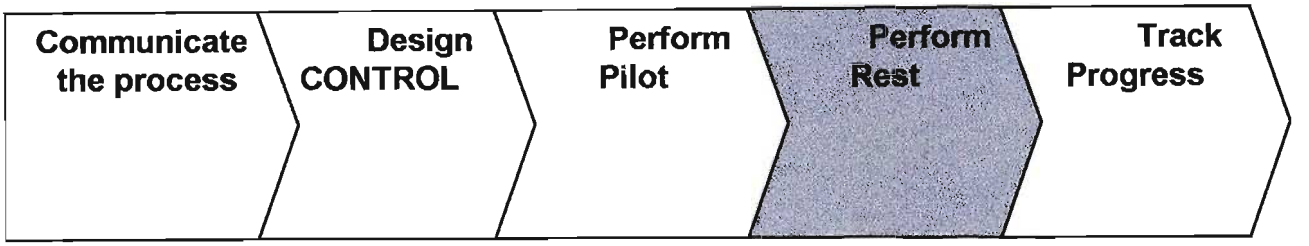
Figure 31:

| Task | From | To | Presentation |
|---|---|---|---|
| Pilot project | 15-Aug-99 | 30-Sep-99 | 30-Sep-99 |
| First Teams | 04-Oct-99 | 04-Nov-99 | 08Nov-99 to 11-Nov-99 |
| Second Teams | 08-Nov-99 | 09-Dec-99 | 10-Dec-99 to 15-Dec-99 |

Presentation in this context means the end of the exercise for that particular department

### 3.3.5 Step 5 – Continue with other departments

Figure 32:

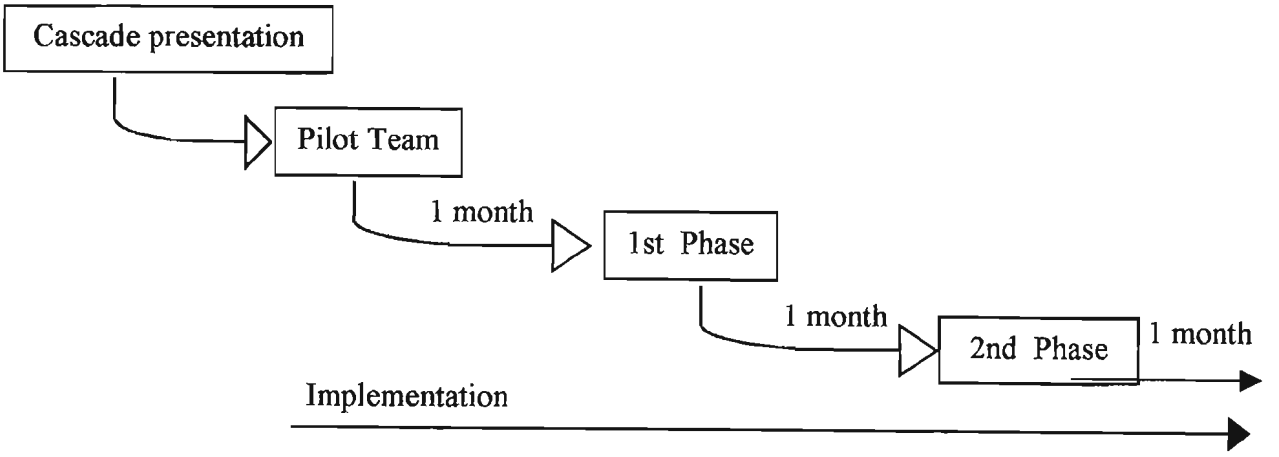



- Select and train team leaders.
  - This should at least be a one day session to cover process plus documentation.
  - It is important that all the team leaders have a common vision and understand the process thoroughly.
- Venue: for example, auditorium.
  - A large enough venue needs to be chosen to ensure that all the teams could fit in.
  - An open plan cubicle type arrangement is preferable.

- All facilities must be provided for the team to work from for example, computer network points, computers, telephones, sufficient desk space, flip charts, writing and presentation material, etc.
- An area to 'park ideas' as they are suggested. This should be open to anyone from the team to other departments sitting adjacent to them.

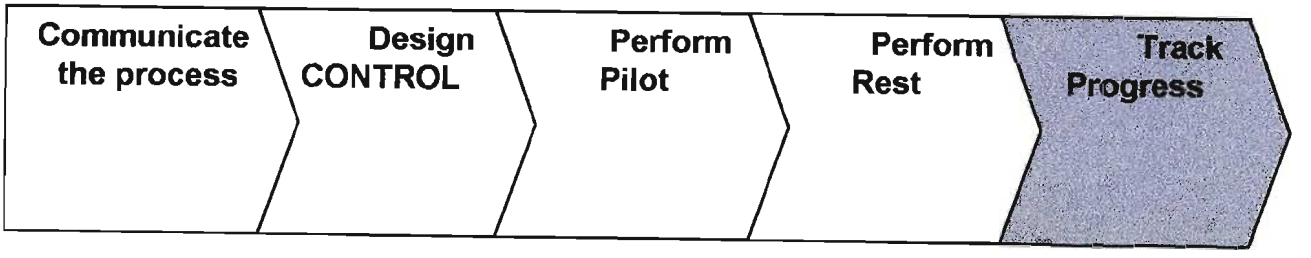
- Run the individual processes.

Figure 33: Summary flow chart of process to be followed




### 3.3.6 Step 6 – Track progress

Figure 34:




- Implementation Tracker.
  - A central person need to compile a summary of all the departments combined.
  - To do this the individual needs to track each departments progress and compile a summary for the total organisation progress.

- Monthly feedback at CI meeting. Manager to present actual versus plan on implementation and impact on fixed cost.
- Quarterly Appraisal of progress.
- Success will be measured in terms of fixed cost actual versus budget.
- The target for savings at Bayside Aluminium was twenty percent of total controllable fixed costs.

### 3.4 Mapping the Process

In some organisations change does not happen as rapidly as it should. Change also does not occur favourably in order to eliminate waste and smooth out processes. Rather processes become clumsier with more additions and rules that become historical legends that are difficult to get rid of. Therefore a system like Mapping the Process aims to simplify the process and eliminate all the wasteful steps thereby making the process simpler and more cost effective.

The procedure followed is

- Use a clean sheet of paper.
- Map the process from the input stage until the output stage.
- Do not question the stages as they are written down.
- If there are more than one outputs, allow the process to branch out into the adjacent process and map the branch process.
- Once the process has been placed onto paper go back to the beginning and take each step asking the following questions
  - Why are we doing this step?
  - Is this step necessary?
  - Is there a better way to perform this step if it is necessary?
- Start to draw the new improved way of doing the process on a clean sheet of paper.
- This process may sometimes require more than one iteration in order to explore all avenues.

A good example of the benefits of mapping the process can be seen using the Casthouse example below. During mapping the process many inefficiencies were eliminated and steps contributing to inefficiencies were reengineered. The result was

- Improved and simpler workflow
- Less equipment – less equipment to produce the same quantity means less costs and more profit
- Visibly improved layout
- Clearer logistics

Figure 35: **Before**

Bayside's Casthouse has low productivity levels, and poor capacity utilisation. (Typical of much of the South African Industry).

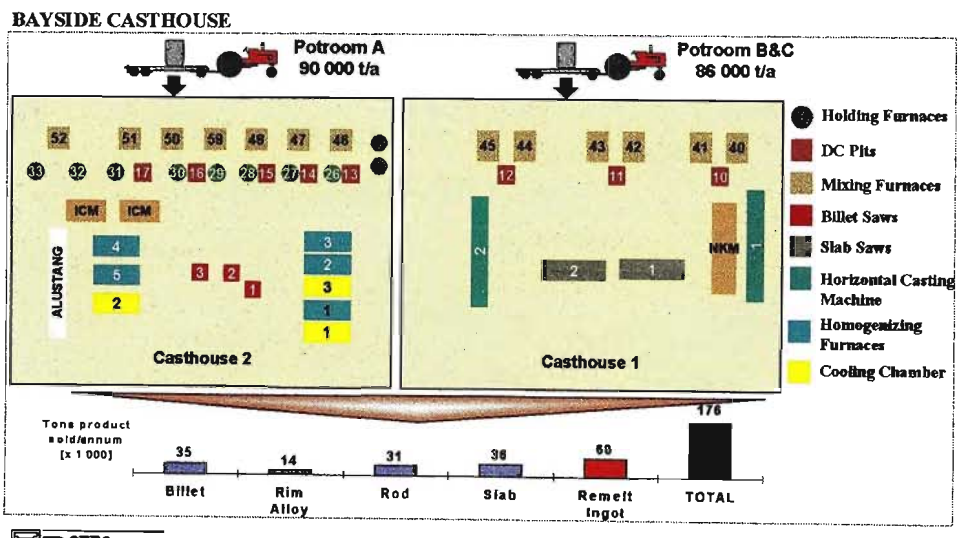
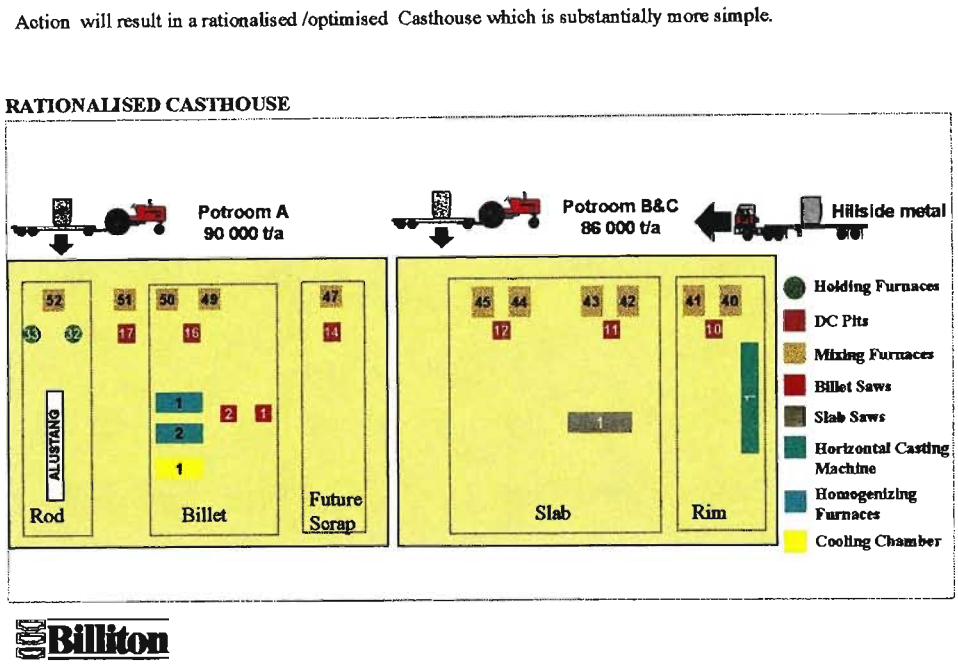


Figure 36: **After**




Reference – Bayside Aluminium network – L /BG/PS/BGA

Author - J Wilson – 1999

In summary mapping the process has many benefits to the organsiation and this should be a process that is entrenched into the culture of the organisation. The learning's that come out of using this process are

- Focus on simplification
- Elimination of waste
- Idea of doing more with less

## 3.5 The progress presentation

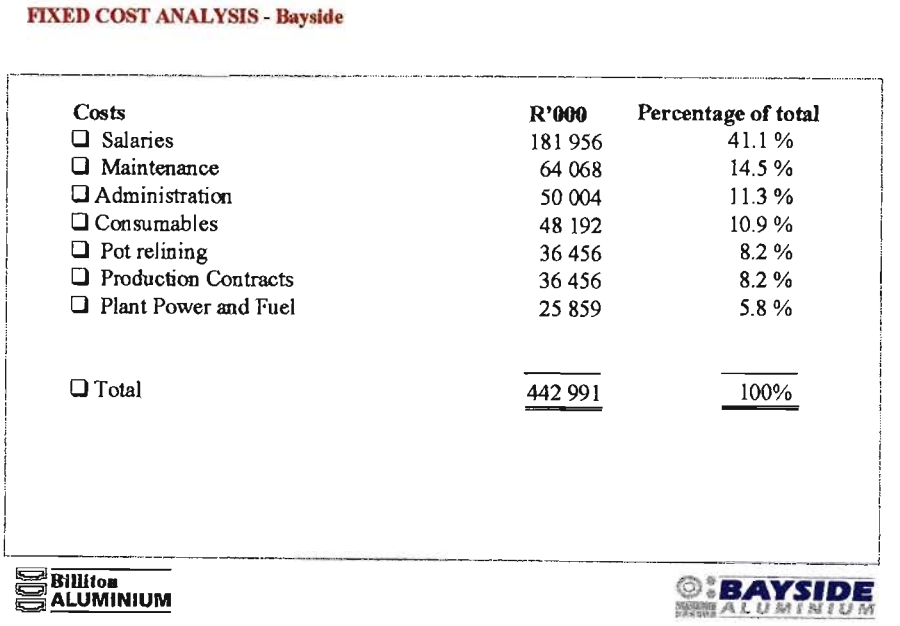
The presentation format used to track the progress of each teams performance is very important since

- To ensure consistency of reporting costs.
- Similar scales to differentiate deviances.

- For the steering committee to be able to directly compare performance of different departments.
- For the rest of the organisation to be able to see the same presentation and immediately identify with it in different areas.
- This presentation pack will form the overall plant presentation which will be presented to shareholders on the plant appraisal.

Below is an explanation of each graph used to form the presentation pack

Figure 37: **Slide 1**




Reference - – Bayside Aluminium network – L /BG/PS/BGA

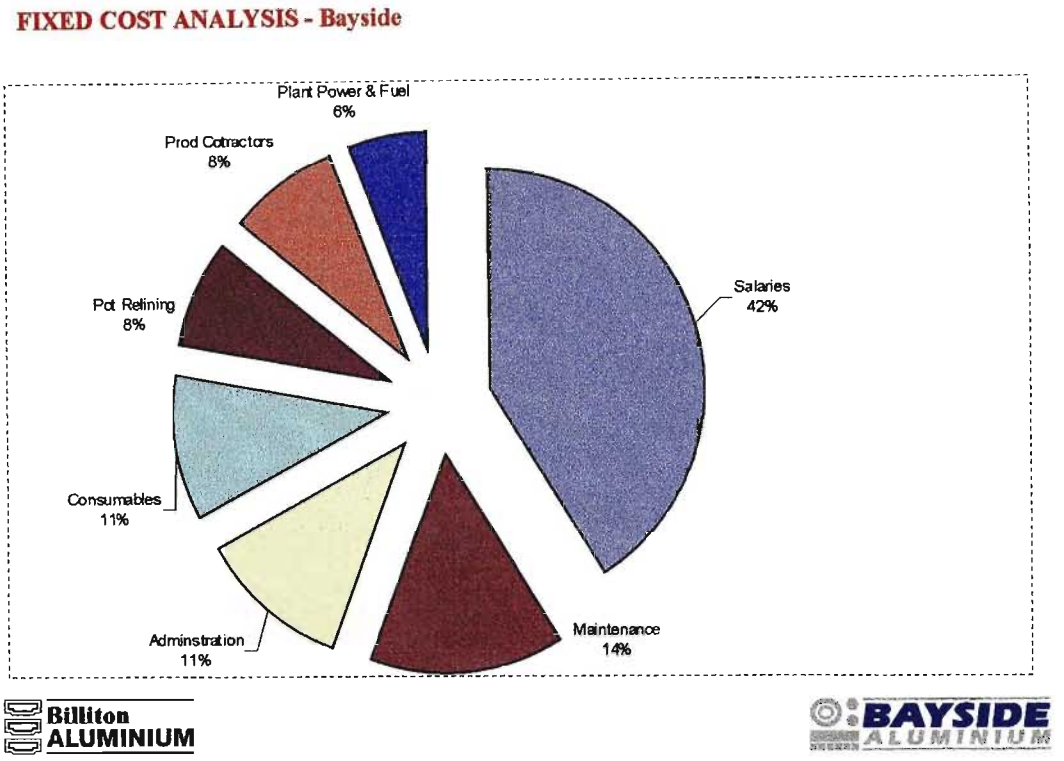
Author - J Wilson – 1999

The above slide illustrates the following

- The breakdown of the major costs incurred by Bayside Aluminium.
- The percentage makeup of each of the major costs. This would make it easier to focus on the necessary areas.

- Note that these are annual costs.

Figure 38: **Slide 2**

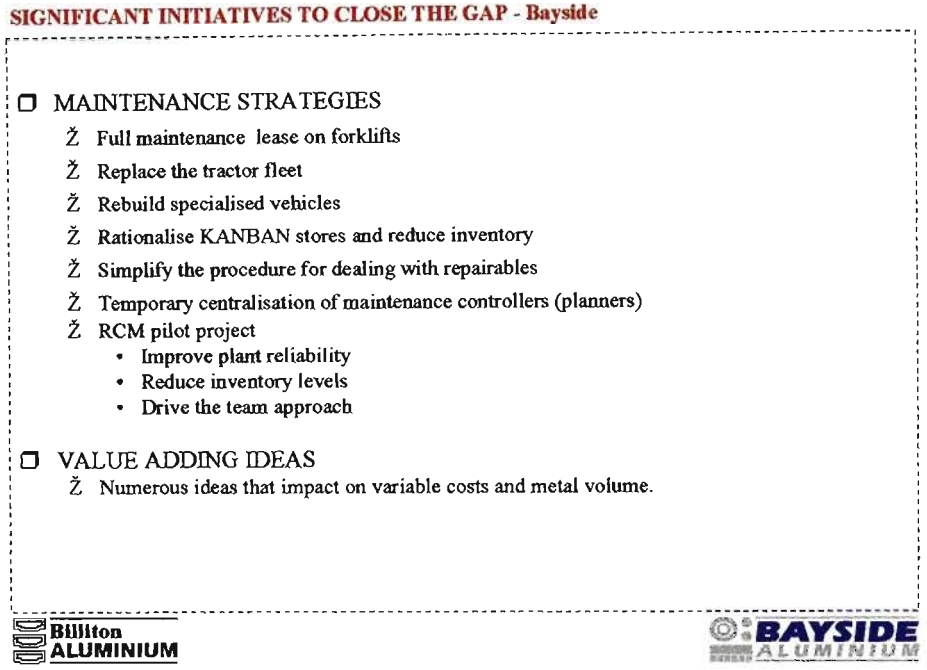


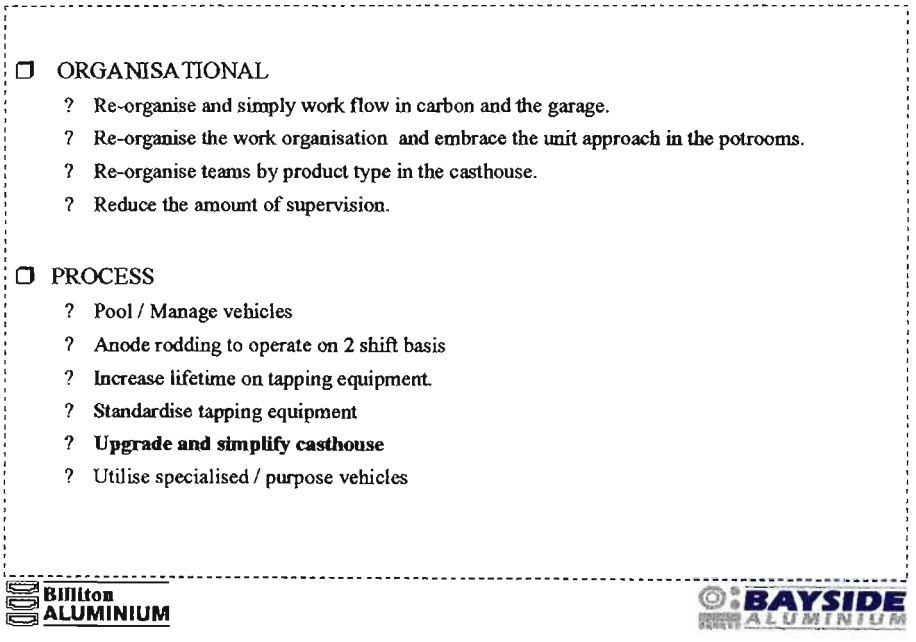

Reference – Bayside Aluminium network – L /BG/PS/BGA

Author - J Wilson – 1999

- The pie chart above is simply an graphical illustration of the costs presented on the previous slide
- The pie chart however makes it clearer to visualise the high costs areas, especially when comparing departments

Figure 39: **Slide 3 – Initiatives**



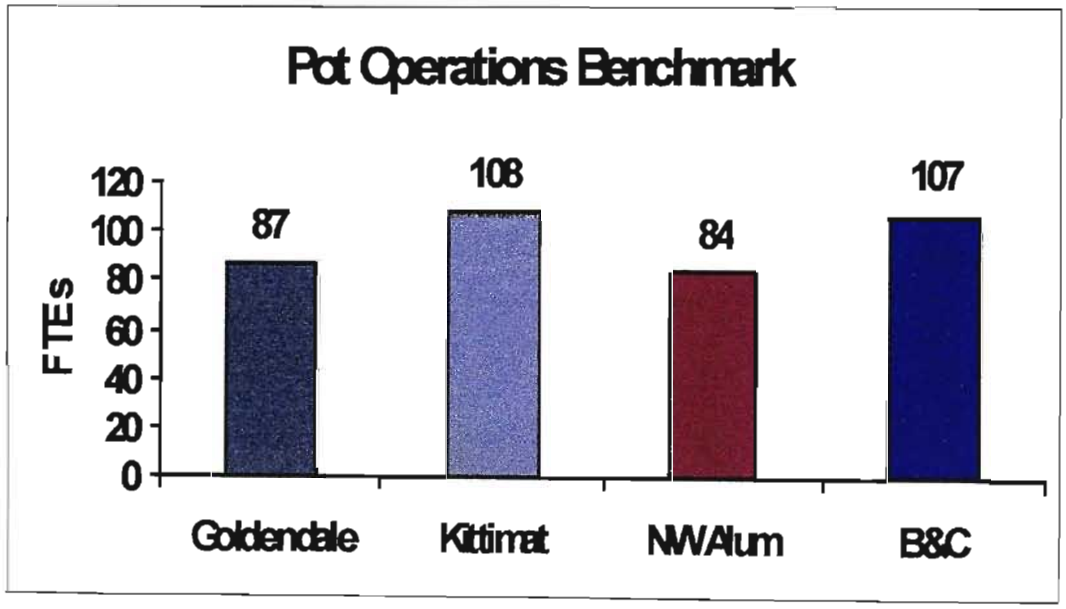

Reference – Bayside Aluminium network – L /BG/PS/BGA

Author - J Wilson – 1999

The above slides illustrate

- Significant areas of attention that the team is focussing on in order to perform the reengineering process
- It is not looking at simply reducing people numbers but rather looking at making processes more efficient. If the process thereafter requires fewer people to operate it then it will be a fixed cost saving
- All areas of the process are being looked at for opportunity, for example, process, maintenance and organisational

Figure 40: **Slide 4 – Benchmark slide**




Billiton ALUMINIUM

BAYSIDE ALUMINIUM

Reference – Bayside Aluminium network – L/BS/ZZ/BSZ/CTG
Author – MS Khan - 1999

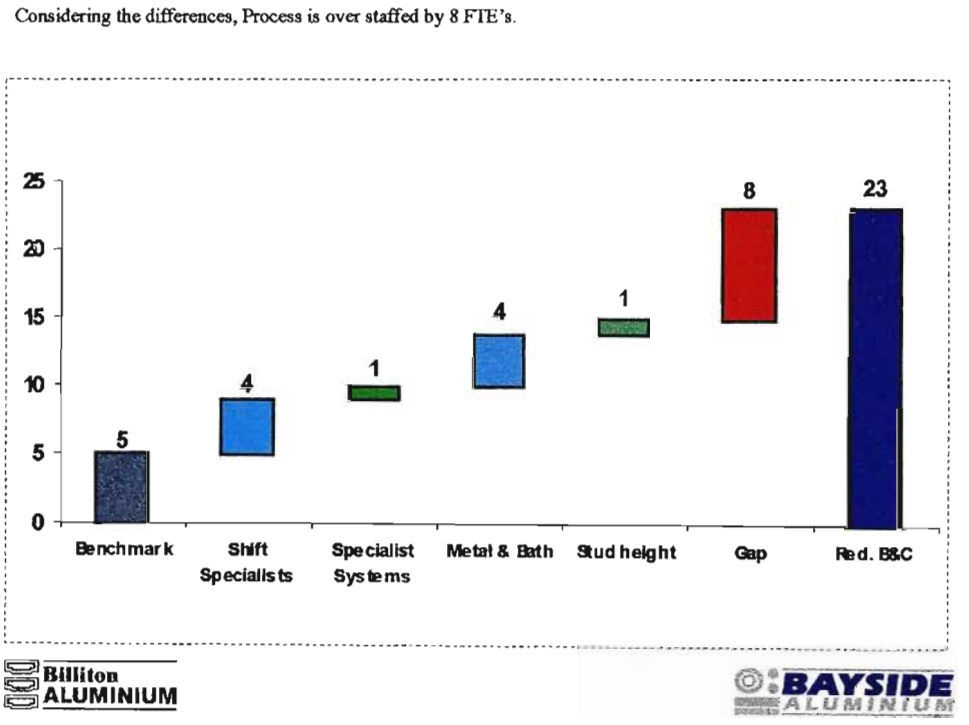
The above graph illustrates

- The benchmark smelters versus Bayside Aluminium's department
- It is easy to decipher the difference in numbers between the benchmark smelter and Bayside Aluminium and ascertain the gap.

Figure 41: **Slide 5 – Actual gap graph**

The waterfall graph below illustrates

- Benchmark figures against Bayside Aluminium's actual figures
- The justifiable numbers due to Bayside Aluminium's given circumstances
- The gap after all justifiable numbers have been taken into account
- This is the gap that Bayside Aluminium needs to eliminate in order to match world class performance




Reference – Bayside Aluminium network – L/BS/ZZ/BSZ/CTG

Author – G Pretorius - 1999

Table 5: **Slide 6 - Ideas table – 2C form**

**TOTAL SAVINGS FOR POT/DAYSHIFT OPERATIONS IS R 2,72 MILLION**

| | | 1999 | 2000 | | | |
|---|---|---|---|---|---|---|
| | | Qtr4 | Qtr1 | Qtr2 | Qtr3 | Qtr4 |
| BSR | Pot Operation contractors to be replaced | | 110 | | | |
| BSR | Close Dayshift store | | 90 | | | |
| BSR | Scrap one Dayshift tractor and trailor | | 60 | | | |
| BSR | AE poles to be delivered to pot | | 160 | | | |
| BSR | Section 6 operator to do G-Line as well (anode changers to do pot cover in G-Line after anode changing) | | | 360 | | |
| BSR | Contract out AlF3 charging | | | 60 | | |
| BSR | Reduce supervisory level by two positions | | | 390 | | |
| BSR | Reduce PPE consumption by improved control | | | | 40 | |
| BSR | Scrap anode changer 5 due to P-Line conversion | | | | | |
| BSR | Stop breeze consumption due to gas preheating | | | | | |
| BSR | Optimise leave reliefs to have one per twelve operators per team | | | 360 | | |
| BSR | Optimise Skimming Contract | | | 150 | | |
| BSR | Use people of the correct level in operations | | | | | |
| BSR | Combine start-up operators and flux correction operators and perform start-up on shift and 24hrs flux corrections | | 630 | | | |
| Subtotal 1 | | 0 | 1,070 | 1,320 | 40 | 0 |
| Acc total 1 | | 0 | 1,070 | 2,390 | 2,430 | 2,430 |

Billiton ALUMINIUM

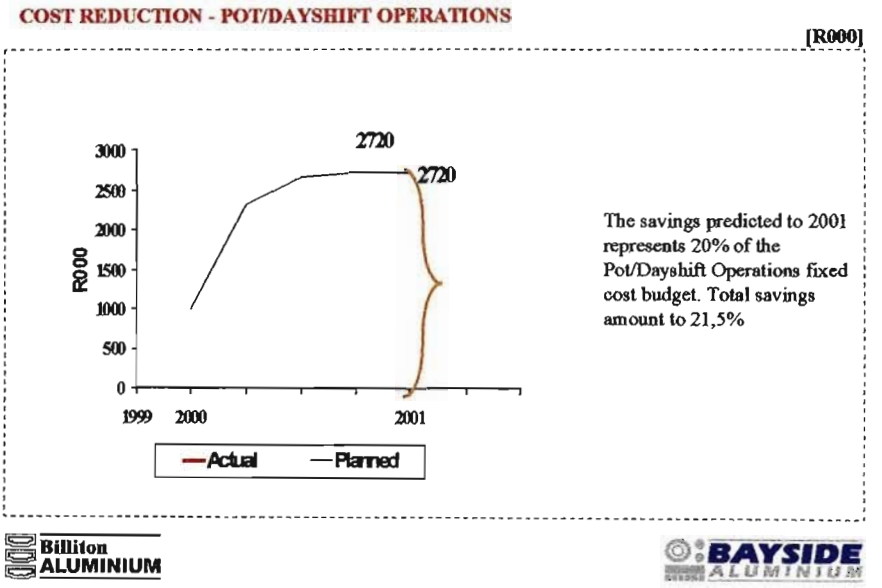
BAYSIDE ALUMINIUM

Reference – Bayside Aluminium network – L/BS/ZZ/BSZ/CTG/Pot Operations
Author – MS Khan – 1999

The above slide illustrates

- Ideas that are documented and approved
- The approximate timeframe when these ideas will be implemented
- The value of the idea to be implemented
- The sum total of the savings expected

Figure 42: **Slide 7 - saving expected – actual versus budget**

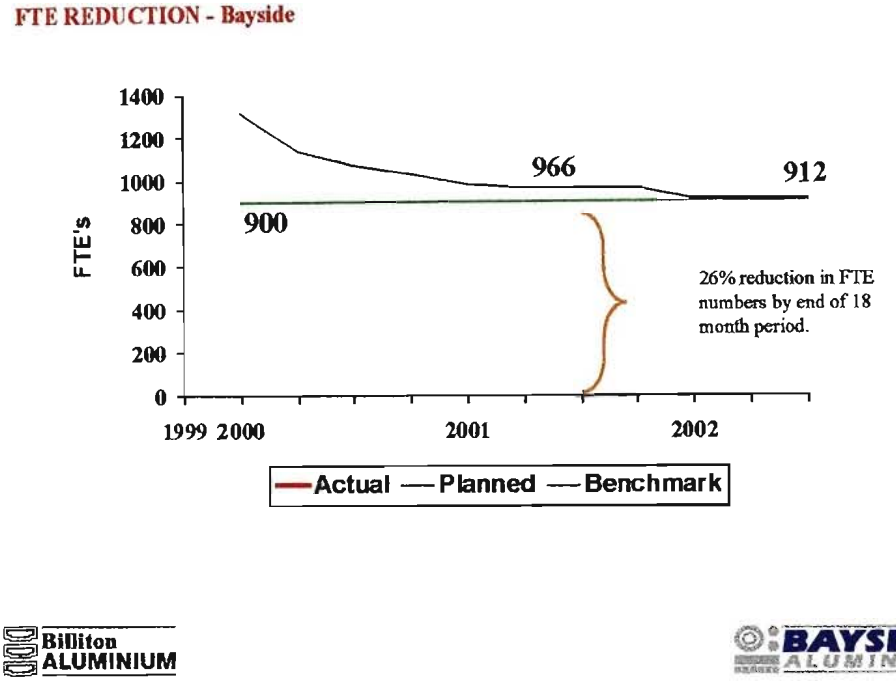



Reference – Bayside Aluminium network – L/BS/ZZ/BSZ/CTG/Pot Operations
Author – MS Khan - 1999

The above slide illustrates

- Total costs required to be saved
- The actual value once tracking begins into the required quarter

Figure 43: **Slide 8 - Full time employee reduction**



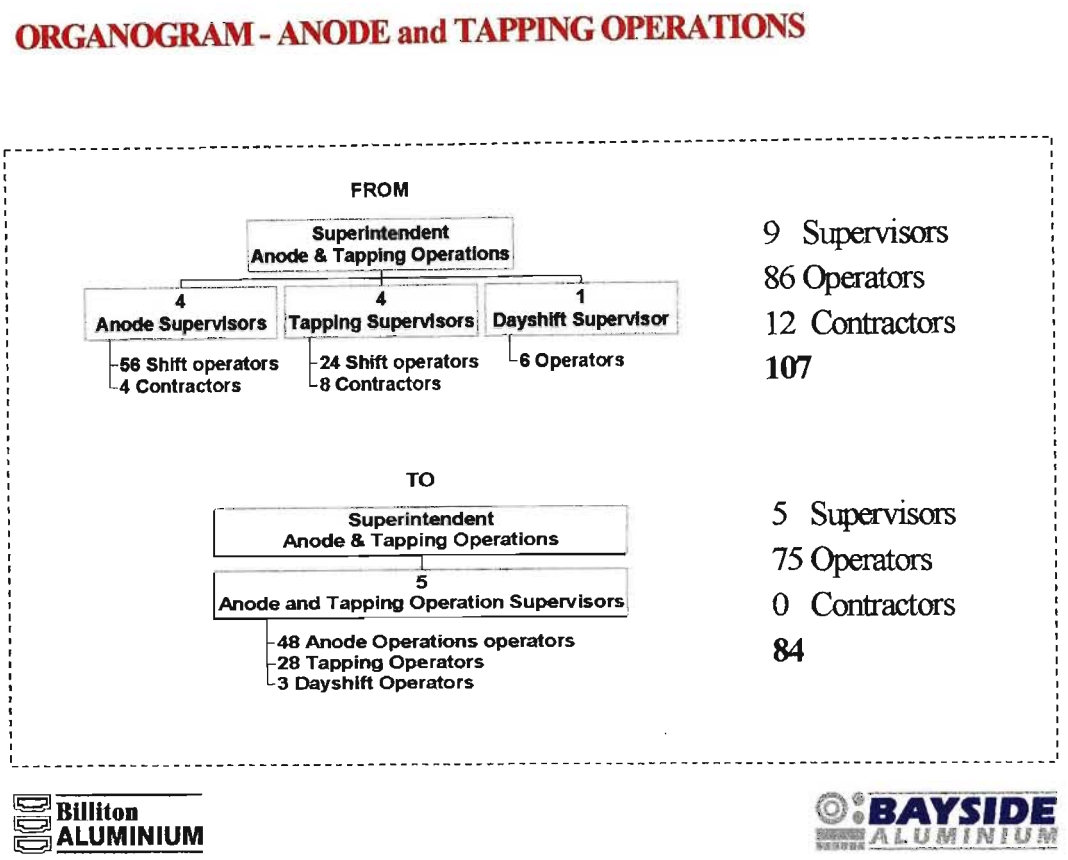

Reference – Bayside Aluminium network – L /BG/PS/BGA

Author - J Wilson – 1999

The above slide illustrates

- Benchmark target FTE numbers to be reached
- Planned versus actual time taken to reach the target according to the plan

Figure 44: **Slide 9 - Simplified organogram**




Reference – Bayside Aluminium network – L/BS/ZZ/BSZ/CTG/Anode Operations

Author – A Pienaar - 1999

The above slide illustrates

- The amount of people needed after the reengineering exercise
- Simplified organsational structure after reviewing the process

Figure 45: **Slide 10 - Reduction in other resources**

**SUMMARY OF SAVINGS ANODE and TAPPING OPERATIONS**

| Dept name | Dept Manager | | | | | Date | | |
|---|---|---|---|---|---|---|---|---|
| | Planned | | | | | | | |
| | 2000 | | | | 2001 | | | |
| **Vehicle Types** | Qtr1 | Qtr2 | Qtr3 | Qtr4 | Qtr1 | Qtr2 | Qtr3 | Qtr4 |
| Bakkies | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Motor cars | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Motor bikes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Four wheel Scooters | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Battery Cars | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tractors | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| Forklifts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Anode chargers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WCB | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Choppers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Alumina/Alf3 trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Paste Chargers | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| FE Loaders | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BT Machines | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 |
| Pot Trimming Vehicle | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trailers | 27 | 27 | 25 | 25 | 25 | 25 | 25 | 25 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 42 | 41 | 39 | 38 | 38 | 38 | 38 | 38 |

Billiton ALUMINIUM

BAYSIDE ALUMINIUM

Reference – Bayside Aluminium network – L/BS/ZZ/BSZ/CTG/Anode Operations

Author – A Pienaar - 1999

The above slide illustrates

- Other resources are also reviewed and tracked
- Removal of other pieces of equipment also have a time line

### 3.6 Capturing of ideas

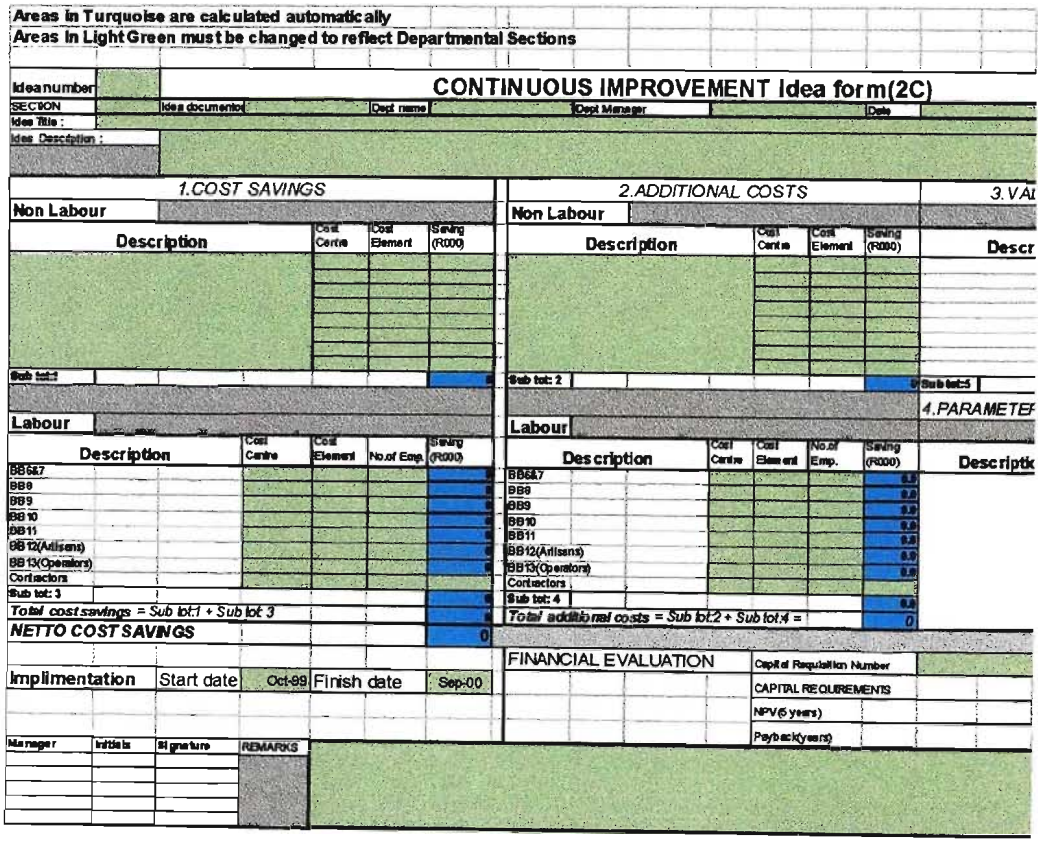
Once ideas have been formulated, they need to be captured into a formal system, syndicated and signed off by all the relevant departments. It is important that ALL parties linked to the

ideas are consulted. This is due to the reason that an idea in one particular department may have implication or an influence on how another department operates. It is also important that senior people sign for approval of the ideas since this will enhance ownership.

It is also important that the set of forms used for approval of ideas is standardised and used by the entire organisation and all the reengineering teams. The form also must contain all the relevant information necessary to complete the idea for example, capital required, action steps etc.

Below are examples of the forms used at Bayside Aluminium

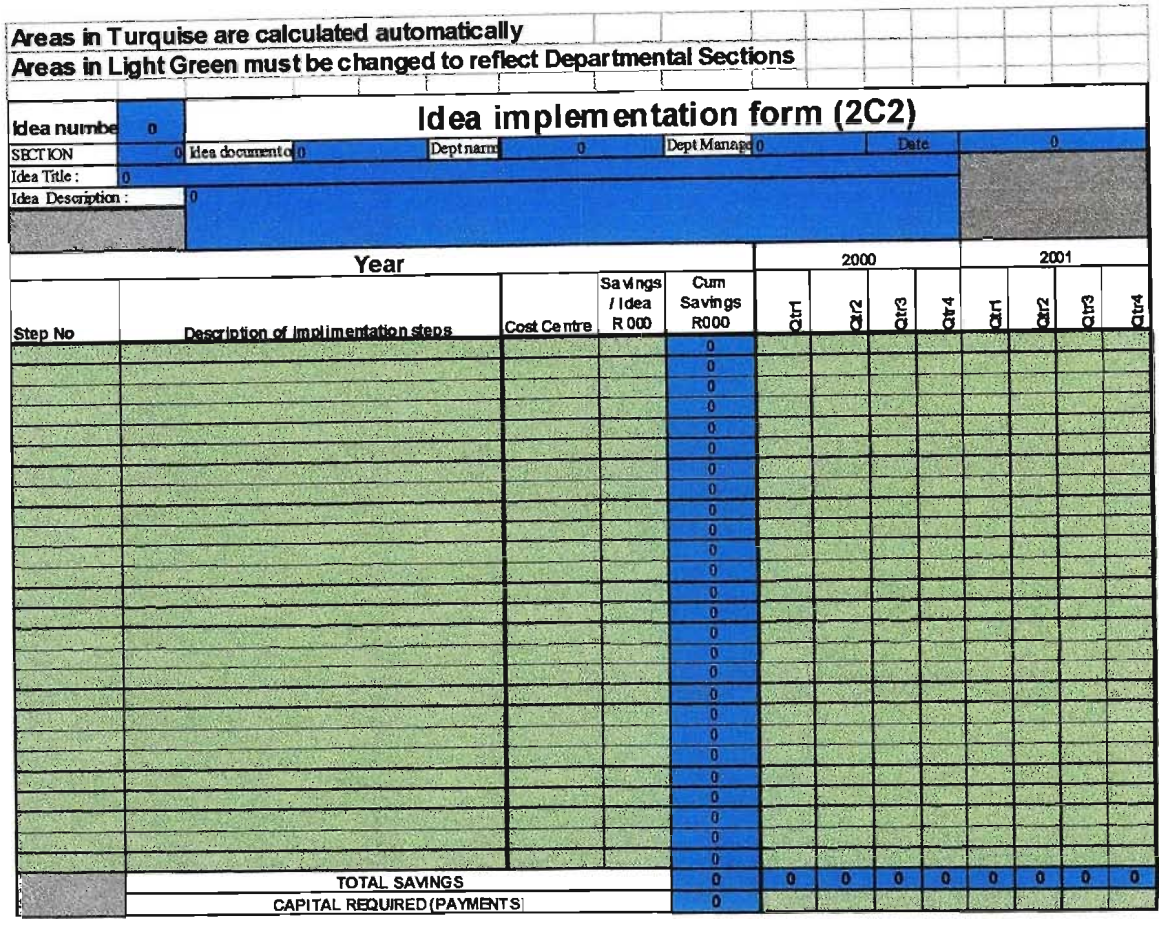
Figure 46: **Idea form**




Reference – Bayside Aluminium network – L/BS/ZZ/BSZ/CTG/Forms

Author – J Wilson - 1995

Figure 47: **Idea implementation form**



Areas in Turquise are calculated automatically
Areas in Light Green must be changed to reflect Departmental Sections

**Idea implementation form (2C2)**

| | | | | | |
|---|---|---|---|---|---|
| Idea numbe | 0 | | | | |
| SECTION | 0 | Idea documento | 0 | Dept nam | 0 |
| Idea Title : | 0 | | | | |
| Idea Description : | 0 | | | | |

| | | | | | 2000 | | | | 2001 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | | | | | | | | | | | | |
| Step No | Description of implimentation steps | Cost Centre | Savings / Idea R 000 | Cum Savings R000 | Qtr1 | Qtr2 | Qtr3 | Qtr4 | Qtr1 | Qtr2 | Qtr3 | Qtr4 |
| | | | | 0 | | | | | | | | |
| | | | | 0 | | | | | | | | |
| | | | | 0 | | | | | | | | |
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| | | | | 0 | | | | | | | | |
| | | | | 0 | | | | | | | | |
| | | | | 0 | | | | | | | | |
| | | | | 0 | | | | | | | | |
| | | | | 0 | | | | | | | | |
| | TOTAL SAVINGS | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | CAPITAL REQUIRED (PAYMENTS) | | | 0 | | | | | | | | |

Reference – Bayside Aluminium network – L/BS/ZZ/BSZ/CTG/Forms

Author – J Wilson - 1995

### 3.7 Idea syndication

Ideas need to be in draft format and then discussed with the teams involved who are to implement the ideas and work with the changed situation. Ideas also need to be syndicated with senior line management. An understanding and support of the idea by senior line management would make it easier during formal idea approval stage. Once ideas have been syndicated with the relevant people, defined timelines need to be allocated to the idea. The individual implementing the idea must remember to allocate realistic timelines. Very often

ideas are input without thorough research and timelines are passed. The implications of this happening is that the people or equipment allocated to be removed from the system, may be removed on time, without the new system of working being implemented. This can cause operational problems and lack of ownership of responsibilities. This may cause ultimate failure of the idea and higher costs instead of cost savings.

To summarise idea syndication and approval is a critical phase of the process since this will gather buy-in. Idea syndication also means involvement of the all the relevant role players in the organisation who are needed to make this reengineering process a success.

### 3.8 Selection of employees for retrenchment

The selection criteria for employees needed careful thought to

- Ensure fairness
- Ensure that the organisation would retain most of whom they would want to retain
- Ensure that the Unions agreed with the process and had buy-in into the method used

The selection criteria was important as this would ascertain the future morale, trust and motivation for employees, who may only be required to leave at the latter end of the eighteen month period. It would also be important to the workforce who was to place their trust in Management's decisions throughout the process and after the process was completed and normal operations ensue.

Below is a list of selection criteria taken from one of the reengineering procedures developed by the Human Resources department. The criteria details requirements for selection based on a negotiations between Bayside Aluminium and Unions.

### 3.9 Selection criteria

Application of Selection Criteria

The following steps will be followed in applying the selection criteria in each Department:

- Number and positions to be declared redundant is determined by the Departmental CTG team.(Let us say the number is "X" )

- The Departmental Manager and the General Manager approves the CTG team's recommendations and ensures that they are in line with Bayside Aluminium's business objectives.

- All employees (LST(leadership and specialist team) and OMETs(operators and artisans) separately) are assessed and scored in terms of the selection criteria

- "X" Employees with the lowest points, per department and position, after application of the criteria are identified and notified. These employees are the affected employees in that department.

- As CTG ideas get implemented employees become redundant, redundant unaffected employees will then be transferred into non-redundant positions (which are not going to be declared redundant under CTG) which are being occupied by affected employees.

- Affected employees in non-redundant positions will exit the company in order of increasing points; i.e. employees with the lowest points will leave first.

- Affected employees in redundant positions will automatically exit the company as soon as their positions are declared redundant, subject to notice requirements.

- In the case of OMET employees, should the number of employees with lowest points exceed the required number of employees to be retrenched, the secondary criteria will be applied.

- In the case of LST employees, should the number of employees with the lowest points exceed the required number of employees to be retrenched, individual service records will be taken into consideration.

- The Superintendent Human Resources will review and certify that correct information as currently stored in the SAP system has been used where required in the application of the criteria.

Reference – Bayside Aluminium network – Procedure PR-BHI-007 - "Close The gap" (CTG) Retrenchment process

Author – L Van Tonder - 1999

The selection criteria had to be different for the different levels of personnel in the organisation. One of the reasons was that qualifications would obviously be higher on the higher levels as a requirement of the organisation. Alternatively, qualification requirements would obviously be lower on lower levels in the organisation due to skill requirements and would therefore have to be treated as such.

The criteria had to also focus on secondary selection criteria. This would be needed in the case of two or more employees having the same rating. Once these lists were drawn the required number of people were chosen beginning with the person with the least amount of points.

Table 6: **Primary selection criteria – OMET employees (Operators and Artisans)**

| Criteria | Description | allocated |
|---|---|---|
| 1. **Literacy level** (Qualifications reflected on the Business Information System) as at 31/01/2000 | Up to NQF level 1 or Std 7<br>Up to NQF level 2 or Std. 8<br>Up to NQF level 3 or Std. 9<br>Up to NQF level 4 or std 10/N3 + trade<br>NQF level 5 or N6/degree/diploma or higher | 0<br>10<br>20<br>30<br>50 |
| 2. **Skill level as at 31/01/2000** | Employee performs duties of a manual and/or repetitive nature. Minimal skill, discretion and judgement are required.<br><br>Employee performs a limited degree of discretion and judgement, which may become virtually automatic with | 0<br><br>20 |

| | | |
|---|---|---|
| | practical experience.<br><br>Employee performs a considerable degree of discretion and judgement and demonstrates a basic analytical ability.<br><br>Employee performs non-autonomous, non routine tasks of some complexity and exercises analytical, problem solving and decision-making skills acquired after considerable practice experience. | <br><br>30<br><br>50 |

**Skills Level Definitions Interpretation**

Table 7: **Skills Interpretation**

| Level | Interpretation |
|---|---|
| Level 1 | Employee performs duties of a manual and/or repetitive nature. Minimal skill, discretion and judgement are required. |
| Level 2 | Employee performs a limited degree of discretion and judgement, which may become virtually automatic with practical experience. |
| Level 3 | Employee performs a considerable degree of discretion and judgement and demonstrates a basic analytical ability. |
| Level 4 | Employee performs non-autonomous, non routine tasks of some complexity and exercises analytical, problem solving and decision-making skills acquired after considerable practice experience. |

Table 8: **Skills Definition**

| Level | Definition |
|---|---|
| Level 1 | Only capable of performing repetitive, low risk tasks, e.g. sweeper. |
| Level 2 | Can do tasks with supervision. |
| Level 3 | Can do tasks without supervision. |
| Level 4 | Can provide training. |

### 3.10 Calculation of overall rating

- Only skills rated must be used to calculate the overall rating.
- The overall rating is the average of the skills rated, e.g.:

Table 9:

| SKILL 1 | SKILL 2 | SKILL 3 | SKILL 4 |
|---|---|---|---|
| 2 | N/A | 2 | 3 |

$$\frac{2+2+3}{3}$$

Actual overall rating = 2,3

- From *x*,1 to *x*,4 to be rounded down.

From *x*,5 to *x*,9 to be rounded up.

### 3.11 Secondary Selection Criteria – OMET Employees

Table 10:

| Criteria | Description | nt allocated |
|---|---|---|
| Last in first out will apply where more than the number of employee identified. | Months continuous group service as reflected on SAP. Continuous group service means the uninterrupted service with Bayside, Hillsi other Billiton Company. | N/A Employees with the least service will be affected first |

### 3.12 Primary Selection Criteria – LST Employees

Table 11:

| | Criteria | Description | | nt allocated |
|---|---|---|---|---|
| 1 | **Performance** (Average of the sum of the points allocated, derived from the MBO ratings between the period 01/07/1997 and 30/06/1999, as reflected on the Remuneration system) | **Rating** | | |
| | | Unacceptable Performance | ( 5 ) | 0 |
| | | Poor Performance | ( 4 ) | 10 |
| | | | ( 3 ) | 20 |
| | | Above Average | ( 2 ) | 35 |
| | | Excellent (Water walker) | ( 1 ) | 50 |
| 2 | **Qualifications** (Qualifications as reflected at 31/01/2000 on the Business Information System vs. required as per job specification/competency profile). | Does not meet the requirements. | | 0 |
| | | Meets the requirements. | | 30 |
| | | Exceed the requirements. | | 50 |

### 3.13 Secondary Criteria

- The first secondary criteria to be used for further selection will be academic qualifications. Those with the least academic qualifications will be identified first as affected employees. The standard SAP report will be used in this instance.

- Should the need for further selection criteria exist, the average absenteeism over the past 2 years will be used as the next selection criteria. A pro-rata calculation for employees with less than 2 years service will apply. Those who were absent most frequently will be affected first. The standard SAP absenteeism report will be used in this instance.

- Should a need for further selection criteria exist, all valid disciplinary actions will be taken into account. The final outcome will be used as measurement. Those with most/more serious transgressions will be affected first.

Reference – Bayside Aluminium network – Procedure PR-BHI-007 - "Close The gap" (CTG) Retrenchment process

Author – L Van Tonder - 1999

### 3.14 Handing of retrenchment letters

Once the required number of people had been selected using the criteria above, these lists must then be audited by the Human Resources department. The Human Resources department must perform a sanity check on the results and proceed to draft retrenchment letters for the necessary people.

Once the letters are drafted and syndicated with the relevant departments as a recheck, the letters must then be systematically handed to each individual within a space of two days. The employees must sign on receipt of each of their letters. It is important that the entire organisation does this exercise together.

### 3.15 Union involvement and communication

It was important to involve the senior Union members from the very beginning of the process due to many of the reasons mentioned in the sections above. Some of the outcomes that were obtained from involving unions in a cooperative manner rather than a confrontational one are

- Support for the process after an understanding of the need for such a process
- Continued positive involvement even through difficult circumstances

The outcome of the negotiations and information sessions held between Bayside Aluminium and the senior union members resulted in a document or contracts being established. Below is an example of one such response to Unions regarding the questions tabled at one of the meeting. All queries from unions were handled in a similar manner.

### 3.16 Response to Unions from Bayside Aluminium

*SOUTH AFRICAN WORKERS UNION*

#### 3.16.1 Social Plan

**PROPOSAL:** Bayside to take cognisance of the social plan as was Gazetted on July 23, 1999.

**RESPONSE:** Bayside agrees with this proposal. Bayside intends adopting the principles of the Social Plan to mitigate the possible adverse effects of retrenchments. To this effect, Bayside intends, as far as possible, to facilitate access to retraining and skills training to retrenched employees.

**PROPOSALS: (1), (2), (3) AND (4)**

- Use the process of LIFO, but with an agreed out off date EG. 1998-01-01.
- Pensionable age should be 50 years with as much TAX relief as possible.

- Male/Female retrenchment packages should be the same.
- Husband/wife combinations should be addressed first EG. The wife first, this would lessen the impact on the community.

**RESPONSE:** To be dealt with in the retrenchment procedure under selection criteria.

### 3.16.2 Notion of Voluntarism

**PROPOSAL:** The notion of voluntarism should be a first principle.

**RESPONSE:** The process of CTG retrenchments has been initiated partly because the voluntary process no longer permits the Company to reduce its fixed costs at the required rate.

### 3.16.3 Retirement considerations

**PROPOSAL:** Retirements should be done with due consideration to the following points:

A. Experience, skill levels and qualifications.
B. Younger employees to be considered first.
C. Sick leave abusers.
D. Correct Employment Equity numbers.

**RESPONSE:** In view of points A – C, we understand the proposal to be referring to retrenchments:
A., B., and C. to be dealt with in the retrenchment procedure under selection criteria.

E. Dealt with under MWU proposals.

### 3.16.4 Moratorium on the Employment of New Employees

**PROPOSAL:** There must be an immediate moratorium on the Employment of new Employees.

*RESPONSE:*

- ***It has always been part of Bayside's Recruitment Policy to recruit externally only if the required skills are not obtainable from within the organisation.***
- We have always given preferences to internal candidates. It is only where the skills required do not exist within the plant/cannot be acquired within a reasonable time that we have recruited externally.

A blanket moratorium on recruitment will therefore not be in the Company's interest.

### 3.16.5 Overseas Tour

**PROPOSAL:** The Union agrees to the notion of an overseas tour to investigate practices, but proposes that we agree to send two LST delegates, the reason being that the number of OMET delegation is spread widely amongst the Trade Unions in the OMET Bargaining Unit.

**RESPONSE:** Bayside believes in benchmarking. Over the years Bayside employees have undertaken benchmarking exercises. Employees are not selected for Bayside benchmarking exercises on the basis of representing certain Union constituencies for collective bargaining purposes. Parties to any of the Collective Bargaining forums, who need to research information for such purposes, must do that with their own resources. The same applies to the retrenchment exercise. The Company does not see the necessity for this proposal and is therefore not prepared to fund any overseas tours for this purpose.

---

Reference – Bayside Aluminium network – L/BH
Author – J Zitha - 1999

In summary, the dealing between Bayside Aluminium's management team and the Unions was very constructive and mature and one that other organisations can only marvel on. The main point to note is that the approach and strategy adopted towards the Unions would have to be a mature one and one that focuses on working together and involving the Union to go through the entire process.

### 3.17 Communications

Communication regarding the reengineering process is of utmost importance and needs to be done at regular intervals. Methods of communication can be

- Verbal communication by senior people including the CEO or General Manager.
- Cascade briefings to all levels in the organisation using the updated initial presentation. These cascade briefings can be given by line management.
- Flyers indicating general information about the process. One needs to be careful not to place sensitive information onto flyers.
- E-mail bi-weekly updates on the progress of the process.
- Regular meetings to talk about the reengineering process.
- Most of all the team that is performing the process needs to personally communicate with their relevant departments on the progress of the process.
- Company magazines to include articles and information about the process.

The communication process is one that determines the motivational levels of the organisation and can become a problem if not approached correctly. Also if not done correctly it could jeopardize the entire process. However if done in the proper manner, like at Bayside Aluminium, using all of the examples of communication above, can help to achieve a successful process.

## 3.18 Summary

The organisation cannot underestimate the importance of prior planning to conceptualise the reengineering process. The reengineering process needs to be regarded as a formal process in the company's history and needs to be treated with utmost respect. The planning phase must extend to the full span of the reengineering process. For this to occur even the close out of the process needs to be carefully planned. Organisations cannot afford to allow any loopholes to jeopardise any part of the reengineering process due to the long-terms effects of such a process. Personnel issues including Union involvement are items that would require immense energy from the conceptual phase of the process to the close-out phase of the process. It is also important for the organisation to recognise whether it requires external assistance to facilitate the process or some parts of it. Attempting to 'break new ground' is not advisable during a reengineering process.

# Chapter 4

# Results and Discussion of the reengineering process conducted at BHPBilliton Bayside Aluminium

# 4 Results and Discussion of the reengineering process conducted at BHPBilliton Bayside Aluminium

## 4.1 Introduction

The results of the reengineering process need to be analysed for short-term purposes as well as long-term purposes. One needs to also be candid about the results and make clear conclusions as to whether the different aspects of the process were a success. As with any process, some parts of the process may perform well while others could require an improved way of execution or formulation.

One comment made in previous chapters is that of increasing fixed costs while decreasing other costs due to the reengineering process. The team auditing the reengineering process and those monitoring continuous fixed costs need to highlight any upwards trend in costs that may be associated with the reengineering process and the way it had been implemented. If this is not done the costs could increase in areas where the reengineering teams do not have focus. A good explanation for this is in Chapter 3 where after the first reengineering process, proper steps were not put into place to mitigate the rapid massive increase in maintenance costs, which eventually threatened the success of the first reengineering process.

In the results section, some of the soft issues will also be analysed. After all a company consists of people, and it is these very same people that determine the success of the company. Therefore the people aspect, including the Union's outlook to the process needs to be analysed.

## 4.2 Research Objectives

The research objectives can be addressed as a series of questions that need to be answered. Answering these questions clarify the advantages and disadvantages of embarking on a reengineering process.

### 4.2.1 We need to answer the question - Did the retrenchment process have the real time financial benefits and are those benefits sustainable into the future?

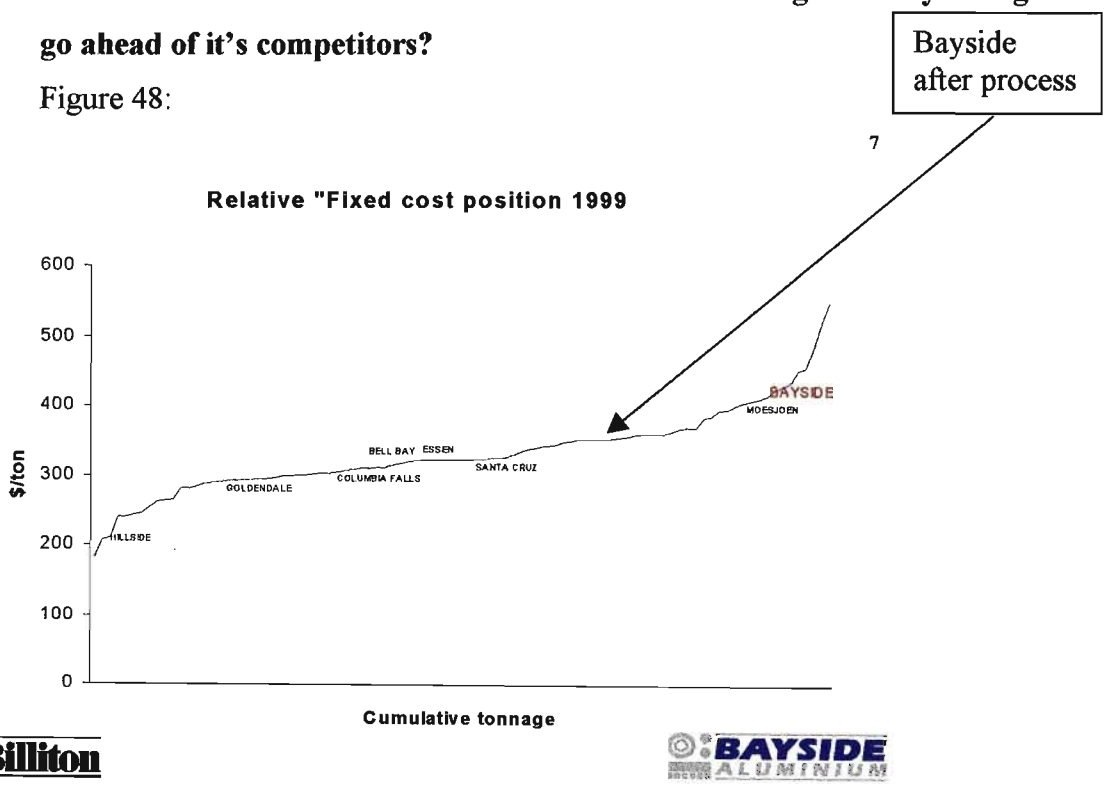
Short term – for the first year the gain was to be minimal due to

- Ideas still being implemented
- Retrenchment packages being paid to employees that were retrenched.

Therefore it is important to note that the forecasted fixed cost savings as per the budget should not be decreased for the first year due to costs like retrenchment packages. It should however in theory be easily decreased from the second year onwards due to costs like retrenchment packages having a one-year payback.

### 4.2.2 In reality does the company become a lower cost producer and move down the cost curve. Also does it move down the cost curve significantly enough to go ahead of it's competitors?

Figure 48:




Reference - Bayside Aluminium network – L /BG/PS/BGA

Author - J Wilson – 1999

Bayside Aluminium has moved down the cost curve according to the savings figures. However ,

- Bayside Aluminium still has work to do to beat it's competitors
- The above figures were produced only with cost savings, and not taking real time expenditure into account.

### 4.2.3 Does the process change the organisation's modus operandi, that is, the way it conducts it's business, in order to sustain the results of the retrenchment process into the future?

With the mapping process was used for every critical analysis for each process, many systems were changed and systems added or deleted. Therefore it was difficult to operate in exactly the same manner Bayside Aluminium had done so previously. However it must be stated that other systems crept in which were to the detriment to the reengineering process. A good example is the number of contractors used by Bayside Aluminium that increased after the reengineering process. In fact Bayside Aluminium had undertaken to reduce the number of contractors to zero with the reengineering process. Bayside Aluminium has required an average of seventy labour hire contractors since the end of the reengineering process. This was contrary to the agreement with the Unions.

Therefore it could be said that the modus operandi did certainly change post reengineering process, but not all for the better.

### 4.2.4 Is "Mapping the process", using the value chain an appropriate tool to identify waste in the organisation?

The idea of mapping the process using a clean sheet has certainly helped Bayside Aluminium to have a critical review of it's processes and the way in which it conducts business. Many synergies and waste streams were identified and dealt with as part of the reengineering process. A good example used in Chapter 3 was the simplification of

the Casthouse process. Simplification of the Casthouse has allowed for the removal of equipment, which has

- Reduced maintenance and operating costs
- Reduced manpower requirements due to less equipment
- Created a more efficient logistical flow of product

Therefore it could be stated that Mapping the Process has real benefits for any organisation as it did for Bayside Aluminium.

### 4.2.5 Is it appropriate to benchmark for competitors for the retrenchment and reengineering process?

Like many companies in South Africa, Bayside Aluminium was isolated from the world in terms of the way business was conducted. Therefore when the day arrived when Bayside Aluminium was exposed to the world and subsidies were removed, it suddenly realised that it was actually poor at it's business. Bayside Aluminium, unlike many unfortunate companies, had major advantages in terms of transport and dollar based returns and it was due to these external advantages that Bayside Aluminium was spared survival.

The only way of finding out just how bad Bayside Aluminium was at business was to look at other similar businesses. This was the process of benchmarking and striving to be like the best. Bayside Aluminium had become a benchmarking expert due to continued management drive to ensure that every aspect of the business was benchmarked. There was a conscious effort to ensure that Bayside Aluminium's people were well connected all around the world and could get information quickly. The costs involved in continuous benchmarking ensured that shortfalls in Bayside Aluminium's processes were identified quickly and were addressed swiftly in the reengineering process.

Below are the results of the benchmarking exercise done for Bayside Aluminium

Therefore in summary benchmarking was an investment that Bayside Aluminium had made and will continually payback, still in the years ahead.

Table 12:

| Item | Bayside | Hillside | Valesul |
|---|---|---|---|
| # FTE's | 1400 | 1000 | 600 |
| Maintenance | 82 | 45 | 45 |
| Consumables | 53 | 30 | 30 |
| Administration | 52 | 30 | 30 |
| Plant power & Fuel | 21 | 15 | 15 |
| Pot Relining | 25 | 20 | 20 |
| Sundry & other | 23 | 15 | 15 |

Reference - Bayside Aluminium network – L /BG/PS/BGA

Author - J Wilson – 1999

### 4.2.6 Was the decision to discontinue normal processes of natural attrition and continuous improvement and embark on a reengineering process the correct decision? Would the process of natural attrition take too long for the organisation to reduce staffing levels?

The normal process of natural attrition, that is, not filling positions as people leave the organisation is a good system for any organisation to adopt. However, Bayside Aluminium had two disadvantages on it's side

- The turnover of personnel was low
- Bayside Aluminium had to be proactive with regards to the cost saving exercise and could not afford the luxury to wait for people to leave the organisation.

Therefore choosing the reengineering process was the correct path to choose in order for Bayside Aluminium to ensure long term survival.

## 4.3 The end results - Exploring the effectiveness and benefits obtained from the retrenchment process

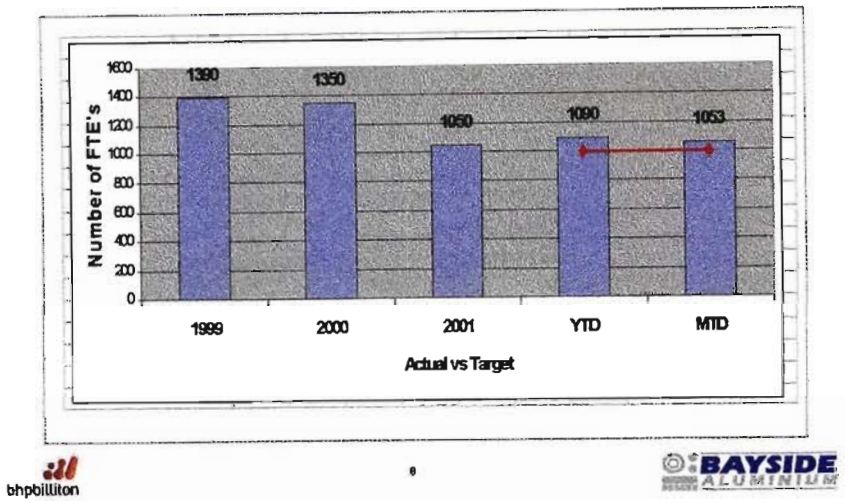
- Clearly indicate the success of the process in terms of permanent financial gains

  This issue needs to be clearly separated between personnel and plant improvements

  - Personnel retrenchments – there was a reduction of approximately three hundred and fifty people, which is a direct fixed cost saving. However unfortunately other costs rose as a result in the reduction of personnel, for example, labour hire, contract spend etc. Therefore the gains that were made with people reduction is still an amount that needs to be harnessed as a saving. It is good to note however that this saving is still here and simply waiting to be claimed.

Figure 49:

## BAYSIDE YTD FTE




Reference - Bayside Aluminium network – L /BG/PS/BGA

Author - J Wilson – 1999

The graph above illustrates the following

- Post reengineering process target of 950 permanent employees was not met. In fact Bayside Aluminium is 100 employees over strength.
- From 2001 until year to date FTE numbers have not decreased. In fact it has increased, indicating poor commitment to the reengineering process.
- In addition to over 100 employees over strength as compared to plan, Bayside Aluminium still has approximately 75 labour hire contractors on site.

### 4.4 Conclusions

- Targets have not been met by close to thirty percent
- If contractors are taken into account, the percentage goes up to 40 percent
- Plant process improvement savings – the correct method to perform process improvement in summary is
  - Identify process improvement

- Investigate process improvement
- Test process improvement
- Approve improvement
- Update or develop procedure for new method or improvement with target performance
- Implement improvement

If the above steps are used the process improvement will become a part of the process and will be entrenched as a system. However if the process improvement is implemented adhoc then the organisation runs the risk of losing the improvement due to no documented system in place to ensure that the improvement is entrenched. This is one of the shortfalls that has occurred at Bayside Aluminium where there is still a potential of savings that has not been claimed due to poor implementation. This is where benchmark organisations have the edge, in finding systems that make good business sense and entrenching them into their organisations.

- Clearly indicate sustainability of the process

  As mentioned in the point above, if the improvement system is entrenched the organisation will find ways to make improvement ideas sustainable. Bayside Aluminium is not performing well with sustainability due to

  - An uncontrolled increase in fixed costs
  - An increase in labour hire contractors

  However once again the exchange rate has come to the rescue of Bayside Aluminium to mitigate some of the slow progress of attaining the gains of the reengineering process.

- Indicate future need or viability of such a process
  - Due to Bayside Aluminium still being at a strength of 300 people above benchmark, there may still be a need in future of implementing another reengineering exercise. Also another reason that may prompt Bayside Aluminium into undergoing such an exercise, is that of increased competition. Other operators are venturing into South Africa with processes that are operated at lower cost and may become the preferred supplier in the future if they are able to make inroads into the local market. Therefore one can never discount having the need to exercise another reengineering process.

- Are incompetence issues addressed in this process?

  At least ninety five percent of incompetence cases are dealt with during this process. It is important to note that the manner in which the criteria for selection of the affected employees are fair and acceptable to the Unions. It must also not be open to victimisation of employees. In this manner the selection criteria should ensure that all non-performers and those that did not further their job skills over the past years are selected. It is the unfortunate case that at least five percent of the 'good' employees may be affected, due to secondary criteria, as mentioned in the some of the procedures discussed in Chapter 3. Unfortunately there cannot be a system that caters for each and every individuals needs.

- Is there operational stability in the organisation during and after implementation of the process?

  There is operational stability in the organisation for at least the first eighteen months. The reason being is that the affected employees leave only within the eighteen-month window. Thereafter the challenge for the organisation is to continue to operate well without these employees in the organisation. In Bayside Aluminium's case this indicated the influx of more labour hire contractors. This situation led to an increase in instability and if not controlled could spiral into a plant crisis. Labour hire contractors have the following effects on the process

  - They do not understand the process and are there for personal short-term gain.
  - They do not see the full picture of the process including the value chain.
  - The training period causes strain on the system.
  - Relationships are strained between permanent employees and labour hire contractors.

Therefore it is important to continue to monitor process stability throughout the process and into the at least the first three years after the reengineering process. For each process improvement or position retrenched, the implications to the process need to be carefully monitored and correctly adjusted.

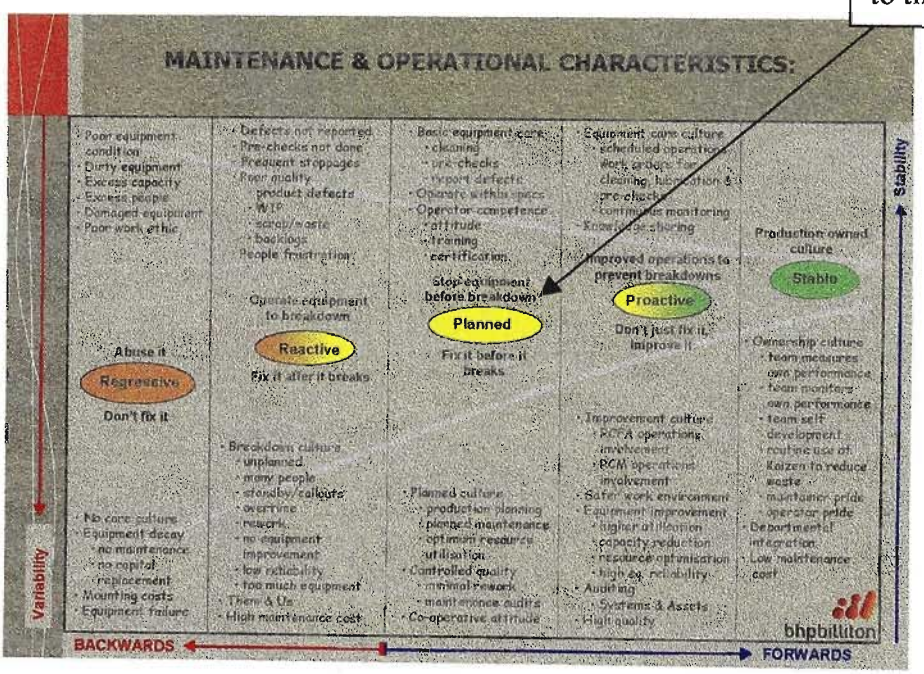
## 4.5 Bayside Aluminium identified one of the major flaws being Maintenance Management. Was Maintenance management addressed during the reengineering process?

Bayside Aluminium had a maintenance management problem of proportion even after the first reengineering process. Steps were initiated to resolve the issue and bring maintenance back onto track in terms of performance and costs. However, restructuring of maintenance to become world class is easier said than done. However Bayside Aluminium implemented a two-pronged approach, by beginning to optimise their maintenance personnel and structures, and implementation of world-renowned software system SAP.

The second reengineering process did not resolve all the maintenance issues either, and a lot more work was done in subsequent years until present to go towards low cost, good quality maintenance management.

It would be apt to now discuss Bayside Aluminium's position on the maturity curve after all these steps were initiated.

Figure 50: Where is Bayside Aluminium currently on the maturity chart?



Reference – Bayside Aluminium network - L:\Be\Ps\Bem\Journey to Maintenance Excellence

Author – S Visser - 2001

Bayside Aluminium has moved out of the retrogressive stage, that is the Reactive stage 2, and is settling into stage 3, which is the planned stage. However Bayside Aluminium is still far from achieving the financial gains of performing planned maintenance. This will only be gained once the planning stage is firmly entrenched into the organisation. Furthermore the organisation must be ready to move onto the next stage which is the Proactive stage before the financial gains can begin to realise. The process of moving stages involves

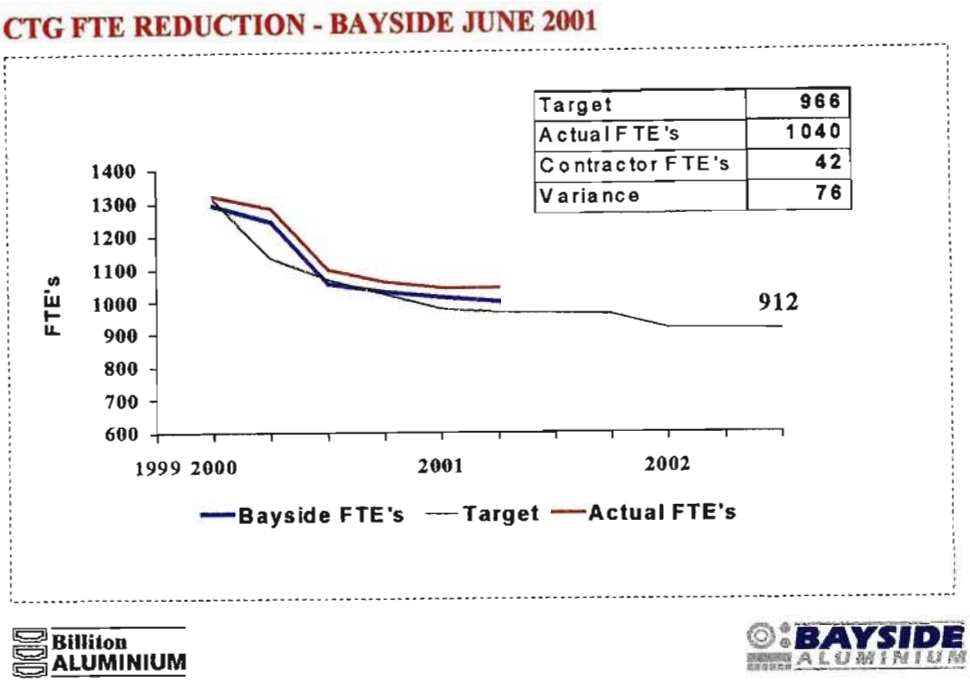
- Employing competent maintenance practitioners.
- Entrenching a culture of root cause analysis in the maintenance organisation.
- Implementing the correct integrated maintenance support software, for example SAP.
- Capital upgrade of areas of the smelter whose maintenance costs are
  - higher than capital upgrade or replacement
  - have passed their useful life but are still in operation
- Correct measures are implemented to ensure accountability of the workforce down to the lowest levels.

Bayside Aluminium has until recently put most of the above in place. The results are beginning to show a more mature maintenance regime at Bayside Aluminium. Unfortunately this has still not been able to result in cost savings and it would hopefully be a matter of time before the savings are realised.

## 4.6 An analysis of the real results of the reengineering process

The period allocated to the process as mentioned before was eighteen months. At the end of eighteen months the results of the reengineering process were to be collated and discussed at an appraisal meeting attended by shareholders. The results are once again graphical using the same format used throughout the process and show a simple view of targets versus actual.

Figure 51: **Result 1 - Reduction in personnel – target versus actual**




Reference - Bayside Aluminium network – L /BG/PS/BGA

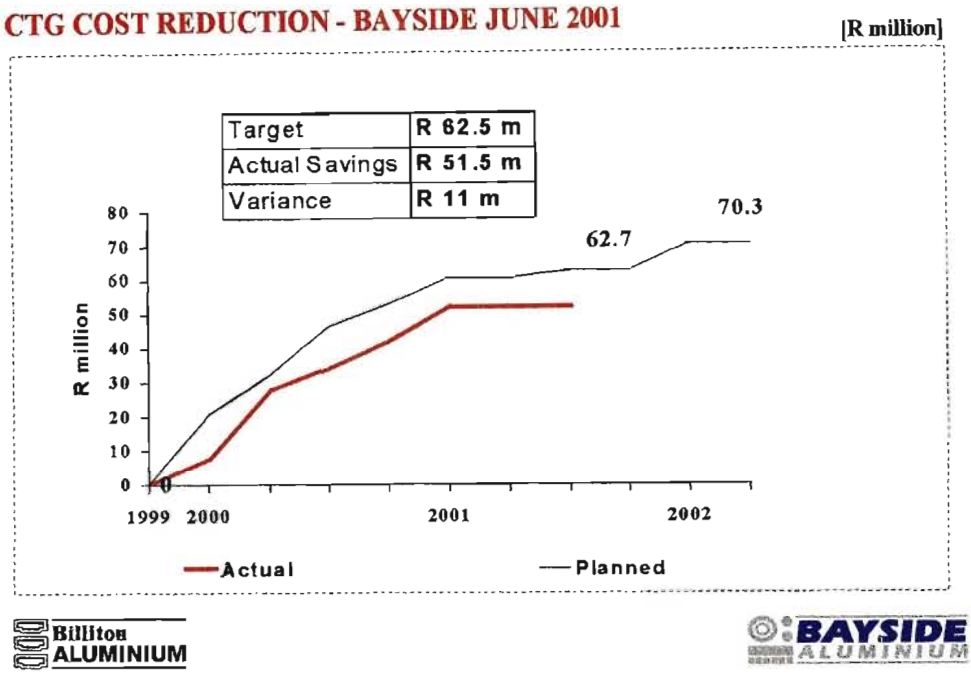
Author - J Wilson – 1999

The graph above illustrates the following

- the target reduction of FTEs was not reached by a figure of 76 FTEs by the end of the eighteen month period.
- The curve depicting the actual reduction seemed to have flattened, indicating a loss of momentum on reduction of personnel. This could also indicate failed ideas where personnel could not be released due to an idea that was not practically implementable. Both of the above points are concerning and need addressing.
- Contractor numbers still too high and pose a risk of increasing as further permanent employee numbers decrease.
- Conclusion
  - Almost thirty percent reduction in personnel outstanding. In addition, contractors number have not decreased to zero as originally committed. If the contractor numbers are added to the permanent numbers, the figure outstanding figure is closer

to forty percent, which is a concern. Therefore in summary, reduction in personnel could have been more controlled. This can also be seen from previous graphs showing that the current 2002 personnel figures have not reached the desired targets.

Figure 52: Result 2 – Cost reduction – target versus actual




Reference - Bayside Aluminium network – L /BG/PS/BGA

Author - J Wilson – 1999

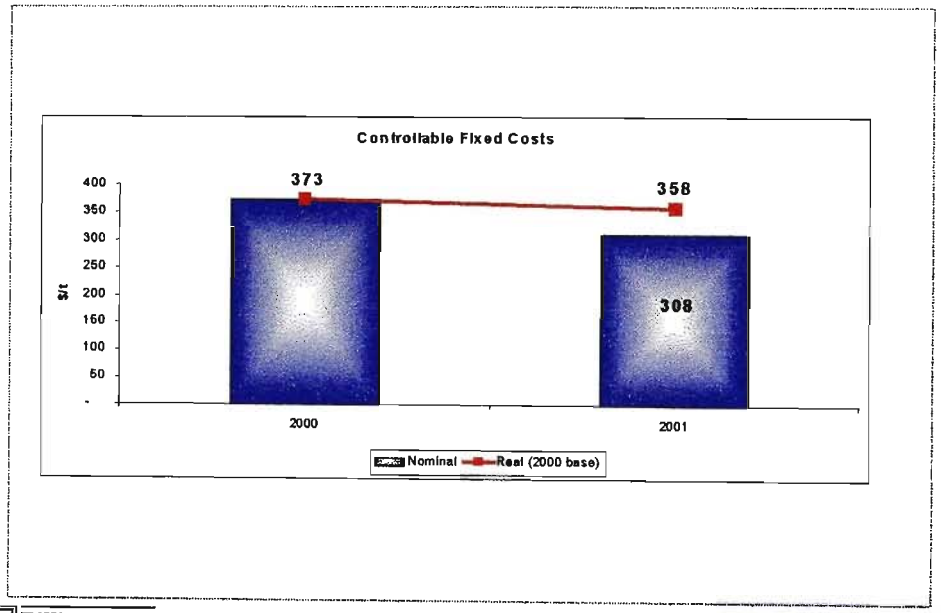
The above graph illustrates the following

- The target savings has not been achieved by a figure of R11 million which is eighteen percent of the target.
- Similar to the FTE graph, the cost savings graph seems to have flattened, towards the end of the eighteen month period, which is concerning.
- Substantial savings has been made to the value of R51,5 million
- Sustainability of the savings cannot be quantified using the above graph.

- The graph does not show the reduction in actual budget with the inclusion of savings. That is, while savings figures are being displayed, there could be over-expenditures in other areas.
- Conclusion
  - While good savings have been achieved, close to twenty percent of savings have still not been claimed. Also, emphasis has been made on savings only, rather than net bottom line including real expenditure, which could be an unsavory surprise at the end of the financial year.

Figure 53: Result 3 – Actual Fixed costs measured in dollars per ton aluminium

**CONTROLLED FIXED COSTS**




Billiton ALUMINIUM

BAYSIDE ALUMINIUM

Reference - Bayside Aluminium network – L /BG/PS/BGA

Author - J Wilson – 1999

The above graph illustrates the following

- The actual fixed cost reduction until year 2001 was $15/ton rather than the targeted $100/ton when the real actual budget figures are included.
- Reviewing savings in isolation can be deceiving as mentioned in the previous graph

- There is still a lot of work to do to try to achieve savings.
- Actual Over-expenditures need to be closely controlled during cost saving exercises.
- Conclusion
    - Cost saving exercises financials need to assume and objective view and work with real time figures if real savings are to be achieved.

## 4.7 Summary

One has to be objective and open in analysing results of a reengineering processso that learnings can evolve out of the process and shortcomings can be addressed. It is also important that successes be celebrated. What information is obtained from the results is very dependent on the design of the planning phase. A mature organisation would ensure that results at any point during the process are relevent and applicable instantaneously without having to go through the trouble of relinking it to the daily system. In this way a realistic picture of the process can be obtained. It is also important that the process itself be tracked to provide clear progress feedback as to where the process is at any point in time. Keys to producing a successful process is to have defined strict timelines, top management direct involvement and a good communication strategy. All of these encompass organisational involvement which has a direct impact on process results.

# Chapter 5

# Recommendations and conclusions for a Reengineering Process

# 5 Recommendations and conclusions for a reengineering process

## 5.1 Introduction

" Instead of simply improving the processes, companies need to eliminate non-value-added expenses, and evaluate which organizational elements are relevant to the strategy. As a result, the company now has the opportunity to sustain and increase its market share. To reap lasting benefits, companies must be willing to examine how strategy and reengineering complement each other -- by learning to quantify strategy (in terms of cost, milestones, timetables); by accepting ownership of the strategy throughout the organization; by assessing the organizations current capabilities and processes realistically; and by linking strategy to the budgeting process. Otherwise reengineering is only a short term efficiency exercise "

Internet Reference 8- Michael Hammer and James Champy

The extract above clearly illustrates the need for the organisation to involve 'big picture thinking' before embarking on a reengineering process. If a reengineering process is not part of the business plan, then the organisation should not consider it. However exercises contained within the reengineering process, for example benchmarking improvements, could still be exercised even if the organisation were not to perform the process. The recommendations emphasise the importance of sustainability of the process. The organisation needs to channel enough energy into ensuring that the results obtained are sustainable or else it could cost the organisation more in the long-term.

## 5.2 Cost saving exercises financials need to assume an objective view and work with real time figures if real savings are to be achieved

Although the focus is clearly on target savings, the organisation needs to find some method of combining real time costs with savings to get an actual bottom line figure. Of course the teams performing the reengineering exercise need to focus on the savings target, but an independent department, for example the Finance department, need to

combine the actual savings and actual real time fixed costs to provide a real bottom line figure. If the figure is unfavourable according to target, the problem areas need to be found and addresses as soon as possible, and may even form part of the reengineering exercise, if discovered early enough. An important point is that management should not lose focus on current budgets and should continue to give the same attention as is given to the reengineering process.

### 5.3 Sustainability of savings need to be quantified

Ideas need to be critically analysed, even if critics are obtained from different areas, in order to obtain an independent opinion on the quality and sustainability of cost saving ideas. If cost saving ideas are sustainable, savings will be continually incurred, therefore it is important that ideas are analysed for sustainability. To ensure sustainability of cost saving ideas, prior planning of ideas becomes crucial. As much detail and thought as possible needs to be input into every idea so that value is added from each idea. If ideas are not sustainable into the long term, they should be treated as such and fall into the 'quick hits' portion of the reengineering exercise. These costs saving ideas should not in theory form part of the overall cost savings since they are once-off. The 'quick hits' costs saving ideas will however improve cashflow to the company should these savings realise.

### 5.4 Ensure business stability during and after the process

While the reenginering process continues the organisation still needs to continue with normal business. It is important that the different departments continue to focus on the daily operation of the business instead of becoming side-tracked by the reengineering process. It is important therefore to extract individuals out of their work environment and be relocated elsewhere to conduct the process.

Therefore it is important to continue to monitor process stability throughout the process and into the at least the first three years after the reengineering process. Also , for each

process improvement or position retrenched, the implications to the process need to be carefully monitored and correctly adjusted.

## 5.5 Addressing incompetence within the workforce

At least ninety five percent of incompetence cases are dealt with during this process. It is important to note that the manner in which the criteria for selection of the affected employees is fair and acceptable to the Unions. It must also not be open to victimisation of employees. In this manner the selection criteria should ensure that all non-performers and those that did not further their job skills over the past years are selected. It is the unfortunate case that at least five percent of the 'good' employees may be affected, due to secondary criteria, as mentioned in the some of the procedures discussed in Chapter 3. Unfortunately there cannot be a system that caters for each and every individuals needs.

## 5.6 Continually take quick hits

Organisations need to develop the culture of being awake to cost saving ideas that can be easily devised and implemented. These kinds of ideas are called quick hits. Therefore when cost saving ideas arise, they need to be actioned immediately and implemented with urgency.

One method of developing this culture into a sustainable process is to implement systems like a Suggestion scheme. These kinds of systems can have recognition and rewards attached to them to give employees incentives to suggest costs saving ideas. The rewards paid to the employees will obviously be a fraction of what the organisation saves in the medium term.

An area where 'quick hits' can make a considerable impact is in the procurement area. Organisational contracts are generally costly and any amount of continual negotiation would reap benefits financially. Therefore organisations need to continually review

contacts and engage in negotiation with suppliers regularly. Doing this can create opportunities for quick hits regularly and obtain ongoing cost savings.

## 5.7 Benchmark continually but do not make it into a core business

The company needs to develop a culture of benchmarking to strive towards being world class. However organisations need to weigh the methods adopted by the company in doing benchmarking and ask a few questions like

- Is it necessary in this industry?
- Is it cost effective?
- Do the gains outweigh the costs?
- Are too many resources taken away from core business and used to benchmark?
- Are there long term strong financial gains in benchmarking?

The above simple questions should be able to give an organisation enough direction as to the extent to which they should embark on benchmarking exercises. A good example is of Xerox USA, where a reengineering exercise led to develop a culture of benchmarking. This culture of benchmarking turned into an obsession with huge company resources thrown at benchmarking without noticing. In other words it became core business. It took an outside appointed Chief Executive to notice this trend and vastly trim benchmarking only to the required need and remove it from the list of core business practices for Xerox USA. Therefore benchmarking is an excellent business tool and every organisation should use it, but it must be controlled to provide benefit to the orgainsation and not become a liability.

## 5.8 Make mapping the process a continuous process

Mapping the process basically entails reviewing of ones processes in order to best optimise the process. Once again this needs to become a cultural trait in every facet of the business. Elimination of waste streams, even on soft issues, need to always be part of business plans. One of the more efficient ways identifying these wastes is to map the process and identify the waste streams.

Once processes are mapped a formal system must be put into place to review these process at least every three years. The reason is that 'necessary' items creep into the process that may not add value, and these need to be purposefully identified and addressed. A formalised auditing system ought to be able to track changes or deviations in processes.

- More time required for mapping and proving the new methods

It must also be noted that the mapping of a process during a reengineering process is a delicate exercise and needs to be done thoroughly. Questions need to be continually asked about the practicality of new approaches. Also if the organisation can afford it, the new process flow could be tested first before full implementation of the reengineering to check for practicality of the new process flow.

## 5.9 Ownership

One of the key elements of the reengineering process is that of ownership. With ownership goes

- Method of involvement of the organisation
- Extent of management involvement
- Communication
- Teams composition

It is important that the organisation owns the reengineering process. Even if consultants are used the organisation stills needs to take ownership. If organisations have the resources, they should perform the exercise in-house, which automatically involves employees in the organisation. It is important that the middle management structure embraces the process, since this will dictate success or failure. This should happen to such an extent that the middle management layer is actually responsible for executing the entire reengineering process, which will automatically create a sense of ownership and responsibility to bring the lower levels reporting to them on board.

## 5.10 Stick to the plan

One has to ensure that the time scales set up for the process are not changed without approval and criticism. The plan would be set up to be as swift as possible, showing the organisation the defined period for the process. It would therefore be demotivating to the organisation for the plan to become drawn out for a longer period due to unnecessary delays.

The organisation also needs to display to the Unions the seriousness of such a plan. They need to have the confidence that the process is necessary and delaying the process will reduce confidence levels for the need for such a process.
Shareholders are also affected by the timing of the process and would be making financial predictions based on the program of the reengineering process.

For the above reasons it is therefore important for the organisation to be able to stick to the original approved plan. If the plan needs to be changed for any approved reason, the organisation needs to be informed immediately.

## 5.11 Be more realistic with financial reporting and tracking

It has been mentioned many times in preceding chapters that the financials position and impact of the reengineering process needs to be reported or at least tracked in the correct context. Taking a one-sided view of only the reengineering process causes the organisation to ignore other important areas where high costs could surface when least expected. This will have the impact of diminishing the gains of the reengineering process and shedding a poor light on the intentions of the reengineering process.

A suggestion could be setting up a separate system that continually tracks the total saving and costs instantaneously and reports these figures for the full duration of the reengineering process. In this manner focus can be on savings as well as on real

expenditure and cashflow thereby providing a more realistic picture of the organisations financial position.

In summary, beware of spending in other areas while saving in highlighted areas

## 5.12 Permanent documented systems to be put into place detailing the way forward in all areas of the plant

One of the reasons why organisations slips back into pre-reengineering methods of operation is that new ideas and systems developed during the reengineering process are not documented and implemented. Not documenting ideas and processes means that the organisation can easily adopt the old methods and effectively cancel savings banked by the reengineering process. Therefore the reengineering teams need to ensure that

- Investigations and findings area documented on an official system
- Ideas are documented on the official reengineering forms
- Steps are established for the idea and these steps are
    - Clearly written down
    - Clear time lines established
    - Signed off by responsible people performing the implementation
    - Captured in an official storage area accessible by the organisation

## 5.13 Reengineering process must be seen as a company strategy rather than a short term exercise

The reengineering process needs to be in line with the company's long term vision and strategy. It must not be a short- term exercise focussing on short-term gains since this could hurt the organisation by causing more losses. The organisation needs to implement the reengineering plan as part of its five-year plan and check whether it aligns and compliments other strategies developed over the similar time period. For example there may be other plans that achieve the same results without going through the effort of a

reengineering process. In summary all aspects need to be investigated before embarking on this process and organisational goal alignment is of utmost importance.

## 5.14 All levels of the organisation need to be involved, especially those that need to implement the solutions

Companies sometimes make the mistake of involving only management in reengineering processes and then driving decisions top down into the organisation. The result will simply be non acceptance of the process and implementation with great loss envisaged for the company.

The organisation needs to ensure that all layers are involved including Union representatives. All need to have a participative role in devising plans and implementing them. Most important however is that the main owner of the process needs to be the middle management team. The middle management team is usually the layer that is closest to the coalface in terms of management. It is therefore this layer that needs to facilitate the process with a hands-on approach.

The method of implementing this approach is to ensure that the middle management layer becomes the reengineering team leaders and are responsible for delivering the outputs of the process. In this way the middle management layer lives with the process. It is also incumbent on the top management layer to step back and play a role of critic towards the process and the outputs from the process.

## 5.15 Top and middle management must propose the process and must see it through

It has been mentioned before that top management involvement is important to ensure the success of this process. It is also important that the management not play a simple monitoring role, but play an involved and demanding role throughout the process. The workforce needs to see that management is serious about embarking on the process and

are also serious about obtaining the results. Another reason is that the process directly affect people and where people are involved a measure of sensitivity needs to be applied. It is the responsibility of management to be able to cultivate this sensitivity into the reengineering process.

### 5.16 Ensure emphasis on culture and constant communication and feedback

Communication is one of the cornerstones of success of the reengineering process. Continuos communication and transparency can only be of benefit to the process. Therefore it is proposed that the team performing the reengineering process comprise of people from all levels in the organisation as well as a union representative. This will ensure involvement from the workforce. Continued weekly feedback needs to be given to the orgainsation and every milestone must be advertised so that all are informed. It must also be ensured that information given to the organisation is consistent and not contradictory. In summary one cannot over-emphasis the need for continual communication before , during and after the reengineering process.

### 5.17 Use consultants if it is the first one and the organisation is poorly run

As mentioned in Chapter 3 on the issue of using consultants, the organisation needs to understand it's strengths with regards to performing a reengineering process, and if not capable, then involve an experienced consultant. Companies that are generally in serious need for reengineering and cannot conceptualise using the workforce to perform the process should not hesitate in inviting an experienced consultant. After all, inviting a consultant to facilitate a successful process should provide a payback on the consultant's costs

## 5.18 Use it to implement systems like TQM, or six sigma, proven and good systems

The reengineering process could at the same time be used to implement advanced systems or business tools like Total Quality management or Six Sigma management system. These tools can be used to support the reengineering process and also assist in it's success. It is also the concept of implementing change during one phase, rather than performing reengineering, and then implementing another system a few months later.

## 5.19 Summary and conclusion

Any process is only as good as it's plan, and that is exactly the case in a reengineering process. If the plan is well thought through, the chances of success is greater. All of the above recommendations must form part of the planning process. It also cannot be emphasised more that rather than 'reinvent the wheel', orgainsations embarking on a reengineering process, need to consult with organisations that have already performed the process. This can save a lot of time and effort and can also ensure that the plan is always improved upon.

Each organisation requires a different approach to performing a reengineering exercise, however all are based along similar principle. It has been mentioned on many occasions through the study that strategy should be the overriding factor in determining whether an organisation should embark on a full scale reengineering process. This is a landmark decision and should not be one that is taken lightly. However for organisations to maintain competitiveness in the fast pace of business improvement of today, reengineering processes sometimes become a very necessary exercise of ensuring long term survival.

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