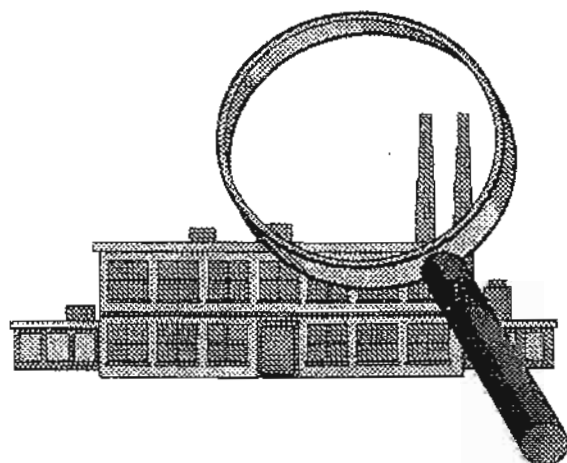


Restructuring for survival: A case study of a small-appliance manufacturer in South Africa

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FOREWORD

The first phase of the Industrial Strategy Project commenced in 1992. The Project has its origins in the Congress of South African Trade Union's (COSATU) efforts to develop policy responses to the malaise afflicting South African manufacturing.

The first phase of the ISP submitted its final report in 1995. This comprised 11 sectoral studies, a number of cross-sectoral studies, and a synthesis volume that proposed an overall industrial strategy for South Africa.

The ISP is now in its second phase and comprises four research themes. One of these examines the relationship between industrial development and the environment, a second focuses on firm-level innovation, a third examines issues in human resource development, and the fourth is concerned with identifying mechanisms to strengthen manufacturing competitiveness at regional and local levels.

This paper is one of a series of studies that examine the relationship between firm-level performance and a range of approaches and practices in the broad field of human resource development and utilisation. These cover approaches to, inter alia, training, job grading, industrial relations, work organisation and worker participation. The research attempts to derive lessons from the varying experiences of the diverse range of firms studied, lessons that will help guide industrial policy and corporate strategy.

These are working papers intended to catalyse policy debate. They express the views of their respective authors and not necessarily the Industrial Strategy Project.

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INTRODUCTION - RESTRUCTURING FOR SURVIVAL: A CASE STUDY OF A SMALL-APPLIANCE MANUFACTURER IN SOUTH AFRICA¹

"The essence of the story is that this is a factory with a heartbeat. There is a constant focus on product development, quality and cost. Communication is high on the list of objectives. There is a joint definition of productivity as a state of mind, a collective will to improve and a general belief in the human desire to do better".

Wally Solomon, former managing director of Amalgamated Appliances

The story referred to in the above quotation is about a small-appliance manufacturer which went from losses of more than R1 million a month to profitability. It is a remarkable story of industrial restructuring at the firm-level in the context of hostile industrial relations and a disadvantageous cost structure. It opens up many issues discussed by the Industrial Strategy Project's (ISP) book, *Improving manufacturing performance in South Africa: report of the ISP*, by locating them at the company or firm-level.

As a case study it deepens our knowledge and understanding of the myriad of influences on the nature of productivity and competitiveness: from the external environment in which the company operates, the organisational practices and procedures it puts in place (either by legislation or by choice) and the shop-floor practices it chooses in order to sustain high-quality products. It therefore provides an excellent vehicle to test the hypothesis of this project—the human resources, corporate governance and public policy project—that the deployment of labour, the forms of work organisation in the firm, the skills of the labour force and the training and education available to the labour force, as well as the corporate governance of the firm, all impact directly on firm-level performance.

But, as many students of case studies will agree, any case study also goes beyond this. It provides rich and varied data about entrepreneurship, motivation, inter-firm relationships, workforce engagement and management transformation. In telling the story, by providing details of the company and by assessing the company according to the ISP's intelligent production enterprise index, I hope to prove, in a dynamic way, that success cannot be forced by legislation or aided by various supply-side measures alone. Success must also be nurtured, in this case by the belief of the shareholders, the enthusiasm and willingness to change of the management, the increased commitment and productivity of the workforce and the strategy of the union.

Section 2 outlines the basic methodology adopted for the case studies. Firstly, it outlines the intelligent production enterprise index which is used as a method

of assessing the firms under investigation. This index measures the extent of the adoption of 'best practice'.² Secondly, it outlines the various information sources for the case studies.

Section 3 tells the story of Amalgamated Appliances, its crisis year and its recovery period, while Section 4 provides background to the small appliance industry.

Section 5 details the company, Amalgamated Appliances, both in relation to its competitiveness in the external environment and the factory efficiencies internal to the company.

Section 6 evaluates the extent to which intelligent production has been adopted at Amalgamated Appliances in terms of the three broad areas of the intelligent production enterprise index and in relation to firm performance.

The final section, Section 7, discusses the lessons from the case study and outlines policy conclusions.

2. METHOD OF ASSESSMENT: THE INTELLIGENT PRODUCTION ENTERPRISE INDEX

2.1 THE INTELLIGENT PRODUCTION ENTERPRISE INDEX: A METHOD OF ASSESSMENT

The ISP has developed a set of proposals - loosely termed an intelligent production strategy - to support the increase in productivity and the promotion of efficiency. The intelligent production strategy draws together the separate components of human resource development, work organisation, skill upgrading, the remuneration system, as well as plant-level governance and collective bargaining.

The term 'intelligent production strategy' refers to a threefold requirement:

- * Intelligence: skills, knowledge and informed decision-making capacities in production.
- * Production: efficient and flexible production, which includes team-based work organisation, flexibility, job design and broad-banding grades.
- * Strategy: the need for management and labour to jointly plan, implement and monitor, in the longer-term, the new production techniques and their associated requirements to move towards more demanding, quality-product markets.

The development of the ISP's intelligent production enterprise index forms part of the broader ISP project to identify private and public dissemination mechanisms and to develop public policy to promote the adoption of sustainable 'better practice' in manufacturing enterprises in South Africa. In arguing the case for such intervention, it is necessary to have some mechanism whereby we can assess to what extent enterprises have begun to adopt 'better practice' in the three components of skills and training, flexible work organisation and corporate governance and remuneration systems. The construction of the intelligent production index is outlined in Appendix 1.

The intelligent production enterprise index will be assessed on the extent to which a high score on an intelligent production enterprise translates into improved productivity, efficiency and performance at the enterprise. Since investment in education, training and participatory practices is only one component of what makes companies profitable and productive, it is important to emphasise that these investments alone are unlikely to yield the desired outcomes in and of themselves. However in the

context of an integrated marketing, manufacturing and human resource strategy, intelligent production could result in better performance and productivity outcomes for firms.

The focus on firm-level performance is, however, secondary to the investigation of the organisational environment and the shop-floor practices, since it is these latter procedures and practices which we believe will ultimately have an impact on performance. This will occur through designing improvements (in process, procedures, practices and structures) to eliminate the causes of inferior performance. We are here encouraged by this particular study of Amalgamated Appliances, which was included in the survey of firms for the first phase of the ISP's sector-specific research conducted by Ted Baumann.⁴ Amalgamated Appliances' managing director at the time the interviews for this study were conducted, Wally Solomon, invited the ISP to return to the Durban factory to see how it had improved factory efficiencies since the detailed discussions with the ISP's Baumann in the earlier phase.

2.2. INFORMATION SOURCES

A final point about methodology: how do researchers on this project obtain their information? They utilise a number of different techniques:

- * Firstly, they conduct in-depth interviews with a number of senior managers: general managers, production or factory managers and human resource managers or specialists.
- * Secondly, they observe team meetings or production meetings at various levels of the company and, if possible, supplier or customer meetings.
- * Thirdly, they cross-check, through detailed, representative interviews with the workforce, whether the company has, in fact, adopted the measures contained in the index and how the workforce perceive the changes which have taken place. Where inconsistencies appear between the views of management and those of the workforce, these are ironed out through follow-up interviews with management and/or the representatives of the workforce, or through direct observation of production meetings and work processes. If the response remains contradictory, the specific indicator receives a score of zero.

Where possible, the degree of implementation of an activity or process is measured, as well as the fact of that activity or process. For in-

stance, in the index on skill formation, the fact of the increase in training offered is measured, as is the extent of that training, through indicators such as whether the training is competency-based, whether there is a career path premised on the acquisition of skills, whether there is payment for skills, whether a skills-based grading system has been introduced and so on. For the index on work organisation, the principal indicator is whether team-based work organisation has been introduced on the shop-floor. This is further explored, to establish the depth of its introduction, by indicators measuring the nature of the activity and the capabilities of the production workers in the teams. Likewise, in the corporate governance index, the extent of participation is measured by basic structures for communication, information disclosure and decision-making, whereas the degree of participation is measured by the time, resources and extent of information available to the workforce representatives.

- * Fourthly, the researchers read all company reports, newspaper articles or trade-related journals on the industry and the company.

The details of the intelligent production enterprise index, which we will use to measure the adoption of "better practice" in the three components of intelligent production, will be outlined in the appropriate sections below.

This paper focuses on Amalgamated Appliances, a small-appliance company in KwaZulu-Natal. Its story is a unique one of collapse, survival and remarkable recovery. It cannot be reduced to the indicators on the intelligent production index. Nevertheless, we believe the index provides a guide for assessment and for opening up the problems or gaps in the operational environment or shop-floor practice. We begin with the story, explore the competitive position of the company in relation to the sector and internationally, and then subject the factory to the index. We conclude the study by drawing lessons for restructuring and the policy conclusions.

3. THE STORY OF AMALGAMATED APPLIANCES: MEETING THE CHALLENGE FOR SURVIVAL

3.1. THE CRISIS PERIOD

Amalgamated Appliances formed as a result of a merger between loss-making Lion Match and Tedelex in January 1992, with management control

vested in Lion Match. The company comprised three factories: one in Swaziland, the factory at New Germany in KwaZulu-Natal and one in Johannesburg.

In 1993, the company reached a crisis. It was losing R1 million a month. Lion Match entered the Interpak deal and made themselves "quite a lot of capital at that point". They looked at the loss-making subsidiary, Amalgamated Appliances, and decided it was a perfect time to "exit it", as management said. The joint venture was terminated and Tedelex acquired 100% of the company. Malbak took over management control in November 1993.

The crisis was partially the result of the way in which the company was formed. The merger resulted in separate sales forces and conflicting products. As management explained:

"We ended up with two sales forces...[which] were selling similar products at similar prices to the same customers. So, all they did is they went out and undercut each other. There was a lot of competitive feeling between the two sales forces".

The problem of the similar products was compounded by the fact that they had different components, so that economies of scale could not kick in. The company ended up with "unacceptable product return rates", with poor quality and with increasing losses.

At the crisis point in 1993, an analysis of the problems revealed that the company was unfocused and active in too many areas, producing too wide a range of products and, finally, there was little possibility that sales forecasts would be met. The New Germany factory was perceived to be a major source of the problems. Wages were high and out of kilter in terms of even the local market, assets were out of control with many under-utilised, the factory was overstaffed and productivity was a major problem. Other problems related to the poor relationship which existed between management and the workforce. These were addressed in the course of the restructuring process.

Many of these factors were identified in the first phase of the ISP as critical components of the poor productivity performance in the manufacturing sector more generally⁵.

The new management team pointed out that, since then, the company changed from losing R1 million a month (which, for a small company with R120-million-

per-annum turnover, is significant) to returning to profitability and performance, and seen as an investment for the Malbak Group.

This has been achieved through a restructuring of the relationship between management and labour:

"And that's been achieved in what we think is a very good and positive way in the sense where we have genuine and successful participative and consultative management".

Two options were identified: either liquidate the company and take out the underlying assets, or try to rationalise the company and turn it into a viable business. The second option was taken, which included changing the management team. This resulted in 75% of the previous management leaving, rationalising the sales force through terminating the agents' agreements and looking critically at the New Germany factory. The closure of the New Germany factory was to follow that of the Swaziland plant to consolidate the entire operation in Johannesburg.

The past two to three years have, therefore, seen a major turn-around at Amalgamated Appliances.

3.2. CATALYSTS FOR CHANGE: FACTORY INEFFICIENCIES

The key catalysts for change, therefore, were internally rather than externally driven through tariff reduction or the signing of the General Agreement on Tariffs and Trade. But, as management argued, the major pressure was "pure survival". Obviously, new entries to both the domestic and international markets were an issue, as were customer requirements, but the pressure came from a total lack of profitability and threatened closure.

The company analysed these problems and realised the factory was unfocused. The product range was cut back through eliminating more than 20% of the range. The problems compounded. Management remarked:

"And even having done that, the factory wasn't able to meet the sales forecast. So the things that we could sell we couldn't make, and the things we were making we couldn't sell".

The solution to the lack of focus in the factory (and the fact that the factory consisted of fabrication and assembly) was to examine the relationships between the core and non-core activities of the business.

3.2.1. RESTRUCTURING OF INTER-FIRM RELATIONSHIPS: OUTSOURCING NON-CORE ACTIVITIES

The assets problem was a result of the rationalisation. The solution was to sell off, through subcontracting and outsourcing arrangements, many of the areas which had been taken on but were under-utilised and

in which the company did not feel skilled. The entire plastic-moulding facility was sold to Gap Plastics and the metal-pressing facility to M&C (which was formed by the former management of the metal-pressing plant of the KwaZulu-Natal factory).

Part of the intention behind selling off these non-core activities was for Amalgamated Appliances to forge a new relationship with its key suppliers. Management referred to this as a "symbiotic kind of partnership", which ensures just-in-time delivery and that the price and quality are right. With Gap Plastics the company is involved in a series of regular meetings and reviews, helping it to focus. The restructuring has also meant that 40% of Amalgamated Appliances' sunk costs could be freed since the company only requires 60% of the plastic moulding.

3.2.2. RIGHT-SIZING THE FACTORY

The analysis of the problem also revealed high staff levels. This led to a decision to rightsize the factory, which resulted in 200 people in September 1995 producing more products than the 400 people the company employed in August 1993. Management added that rather than seeing this as a loss of over 200 jobs, it was a saving of 200 jobs because "if we hadn't actually done this, nobody would have had jobs". In addition, many of the jobs lost were absorbed by the outsourced activities. Management were quick to emphasise that it was not a case of "cutting labour" but of cutting the whole team all the way down the pyramid. They eliminated 75% of the previous management team: the team was cut down and three executive directors left. This was not, however, the perception of the employee representative committee, which represented the workforce during the period after the closure.⁶ The committee's members were adamant that the reduction "didn't impact on monthly paid employees...it was just on the shop-floor".

3.2.3. THE WORKFORCE CHALLENGES MANAGEMENT AND SHAREHOLDERS

In November 1993, the shareholders decided to take the option of closing the New Germany facility and relocate operations to Johannesburg. The company retrenched everybody and then, in January 1994, hired 180 of the retrenched workers back on one-year contracts. Workers were employed principally to run out components and to build out existing component stocks. While this factory was being run down, management would create one in Johannesburg. Management explained

that Johannesburg was the obvious alternative, since 45% of the market is based there. In addition, they added:

"Transport costs out there are less, and a lot of our subcontractors were up there at that point. So, what we're doing is bringing components down here, assemble here, and then ship it back to the Transvaal. So, there were diseconomies of scale of being here, and the logical thing was, in fact, to move to the Transvaal".

The running out of the KwaZulu-Natal facility would take approximately one year, with the promise that by the end of that year (1994) a final decision about relocation or liquidation would be made.

It was during this period, and despite what management called "the years of accumulated bad situation between management and employees", that workers, together with management, turned the business around. The improved results persuaded Amalgamated Appliances' owners (the Malbak Group) to reconsider the decision to close down the KwaZulu-Natal operation. The decision to move to Johannesburg had assisted in focusing the minds of all employees. The process of running down the factory worked so well that efficiency was increased. This helped turn the company around. As management explained:

"One-year contracts to everybody, and whoever wanted to go up to Jo'burg once we'd relocated the factory could go. But, you know, there's going to be probably one per cent of the people who would go. And this actually resulted...in change - people had their minds focused on what they had to do, instead of seeing what the next style of dances they were going to do would be. And all of a sudden the factory started to perform, and perform towards a common goal...and by June that year we had a petition drawn up here by the employees to challenge us".

The petition from the workforce was a direct challenge to the shareholders of the company that the workers be allowed to prove that the enhanced performance could be sustained - in other words, to be given one more chance.

Management and shareholders acknowledged that the New Germany factory was a viable entity, and realised that if these efficiencies could be achieved during a run-out, it was viable to continue. They looked at a series of options and eventually decided to build a new factory in Westmead, KwaZulu-Natal. The result of this challenge being accepted is that the company (for both workers and

management) saved jobs, created new ones, achieved an investment of R12 million in a state-of-the-art facility, designed new products and moved closer to world-class quality. The company is moving towards ISO9002, world-class design, "subcontracting for international business" - all with a clear intention to significantly increase their export business.

4. BACKGROUND TO THE SMALL-APPLIANCE INDUSTRY

4.1. MARKET SHARE AND BARRIERS TO ENTRY

The South African small-appliance industry is a small industry with few players. The two major players are Amalgamated Appliances (35-38% market share) and Nu-World Holdings Limited (10-30%), while other competitors include Philips (8%), Kenwood (7%) and House Brands (15%). The products of this industry are relatively inexpensive and often lack close substitutes. Hong Kong-based plants in the ōnewō south of China are providing the industry with vibrant competition. Despite the average nominal tariffs of 30%, these plants are able to export to South Africa.⁷

South African-owned Amalgamated Appliances is a major market leader in the South African small-appliances industry, although it has recently lost market share. It controls 35-38% of the domestic market and is now attempting to recapture lost local market share. Market size, according to Mr Solomon, is approximately 170 million sales, while Amalgamated Appliances has approximately 50 million sales.

Amalgamated Appliances brands dominate the market for small electrical appliances such as frying-pans, hotplates, jug kettles, steam irons and toasters.

Another major South African producer of small appliances is Nu-World, which produces the Ideal brand of appliances and holds the agency for JVC hi-fis, videos, video cameras, car audio equipment and television sets. Ideal generally holds 10-30% of market share, depending on the product, mostly in lower-priced items. Nevertheless, Nu-World is expanding both its capacity and its export share. In the first half of 1995, exports grew by 120% and for the second consecutive year, Nu-World received the President's merit award for export achievement.⁸ Among the 30 destinations are, principally, Europe, with Africa and the Middle East seeing a steady increase in exports. Director Jeffrey Goldberg said the group was negotiating

an agreement with a Japanese white goods manufacturer to market its range in South Africa.⁹ Exports contributed to the company's 55% rise in turnover to R174,5 million per annum.

1995 also saw the completion of a new factory, built with assistance from the Industrial Development Corporation. This added 30% more space for assembly lines. Michael Goldberg, Nu-World's managing director, is keen to maintain state-of-the-art technology as the company is working towards establishing itself as a key international player in small electrical appliances. Nu-World introduced two new ranges of steam irons for the export market in late 1995. These also sell locally under the in-house Magic Line brand. The company lifted its attributable income by 84,5% to R2,8 million for the six months to February 1996. This was boosted by improved productivity and cost containment.

Other competitors include Philips (8% market share), Kenwood (7%) and House Brands (15%).

Amalgamated Appliances and Nu-World both produce and import small appliances. They base supply decisions on relative costs. Amalgamated Appliances argues that one of the causes of its own past non-performance was that Nu-World was seen as its major competition, so that it was benchmarking itself against Nu-World. Now it has identified a number of companies internationally against whom to benchmark. In particular, it benchmarks kettles against the biggest manufacturer of kettles in the UK, although it benchmarks its prices against the Chinese.

The main impediments faced by local potential competitors in the domestic market are capital investment for local manufacture, having a national service support system and having a national distribution network.

4.2. LINKAGES TO OTHER SECTORS AND GOVERNMENT

The small-appliance industry has various linkages. The customers of the small-appliance industry's lower-cost products include shops ranging from cash discount chains, such as Dions and Hypermarket, to local supermarkets and cafes. These retailers tend to keep lower stock levels, while little dialogue occurs with them on product specifications. The exception here is on the high-end imported items.

The suppliers to the small-appliance industry include the local metals, plastics, aluminium and switchgear industries, as well as packaging. Input prices are high, with producers complaining that

the local price is higher than that available on the world market. We have already noted that a certain proportion of inputs are imported, although duties on raw materials discourage this.

Baumann's report sheds light on which inputs are used for which products: "Prepared steel or aluminium billet is used for iron heels for irons; cold-rolled sheet metal is used for toasters and the like; powdered polypropylene is used for injection moulding of plastic parts such as kettles and iron tops; and switchgear is used throughout."¹⁰ While parts used to be fabricated at the factory from basic materials, this is no longer the case at Amalgamated Appliances, where many of the fabrication operations have been outsourced.

While there are no significant links with government beyond normal tariff and trade representations, Eskom's electrification drive is likely to impact substantially on the industry. In opening the new factory in Westmead, Mr Solomon was upbeat about the effect of electrification on the small-appliance industry and his company in particular: "With the rapid growth in electrification in the country we are confident it won't be long before demand grows to the point where we expand production."¹¹

5. AMALGAMATED APPLIANCES: ITS MANUFACTURING ORGANISATION, PHILOSOPHY AND PRACTICE

5.1. OWNERSHIP AND MANAGERIAL STRUCTURE

Amalgamated Appliances is wholly owned by Tedex, which bought out the shareholding of SAB, and is managed by Malbak. The links with Malbak, the holding company, are particularly strong. The chairman of Amalgamated Appliances is a director of Malbak and is also the chairman of Tedex and Defy. A second Malbak director was moved into the company as one of the executive directors. These three companies (Amalgamated Appliances, Tedex and Defy) all form part of Malbak consumer products, and make up 29% of Malbak's turnover. While most of the linkages remain at board level in terms of advice, on certain activities Amalgamated Appliances refers to Malbak continuously. It is through Malbak, for instance, that forward cover is bought for the imported material which makes up 30% of inputs.

The firm is an amalgamation of the country's most popular brands in small appliances: HAZ, Lion and Tedex. Lion appliances was a subsidiary

of Lion Match, and HAZ Appliances a subsidiary of Tedalex. Both companies were losing money, and a partnership between Tedalex and Lion Match was formed in January 1992. Management control was vested in Lion Match so that Tedalex and Malbak were not involved at all. The rationale for the merger was, as Ted Baumann puts it, "familiar and laudable: it would allow the three companies to achieve economies of scale in manufacture and distribution, which would allow it to compete with lower-priced imports from the Far East. The merger, however, involved several plant closures, retrenchments, and relocation of most manufacturing activities to New Germany, Natal".¹²

The Swaziland plant closed first, with the Johannesburg plant following in 1995. Amalgamated Appliances is now a one-plant company, located in KwaZulu-Natal. Management control is now vested in Malbak, with Amalgamated Appliances reporting directly to Malbak. As Mr Solomon said: "There is now very serious Malbak attention on Amalgamated Appliances".

5.2. COMPETITIVENESS IN THE EXTERNAL ENVIRONMENT

The strategic focus of Amalgamated Appliances is orientated towards the low end of the small-appliance market. It also imports into the higher end of the market, with such activities contributing approximately 20% of turnover. The company faces many challenges in the external environment which have to do primarily with input costs and the trade and tariff regime. It is expanding its export market and is seeking to expand its local market share.

The main market for the Amalgamated Appliances product range is local, principally Gauteng, with a large and diverse customer base. Between 2-30% of the total value of Amalgamated Appliances' output is supplied to its largest customers (Makro and Dions). The complete range of products is sold to large retail outlets (Makro, Dions, Pick æn Pay and Game), while a combination of hotplates, irons, kettles and frying-pans are sold to other retail stores such as OK Bazaars, Clicks, Checkers and Hyperama.

5.2.1. INPUT COSTS AND WORLD-PRICE COMPETITIVENESS

The small-appliance industry purchases most of its inputs locally. Amalgamated Appliances uses over 300 local suppliers and only 20% of inputs by

value is imported. Imported products include the thermostats for irons, whereas the plastic mouldings and the aluminium die-casting is local.

The company believes that its most serious problem relates to its supply chain which, management argued is, "wrapped up in a whole tortuous structure of protection and counter-protection and cross-protection". Amalgamated Appliances' suppliers enjoy "an almost impregnable tariff protection on the materials which we're essentially forced to buy from them".

The company has long regarded the high cost of locally available inputs as a major obstacle to its competitiveness. Baumann's ISP research in phase one found that local suppliers were, "expensive and unreliable" and that, "raw-materials prices are nearly double those of imported products". Some figures cited included the price of polypropylene on the local market being 46% more expensive than that available to competitors, and the price of rubber sources locally being R4 000 per tonne compared to the R2 000 per tonne paid by competitors. However, because of the dominance of these raw-material suppliers in the market, the Amalgamated Appliances management were at pains to emphasise to us during this second phase of the research that they were trying to "nurture" their relationship with these suppliers and did not want us to mention names. The critical point made by management was that that, "you can buy the finished product off-shore cheaper than the materials that we put in".

"The average price premium paid for local components is almost exactly equal to the rate of duty applicable to those items 25%. This is due both to duties on the components and on the raw materials used to make them. For example, materials are 50% of costs for manufacturers of cooking elements; in turn, the prices paid for these materials are 5% higher than those paid by overseas firms".¹³

As Baumann notes and management reiterated during the second phase of the research, this is a significant disadvantage.

These issues are all the more important when one considers that Amalgamated Appliances uses R45 million worth of raw material from the local market per year.

In this light, one of the most serious threats envisaged by the company at the time of Baumann's research (1993) was the surcharge reduction at the beginning of October 1995. This

would, the company believed, result in the ability of retailers to source products internationally at very low prices. An incident was quoted by one manager to substantiate this:

"I was on the plane with one of my major customers and he was telling me that they had sourced an iron in mainland China at a ridiculous price, which means he can retail it below my manufacture costs. Now that's one of the side-effects of surcharge reduction".

The manager argued that the company was going to need to squeeze margins and possibly turnover as well. Nevertheless, management were keen to point out that they were in fact in favour of a reduction in surcharges and duties because of the development of a thriving black market in smuggled products, particularly in the audio range. The issue of surcharges, however, became less important to the company as the rand devalued over the period 1995-96.

This leaves world-price competitiveness as the key problem. The "culprit" here is input costs. If these were at world level, management believed, the company would survive: "All we're asking is the right to compete and survive."

Amalgamated Appliances' management believed that on crude-price comparisons the company is not price competitive. It benchmarks itself against the Chinese for price, although they acknowledged that companies in the People's Republic of China are almost unbeatable. The new iron which they developed and sent to trial recently came within 12,6% of Chinese prices. The major component of this extra cost is duties on costs, which stand at 20% for irons. They do not believe, therefore, that they need to slash prices: "Just keep them lean [and] try to develop other characteristics which offer extra value: appliances which are more modern, offer greater quality, are more adaptable to customer requirements and are a reliable source of supply".¹⁴ A key policy decision they were keen to have made by government is a "review of the surcharge on duty structures on input costs".

Amalgamated Appliances' response is to look at a Chinese facility in a joint venture with itself to supply capital and tools to produce for the US market. While they believed the numbers look good, management were concerned about controlling the venture from such a distance.

This will be revisited until such time that the company feels it is the correct time to enter this kind of relationship. However, Amalgamated Appliances' management believed they have very good design capability and will use the Chinese facility to make tools in China for their domestic business.

The reduction in the general export incentive scheme (Geis) was also cited as a disadvantage to the company, but was related back to input prices. As one manager argued:

"I think export assistance and tariff protection go hand in hand. I don't think as a company we necessarily need export assistance, but then we must be able to buy our input cost must be competitive".

Management's view is that government is disadvantaging the company by discontinuing Geis without at the same time dealing with input costs. They explained:

"You are taking money away from us at the input level because you are overcharging us against world levels. Then you're giving it back once we export it; so, it is to some degree levelling the playing field and subsidising our world prices. By taking that away, you're taking away the subsidisation of our world prices. We're not unhappy that you're taking it away, but you must take the other end away as well".

In a memorandum to the Department of Trade and Industry, Mr Solomon pointed out that the company is, "facing severe competition in the South African market from imports, since many of our input costs are out of line with world prices due to import duties which are levied on our components, although the components are not manufactured in South Africa". This, management argued, "distorts the market in favour of imported finished goods".

Amalgamated Appliances faces two levels of import duties:

*Firstly, direct import duties which are levied on products which it imports.

*Secondly, indirect duties which are levied on raw materials which it buys from local suppliers who, in turn, import these products.

The impact is to raise the cost of locally produced products by between 4,9% (steam and dry irons) and 1,1% (HAZ steam, spray and surge iron). This rise is, according to management, "...enough to make the difference between success and mediocrity". Management continued:

"If duties on components are lifted completely, it will mean that local manufacturers will increase their market share significantly against imports. This will allow us to benefit from economies of scale so that we can become world-price competitive and become serious players in the global small-appliance industry"

CLOSE SUPPLIER LINKAGES

In an attempt to limit the disadvantage that input costs give the company, it has begun to develop close links with local suppliers. As management argued: "We don't have a shotgun approach to suppliers - we form very, very close agreements where...we're normally a major customer of those suppliers - so it's not that they can just turn a blind eye or a deaf ear." Some of the programmes initiated with suppliers include:

- * Entering into long-term contracts. This has allowed Amalgamated Appliances to have regular problem-solving meetings with its suppliers. Meetings are held with the manufacturing people during which their particular problems are evaluated, whether they relate to labour or equipment, and joint plans are agreed and progress monitored until the objectives are met.
- * Entering into joint ventures with subcontractors or with international technology partners.
- * Sharing engineering personnel and cost data. There is a full-time person in charge of relationships with suppliers as well as with negotiations on a biannual or annual basis. Both engineering and quality people are involved here, with the latter involved in implementing quality systems at suppliers, with regular audits being done on their systems in terms of the specifications of a quality manual which the suppliers have as well.
- * Sharing factory space with, for instance, M&C, the new owners of the metal-press section which was outsourced.
- * Rating the performance of their suppliers in terms of delivery time, quality and price.

With new suppliers the relationship is intense and specifically related to the profitability of the supplier:

"We insist on going through all his costs to make sure that he makes a profit, because if he doesn't make a profit and the pressure is on, or demand periods very high, then he drops you. So we go through there and we watch our suppliers in terms of profit"

The company also goes one step further by looking at the raw-material suppliers of its suppliers: "To talk deals with Company A to see whether, if we buy forward, we can hold the...price".

5.2.2. BRAND SEGMENTATION

At the competitive mass-market end, Amalgamated Appliances produces the HAZ range of irons, kettles, toasters, etc. It is a low-margin, low-cost but good-quality range aimed at the mass market. Amalgamated Appliances has spent time and energy improving the quality of these products. A higher-specification range is Pineware, which also has a broader range, including items such as hotplates. Tedelex is classified as a strategic cooking range, including products such as pressure cookers, gourmet grills and a variety of specialist cooking products. The innovative value-added products are the Salton products targeted at the 'yuppie' market, with the well-known product, the Salton Hot-tray. The international products are Rowenta, which have international designs and are of premium quality. The advice and input received from Rowenta on the manufacturing side have been critical in providing an opportunity of becoming world class

5.2.3. INTERNATIONAL COMPETITIVENESS AND THE EXPORT MARKET

Pineware products have become a well-known brand in Africa, with an established franchise network. Frank Thompson, deputy manager of Amalgamated Appliances, said the growth potential of this brand was immense. The company intends growing this export network into the hinterland to the north and the Indian Ocean islands.¹⁵

A completely different market is the US, where household electrical appliances are, according to Mr Thompson, sold as throw-away items. While safety and quality are tightly specified, the market is extremely cost-conscious. In both

this market and in the European market, Amalgamated Appliances has been successful and the company is looking to further growth.

5.2.4. PRODUCT RESEARCH, DESIGN AND DEVELOPMENT

Small appliances are fairly basic in design. Locally manufactured products tend to be simple, while imported products are more sophisticated. Nevertheless, design is a major component of the cost of manufacture. Amalgamated Appliances is continually looking at new designs to reduce manufacturing costs.

The company has recently embarked on substantial research and development, investing R3,5 million in 1995 in new products to bolster exports to Europe. These products were planned to appear on local and export markets by the third quarter of 1996.

The first new product arose out of an agreement with Strix, one of the companies Amalgamated Appliances had discussions with about a technology partnership. It designed a new cordless kettle which not only has a simmer control which transforms it into a miniature urn - maintaining the temperature of the water at 95 degrees - but a longer boiling period, which is designed for sterilisation of baby products and the like, as well as illuminated switches and a filter to appeal primarily to the British and USA markets. This particular kettle, at the time of research, was still in the development stage.

Another of its new products is an iron which, compared with the conventional iron with 24 screws in it, has only two. It clips together, "like one of those Lego sets", management explained. From a manufacturing point of view, this reduction in screws has major cost advantages. The iron also has other features such as optional sole plates, which can be changed according to the export destination. The new iron will be launched on the European market under one of the European brands.

The research and development person has always occupied an office at the KwaZulu-Natal plant. The company's research into the new iron was innovative and unusual. Focus groups with women who use irons were held to determine the major problems with irons. One of the critical issues was that when you drop the iron it breaks. For this reason, Amalgamated Appliances decided to design a level of shock-absorbents into the iron.

5.2.5. CUSTOMERS AND DISTRIBUTION

The company holds no final stock at all, sending about 80% of the products directly to Johannesburg and the rest to Tedex in Durban. Tedex handles this quantity of products for a 5% fee, with the Johannesburg office distributing to the rest of the country. The new factory in Pinetown will have a warehouse to distribute about 30% directly to other centres. This decision was partly justification for building a facility in the Durban area rather than in Johannesburg. While the factory works on a make-to-stock principle, the distribution network operates on a deliver-to-order basis from the retailers. Only very seldom is the factory required to make-to-order.

5.3. FACTORY EFFICIENCIES: PRODUCTION, WORK ORGANISATION AND SHOP-FLOOR PRACTICES

The Amalgamated Appliances manufacturing philosophy is one of breaking even: "The goal is for the sales to the parent firm to meet production costs at a price allowing acceptable wholesale margins but no plant-level surplus."¹⁶ The two features most crucial for competitive success in this market are price and quality.

5.3.1. PRODUCTION COSTS AND THE SCALE OF PRODUCTION

Amalgamated Appliances produces 54 different products, each in varying quantities. The scale of production is relatively small if compared to other small-appliance manufacturers internationally. In China, for instance, the factory makes four million irons a year, whereas Amalgamated Appliances produces only 400 000. However, the labour-intensive nature of this product means that Amalgamated Appliances is still able to compete with Chinese products, while it cannot compete with, for example, Rowenta. The European companies use highly automated technology and are able to make 5 000-8 000 units of one product per day whereas Amalgamated Appliances produces 5 000-8 000 units of all products per day.

The scale of production has, however, increased over the years. The factory was initially set up to produce 3 500 units per day. At the time of the research it could produce 8 000 units per day. The new facility in Westmead will be able to produce up to 20 000 units per day.

Amalgamated Appliances' production used to be a full-fledged engineering operation involving fabrication as well as assembly. After

the closure, the firm decided to subcontract most of its non-core activities (such as fabrication), which included the sale of expensive machinery, including presses, lathes and numerically controlled machine tools. It sold off the plastic injection moulding machines. This assisted their ability to recover unit overheads since they are no longer that reliant on production volumes or continuous production. In addition, overheads could be reduced both from the sale of equipment which was not running at full capacity, and because they were no longer faced with relatively long change-over times from inflexible equipment: hydraulic presses and injection moulders. The investment in injection moulding, for instance, was worth more than 50% of the capital investment in the business.

As is typical for assembly-type operations, labour is a small component of the cost of the products: for plastic kettles and hotplates it is no more than 5% and 6% respectively, while for the automatic iron and steam iron the proportion is slightly more at 12,5% and 11% respectively. Therefore, cutting labour, or rightsizing, was not going to cut operation costs significantly, but would rather allow the factory to focus on its core activity, namely, assembly.

Despite the crucial challenges faced by Amalgamated Appliances with respect to input costs, management are keen to point out that this does not mean that curbing operation costs is not a huge cost-saver. They increased production to a point where it could match world-wide production standards and came up against the structural and logistical inefficiencies inherent in the New Germany factory. This prompted a critical look at the layout and material flow of this factory, and led to the decision to build a completely new one.

Amalgamated Appliances is now almost solely a final assembly firm where it can achieve rapid change-over times. Previously, the company was constrained by the fabrication side of the business. As Baumann explained, "small-appliance production [was] a fully-fledged engineering operation involving fabrication as well as assembly. With fabrication goes expensive machinery, including presses, lathes, numerically controlled machine tools, plastic injection moulding machines, and so forth. This in turn implies that unit overhead recovery depends entirely on production

volume". He went further to suggest that the company, "was constrained by the need to run efficient batches on its metalworking and plastic moulding equipment".¹⁷

Similarly to auto assembly plants, the company is now highly focused on suppliers: "[There is] a guy here almost full-time just at suppliers' premises looking at their processes, how they plan, what they do, so we ensure that our supply chain is reliable".

Because of this focus on final assembly, the nature of production is really an exercise in logistics rather than in manufacture. This is evidenced by the factory buying and consuming 7 000 000 components per month for its 54 different products.

Approximately 70% of what is sold is manufactured in the factory, with the balance a combination of imported products to offer a complete range to retailers.

The management discontinued conflicting products where they were not in the right segment. The remainder of the products was subjected to a continuous improvement programme where they were constantly analysed in terms of design to improve quality and cost. A number of new products were designed with the latest technology: low-cost heaters were put into the South African market, which increased Amalgamated Appliances' heater sales in units by approximately 70% from the same period in 1994. A new kettle range was introduced and a new export iron range.

5.3.2. PRODUCT QUALITY

Previous research by the ISP showed that South African small appliances are of similar quality to imports. Despite this, the company embarked on an active quality awareness and quality control programme in mid-1993, which effectively stopped the factory for approximately three months. During the change process the management analysed the product range and found an unacceptably high rate of return in a number of products. This led to 20% of the range being discontinued. In 1993 the company was experiencing up to 12% returns on one product. This translates into one in eight customers being unhappy. As management said: "We couldn't let products out the door. It was one of our worst periods".

Over a period of 18 months, the development of the iron went through four iterations, during which major problems were identified and rectified.

Within two years (1995) the company was running at a 2% return rate. This compares favourably with the world accepted level for small appliances, which is in the order of 3%. Attention was also paid to the packaging and instructions for the use of the small appliances to reduce the number of returns of appliances where, in fact, no fault was detected (roughly 34% of the products returned)

In order to keep pace with international standards in quality, the company benchmarks itself against international competitors. It has a technology relationship with Rowenta in Germany and with a company in Switzerland. It has recently developed technology partnerships with companies in Spain and Italy.

5.3.3. FACTORY LAYOUT

The New Germany factory site was utilised to the fullest but given its age and original intention and design, became inappropriate for good material flow or true cellular layout. As management stated, "it [was] a very disjointed manufacturing facility" since it grew eccentrically with the key restraining factor an absurd amount of material handling. The company was in operation on the New Germany site for six years as Lion Appliances and then for three-and-a-half years as Amalgamated Appliances.

The result of the factory growing over a period of time and changing ownership was the inappropriate location of different parts of the factory, such as the metal-press department, the injection machinery section and the receiving department, compared to the final assembly department and warehouse. The routing of work in progress was, therefore, circuitous and inefficient. Although the New Germany factory has made a partial transition to a cellular layout where workteams concentrated on a product or family of products in the final assembly the process was hamstrung by the need to achieve economies of scale on the fabrication side.

Although the flexible assembly workteams could switch between products very quickly, they were not able to manufacture on a true one-batch basis. The plant did not have the necessary information infrastructure and materials-handling technology to operate a fully-flexible multi-product system.

The new factory site in Westmead - a R12 million investment - has been designed with all these problems in mind and offers the company a unique

opportunity to utilise space effectively, route work in progress appropriately and locate large machinery exactly where it is needed in terms of the stage of production. The new factory provides two-and-a-half acres under roof (in other words, 40% larger than the previous factory). The crucial difference, however, is that it provides process flows for the products and appropriate levels of automation through an open-plan layout. As emphasised by management talking about the previous facility, this was necessary to "get ourselves to world-class level - we can't be world-class on these premises, that's the reality". In the new factory, by contrast, management emphasise that they can design it and play around with it inside to optimise production systems.

The company now focuses on subassembly and main assembly. It is in the latter area that the company is experimenting with single-operator workstations in addition to the cellular layout based on flexible assembly work teams which concentrate on a product or family of products. In trials concluded in the previous factory it was demonstrated that Amalgamated Appliances could operate at 35% above international benchmarks on the production floor using these single workstations. The Amalgamated Appliance management team understood clearly that these interrelated production problems (high inventories, many components, underutilisation of capacity, etc.) were, as Kaplinsky and Mhlongo suggest, "classic symptoms of a multi-product functionally laid-out factory".¹⁸ The package of solutions, first developed by Toyota in Japan, which exist to remedy these problems, and which were adopted by Amalgamated Appliances' management, include "moving to a cellular layout and the systematic adoption of a programme to reduce batch size and change-over times".¹⁹

The new factory has also been designed for future growth in capacity, in exports and in product differentiation. It includes a handling facility to be able to export more efficiently, with a possibility of two containers a day leaving the factory. Currently exports as a percentage of total production is very small, running at approximately 5%. It has also got the potential to incorporate production lines for a number of recognisable brands, including one of German origin, one or two of American and Australian origin and three to four from Britain. These brands use the same standard equipment as the local

brands but allow for different specifications and levels of features which add value for specific export markets.

6. EVALUATING INTELLIGENT PRODUCTION AT AMALGAMATED APPLIANCES

In this section we evaluate the activities of Amalgamated Appliances at its New Germany factory, according to the intelligent production index developed by the human resources, corporate governance and public policy study of the ISP. While the first set of issues is categorised under the heading 'Work organisation processes and structures' and the following set of issues as 'Human resource development and skill formation and corporate governance and compensation', it is clear that these are artificial divisions and dealt with separately only to provide some structure to the discussion. So as not to privilege any of these categories, we have given each a maximum of 18 points, giving the index a full score of 54. The full details of the index are outlined in Appendix One.

6.1. EVALUATING WORK ORGANISATION PROCESSES AND STRUCTURES

One of the new developments in work organisation during the one-year run-down period was to test single-operated workstations for productivity and performance efficiency. This was done in response to international benchmarks, which showed that 200 units could be made per worker per day compared to the 100 units per worker per day at the New Germany plant. After discussion with the workforce it was agreed that single-operator workstations would be tested. The workers' response, management said, was, "we'll show you". They reached 180 units per day and realised that it was possible to meet, if not exceed, the UK levels. Management talked about pride of ownership, and cited an example of a complaint from Tedalex about a HAZ iron: one of the workers insisted on giving the complainant a new iron off the line. On the single-operator workstations, they are able to put the worker's name on the bottom of the product.

A critical reason for these results is the one-to-one correspondence achieved between final product and worker. As management argued:

"We're trying to create this...personal angle to manufacturing where you come to work because you're here with friends and you're happy to work here. And one of these things, like the little cards, the little card that this

product was made by Susie, we hope you're going to enjoy this product, if there's a problem contact the business and ask for me at Amalgamated Appliances telephone xyz".

Evaluating these aspects against the intelligent production enterprise index, we are concerned to understand whether work is organised in such a way that it privileges the skills, experience and involvement of the workforce.

This category of the index is made up of five components, namely:

- *Teamwork.
- *Factory flexibility.
- *Maintenance.
- *Control.
- *Security.

<p>Work organisation processes and structures = teamwork (8 points) + factory flexibility (3 points) + maintenance issues (2 points) + management control (3 points) + worker security (2 points)</p>

6.1.1. TEAMWORK

Our first criteria here is whether there is cooperative, flexible work where workers are organised into teams. Management had not yet introduced teamwork on the shop-floor, although it was in the process of organising the workforce into teams. This was a new step forward for the company which, two years earlier, was still using quality circles and green areas. It was a natural progression from their attempt to achieve sustainable flexibility for the small South African market, through the introduction of multi-skilling programmes linked to work teams and team bonus schemes. Management viewed team work as essential for the functioning of the multi-product cellular system. We have, therefore, allocated it one point.

We have identified a number of indicators to ascertain the extent to which these teams engage in meaningful activities such as planning, identifying quality at source and being involved in line balancing or staffing levels. Since the teams were still in the process of formation these indicators could not be measured and, therefore, all receive zero out of a possible seven points.

6.1.2. FACTORY FLEXIBILITY

The second set of indicators relate to flexibility. Increasingly companies are moving away from ensuring labour flexibility through numbers - in other words, casualisation or work or employing a pool of temporary labour. However, it is clear that outsourcing and subcontracting of non-core manufacturing activities is pursued by many firms as it is by Amalgamated Appliances. Nevertheless, it appears that within the core competence of the firm, 'better practice' indicates that labour flexibility is best achieved through organisational flexibility. This involves, among others, changing work organisation, multi-tasking and multi-skilling and job rotation of workers. Amalgamated Appliances scores one point for each of these indicators since much effort has been put into multi-tasking workers and to give effect to ongoing job rotation, as well as experiment with new forms of work organisation such as single workstations. As the factory manager asserted:

"When you're talking about the millions of products that move through here - think we move something like seven million components - ight now we're probably moving about 10 million components through this facility a month. And if there's any problem anywhere, technically or in terms of supply, you have to have the ability to switch your people and do something else. It's [multi-tasking] an essential part of this facility".

This ability to take on a range of tasks impacts on about 85-90 % of the workforce. It does not pertain to the highly skilled areas, such as the application of Teflon-based coating, or where there are specific process or machine work required.

It also necessitates working-time flexibility so that machinery is "sweated" through its continuous use. In this way, economies of scale are achieved which is necessary to keep production costs down. Where the continuous use of machinery is not important to manufacturing-working-time flexibility allows the company the ability to utilise slack time or non-production time for training and maintenance. At Amalgamated Appliances there is a combination of these forms of flexibility utilised. A number of people are permanently on two shifts, and the company

utilises shift work for increased demand. Amalgamated Appliances, therefore, scores three points for labour flexibility.

6.1.3. MAINTENANCE

The third set of indicators pertain to maintenance: the adherence to total productive maintenance, which involves pushing routine and preventative maintenance to production-line workers. While maintenance is done on the line at Amalgamated Appliances, it is done by other workers or contracted out. Production workers have not been trained to do this themselves. There is limited maintenance in the area of testers and screwdriver equipment. Therefore, the company scores zero out of a potential two points.

6.1.4. CONTROL

Since it is the teams or direct production workers that are now responsible for maintenance on line and for monitoring their own performance, the supervisor-worker ratio can decrease. Management claim that their structure is relatively flat and informal with no supervisors on the shop-floor, only "problem-solvers". The company scores one point for the decrease in the ratio. However, we found that there were still elaborate levels of management including team leaders, supervisors, superintendents, a factory manager and the executive management team, including the manufacturing director. Amalgamated Appliances scores zero for layers of management.

Nevertheless, control spans for management have increased with all levels of management now responsible for budgets and enlarging their areas of decision management. This is an indication of the extent of empowerment of lower levels of management. As management said:

"They're fully accountable and responsible for what they do...and by pushing it further down the ranks you find that...you don't need that many guys at the top to sit and make decisions all day".

Amalgamated Appliances scores two points for control.

6.1.5. SECURITY

The fifth element in the work organisation index is security. Workers' willingness to be flexibly deployed on the production floor and their willingness to participate in production team activities depend to a large extent on their sense

of security in the company. We, therefore, allocate a point to the agreement on job security which is in place at Amalgamated Appliances. At the time of this research, the decision to invest in a new factory had already been taken. Had we conducted the research a little earlier, this employment security would have been absent since workers were faced with imminent closure and production merely to run out the components. Management understood that this security was vital to the success of their new production methods:

"The one thing that's very clear is that people...know that tomorrow they have a job, and that is so key to this whole...position of trust and cooperation. The moment that they think there's a possibility they're going to lose their jobs...the wonderful theories and practices will topple".

This sense of security was also captured by management's view that, should recent achievements consolidate and exports take off, the possibility exists to double volume output and increase staff in the medium-term.

On the other hand, the employee representative committee argued that people were in fear of losing their jobs, having seen many of their colleagues being retrenched. These fears are discussed further in the section on industrial relations, corporate governance and compensation.

In general, for the index, we believe that this security could be enhanced by a greater reliance on informal group discipline as opposed to formal procedures and senior management involvement on

disciplinary matters. However, at Amalgamated Appliances, despite some changes to the disciplinary procedures - in that supervisors are often required to represent workers - and management's insistence that they 'don't crack whips', the formal disciplinary procedure essentially remains intact. Therefore, out of a possible two points, Amalgamated Appliances scores one for security.

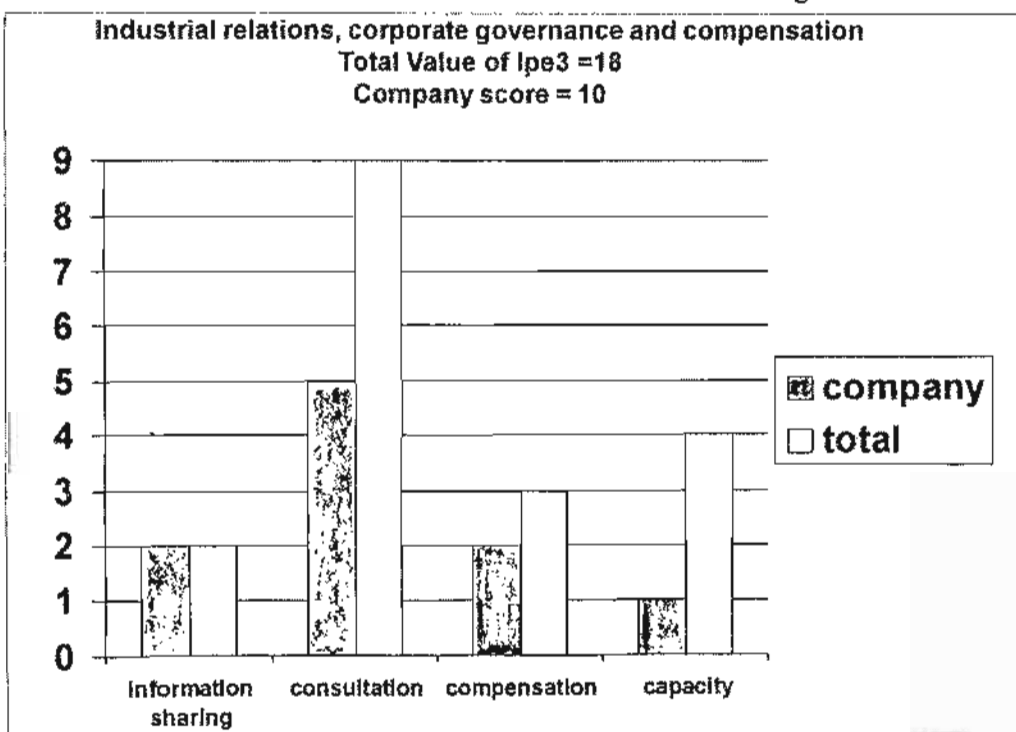
The total score on work organisation processes and structures for Amalgamated Appliances is seven out of 18. It clearly still has a long way to go. This is recognised by management and with the move recently to new and more modern premises, the potential to put in place well-functioning teams and other good working practices is that much greater.

6.2 EVALUATING SKILLS FORMATION AND HUMAN RESOURCE DEVELOPMENT

Central to an enterprise which employs intelligent production is the amount and quality of training it provides to its workforce. We call it 'constant skill acquisition' to emphasise the ongoing nature of the training - not just induction- and because it leads to the acquisition of new skills which are then utilised in the course of production.

This category of the index is made up of four components:

- *Amount of training
- *Appropriateness of curriculum
- *Grading system
- *Facilitation of training



Skills formation and human resource development = amount of Training (3 points) + appropriateness of curriculum (8 points) + the grading system (3 points) + facilitation of training (4 points).6.2.1. Amount of training

6.2.1 AMOUNT OF TRAINING

Factors regarded as important are, firstly, that the enterprise be spending a significant amount (greater than the average of 1,5% of payroll) on training. Amalgamated Appliances spends more than 1,5% of payroll on training. Secondly, the training investment should have increased over the past five to seven years, which it has at Amalgamated Appliances and, thirdly, that a significant proportion of this training is given to production workers (and not mostly management, as is often the case), which is being done. Amalgamated Appliances scores three points for this indicator.

6.2.2. APPROPRIATENESS OF CURRICULUM

We attach great importance to the nature of the curriculum and the type of training offered, for example, production-related skills training, adult basic education and training to improve job performance or to broaden the scope of tasks performed and to increase the complexity of these tasks. The latter may lead to the upgrading or promotion of workers. These forms of training are regarded as more important than management ideology courses or narrow job specific skills training.

Teamwork and problem-solving skills are at a premium at Amalgamated Appliances, although little attention was given to production-related skills or adult basic education. Amalgamated Appliances, therefore, scores two out of a potential four points.

Two issues should be pointed out, though:

- * That the assembly industry does not require advanced production skills.
- * That most of the workforce (over 85%) are literate with educational backgrounds of between Standard 8 and Standard 10.

The factory manager explicitly pointed out that it is not so much the actual production skills, or technical skills, held by the workforce which have

made the difference to production quality and productivity but, rather, the way workers work together on the factory floor:

"The type of training that we required was not skills training; it was this inter-behavioural skills training that we required, and how you deal with people, and how you negotiate".

These two issues may put a question mark over the relevance of the indicators in the index which measure production-related skills training for this particular company. On the other hand, if not all workers are literate, should not adult basic education programmes still be offered?

The aim of training must be to enhance production: allow the worker to have the skills to utilise in the performance of a variety of tasks and to increase the scope of these tasks. Whether or not the worker can make decisions on, and work according to, the skills gained (or recognised) is tested in the next section on industrial relations, corporate governance and compensation.

We are concerned that training meets current national criteria. This would include that the training offered is competency-based training, that it is accredited by a recognised institution of learning and that workers receive a certificate to prove competency. Although Amalgamated Appliances' training is not accredited, it is competency-based training. Amalgamated Appliances does not have a recognition-of-prior-learning system in place. This would allow workers to apply for regrading or to be assessed in terms of training needs. We, therefore, give Amalgamated Appliances three points out of a possible four for these indicators. On the whole, the set of indicators dealing with curriculum scores Amalgamated Appliances five out of a possible eight points.

6.2.3. THE GRADING SYSTEM

The form of training detailed above is directly related to the manner in which workers are graded in factories. The grading system is our third set of criteria. We promote a skills-based grading system in which the acquisition of new skills leads to increased payment. This form of grading is typically preceded by a broad-banding of grades in the factory. This broad-banding enhances job rotation, multi-skilling and team-based work since it limits the potential for disputes about job demarcation and narrow-based tasks. This is because the grading system is based on

the skills held and utilised by the individual worker in the performance of his/her tasks rather than on the actual tasks performed.

Amalgamated Appliances uses the old National Industrial Council grading system of the engineering industry, which is essentially task-based.²⁰ At Amalgamated Appliances, new skills do not lead to increased payment and no broad-banding has occurred.

The grading system is, in fact, a source of tension among the workforce. Most of the workers are graded G, which is the bottom grade; F is a checker, with drivers graded D, which is the highest grade. Although the number of grades has decreased over the years, this is not because of broad-banding but rather that grade H has fallen away and there are no grades C, B or A. The company receives zero out of a possible three points for this set of indicators.

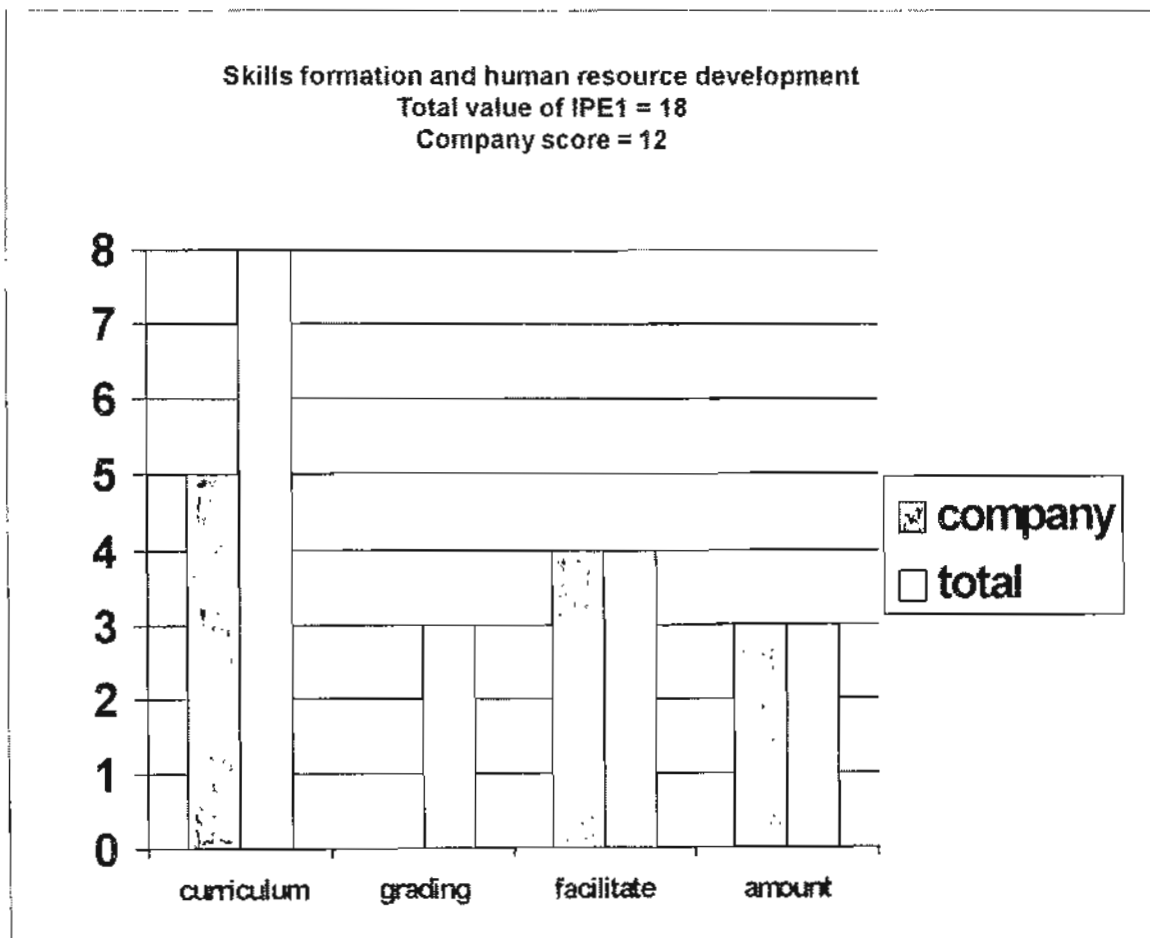
6.2.4. FACILITATION OF TRAINING PROGRAMMES

Joint planning of the training between the management and union or employee representatives is critical to the efficacy of the training, and is reflected on in this part of the index. Amalgamated Appliances involves the employee

representatives in the planning of training. We are aware that the nature of the education and training system is undergoing significant changes, and that production requirements are ever-changing. We, therefore, allocate a point to companies which provide trainers with a programme of training to upgrade their skills and assist their attempt to remain ahead. This is only just beginning at Amalgamated Appliances.

Training plans have traditionally been developed by the human resource departments and their expert training officers. Increasingly, however, production heads (operations managers, production department leaders) are specifying the training they believe is necessary for production workers. Here we allocate one point to Amalgamated Appliances for training plans developed jointly between human resources and industrial relations personnel and production personnel.

Finally, we have observed through the research an increasing significance attached to inter-firm relationships of producers in the supply chain. We allocate a point to companies which assist their suppliers through training. While Amalgamated Appliances do not run formal training programmes for their suppliers, their interaction is regular and educative. One example shows this clearly. An elected employee spent a day with a problematic



supplier and identified a number of problems. As Mr Thompson explains: "She identified five to six crucial weaknesses. The result was a better supplier".²¹

Amalgamated Appliances scores 12 out of a possible 18 points for this section of the index.

6.3. EVALUATING INDUSTRIAL RELATIONS, CORPORATE GOVERNANCE AND COMPENSATION

The heart of the new strategy at Amalgamated Appliances has been a focus on productivity: redefining it, educating the workforce about its various components and designing rewards and incentives to achieve it. The manufacturing director, Arnold Crous, was keen to point out that this was a "people business" rather than about capital investment, engineers, fitters and preventative maintenance programmes:

"Forget about all the other technical things, processes, methods...throw the whole lot away and start looking at how you handle your people. Because I've now noticed that through the people, that's where your success lies, not in the process that you apply".

Mr Thompson went further and argued that the workers themselves defined the productivity focus.

"The productivity focus is not imposed by management. It is something which has emanated from the workers. We believe this is an environment where people feel good about themselves. The battle for survival has forged a whole new approach to tackling opportunities. We are growing a spirit of wanting to do better".²²

The workforce at Amalgamated Appliances consists of predominantly Indian women (about 65% of the workforce is Indian and 60% of the workforce is women) with an educational background of between Standard 8 and Standard 10. The product development of, for instance, the iron is designed to take advantage of the educational background of the workforce and to compensate for the reduction in numbers. As management explained:

"The Chinese manufacture a very low-cost iron with a lot of screws in them. And they can do it because they're paying their labour US\$50 a month... Here we've gone one step beyond that and said, labour is a component; therefore, how do we design an iron where we can reduce the labour content of the iron as much as possible?".

At the time of the research there was no union representation but an employee representative committee. To understand why the employee representative committee often had views contrary

to those of management it is important to reflect both on the former managing director's philosophy of involvement and participation and the nature of the employee representative committee. The former managing director valued one-on-one communication rather than via a third party. He viewed formal structures with decision-making and responsibility pegged to different levels with disdain, equating these with an autocratic type of style, and argued that there was a need to flatten it out while being aware of the problem of informality. He clearly appreciates and encourages regular communication with the workforce and, despite the absence of the union during the run-down period, he says he is comfortable with the union. This is evidenced by the smooth re-entry of the union, the National Union of Metalworkers of South Africa (Numsa), since the opening of the new facility in Westmead.

Mr Thompson shared this view and called it the "miracle of communication". He argued that the involvement of the workforce is not about cooperating but about participation:

"We have managed to break through the management-worker interface. We can no longer claim the cooperation of the workforce. Nowadays it is participation".²³

The employee representative committee, on the other hand, was not a classic employee council in that it consisted of ex-shop stewards and union activists from the time prior to the run-down of the New Germany facility.

The workforce was unionised by Numsa prior to the closure of the plant in 1993 and the re-hiring of workers to run down the facility. At this point, the union was not welcome at the plant, leaving workers unrepresented by a trade union, although the workers set up an employee representative committee. Management pointed out that the plant was closing down by the end of the year and relocating to Johannesburg:

"They knew that they were only here for a year and that the company was going to close down and go to Johannesburg in December - in anyone's language it didn't make sense to join a union".

The employee representative committee explained differently: "When we were employed we should not belong to a trade union...because they had an "experience" with the union...that's what we were told in our induction".

Later they stated that the company "discourages" trade unionism. The company explained that the workers who were re-hired were no longer union

members since they were not paid up and, in addition, the employees themselves did not want to belong to a trade union:

"By virtue of the company closing, subscriptions, everything stopping for one month there's no shop stewards' committee because there are no unions, because the people here have stated publicly that they have such a good relationship with management that they don't need unions. And that will be confirmed by the workers' representative committee".

By July/August the company began to employ an additional 90 workers as production began to pick up and productivity improved. Sometime in August/September 1994 the workers elected one person per department to sit on an employee representative committee. Management also needed this committee because it required a mechanism to communicate with the workforce.

The members of the employee representative committee described their relationship with management as "weak" (on a scale of 1-5 they gave it 1). They elaborated that the relationship was one of "messenger boys or ladies": "What they give us we have to take...and pass it on". By contrast, management described their relationship with labour as very strong (on a scale of 1-5 they gave it 5).

It is clear from the interviews that the delegates to the employee representative committee are convinced their power is weakened by not having a trade union behind them. They argued that a worker representative cannot do what a shop steward used to do because of how the company perceives the difference. They tell you straight: you're a worker committee and that's the way we handle the situation. They actually instruct you...and they want you to do things the way they want you to do things"

The employee representative committee was, therefore, schooled in the practices and philosophies of the union movement, which included fairly standard structures (shop steward committees), forms of interaction with management (through recognition agreements) and levels of bargaining (through the iron and steel industrial council with minimum wages set at the council level).

The informal one-on-one communication practised by management at Amalgamated Appliances during the run-down period is clearly

at odds with the tradition of industrial relations in South Africa, which is all about structures, written agreements and levels of bargaining. It is not surprising, therefore, that much of the workforce's perception, as reflected by the employee representative committee, was not known or understood by management.

Productivity, for instance, was not, according to members of the employee representative committee, discussed with them with a view to agreement. As they say: "No, they don't discuss that [productivity] with us. It's just set on the table".

Despite this comment, the employee representative committee had an excellent knowledge of the performance of the company as well as a clear perception of how the company was perceived. They argued that compared to other companies their performance was not only better than average but excellent and believed that the company was working at full capacity.

If management views their success in terms of what the workforce did and how committed and loyal the workforce became and therefore how productive, the workers (through their Employee Representative Committee) have a contrary view. Management believe the workers went through a "metamorphosis". As Arnold Crous told the gathering assembled for the opening of the new facility:

"With zero job security and nothing to prove, they underwent a metamorphosis and increased production and quality standards out of all recognition".²⁴

By contrast, when asked why productivity improved so dramatically, the Employee Representative Committee's response was anger:

"Because they said to us - we cannot fall under a trade union ... so the people feel frightened, they're scared. They can't say much, they're scared, so they're under obligations and they need the jobs, they're scared to lose their jobs so they're frightened to say much or do much".

These opposing views by management and the Employee Representative Committee about union membership have been explored here at length because of the ISP's belief that labour-management co-operation add value to management adjustment processes. We found, for instance, that those companies in our sample and in the international arena, embarking on strategies and initiatives to improve manufacturing capability

and competitiveness in the market, tend also to be the companies experimenting with new, more co-operative labour-management relations.

We were concerned therefore to understand whether these opposing views about union membership would be detrimental to the ability of the two parties to co-operate. It is clear that if managers did not believe that participative ways of structuring labour-management relationships at the plant level would ultimately enhance profits, they would not pursue this path. Nevertheless, there exists profound scepticism of departures from traditional approaches in the ranks of both management and trade unionists.

In this section of the index we assess how companies are transforming their traditional relationships with the workforce (hostile, adversarial and lacking in trust) in order to ensure the long term sustainability of their shop-floor reorganisation - rather than simply to prevent collective action. The absence of the union (for whatever reason) at Amalgamated Appliances proved relatively immaterial to the renewed emphasis on participation, consultation and ongoing dialogue with the workforce. Where the absence of the union was material, however, was in the manner in which it was perceived and understood by the worker representatives.

This category of the index is made up of 5 components:

- *Information Sharing
- *Regular Consultation/ Representation
- *Compensation
- *Union/ Employee Representative Capacity

Industrial Relations, Corporate Governance and Compensation = Information Sharing (2 points) + Regular Consultation and Representation (9 points) + Compensation (3 points) + Union/ Employee Representative Capacity (4 points).

INFORMATION SHARING

The first criterion in the Industrial Relations Corporate Governance and Compensation section of the Index, is that critical element, information. New production methods are information intensive and require both new ways of sharing and releasing information as well as enhancing the scope of the information to be shared. Essential to the input which the shop-floor is expected to make is meaningful information sharing - regular meetings

with full information disclosure as well as accessible visual aids on the factory floor highlighting performance, customer satisfaction, efficiency and quality levels as well as ensuring that the workforce knows who its representatives are.

Within Amalgamated Appliances there appears to be regular information sharing on a wide range of issues. However the Employee Representative Committee was adamant that they are not consulted on any of the issues, such as new working methods or training, but rather that they were informed. This highlights the repeated accusation from the workforce in many of our case studies, that information is not given to them when the management insist that it is. The general manager in another company in our sample, MB Glass, Durban, was very clear on this:

"The onus is on the management to ensure not only that information is given to the workforce, but that it is heard and received. This obligates the management to check their language, their form of communication and whether people have understood".

The Employee Representative Committee agreed that they were consulted on new product developments, hiring of new workers, redundancies, staff purchasing scheme and bonuses and allowances. Nevertheless they felt that [the workforce] do not get enough information.

These contradictory comments needed to be reconciled during the research. We found that the Employee Representative Committee were well briefed in many of the crucial issues of the company and that therefore their view that they did not get enough information pointed more to how the information was transmitted and whether it was accepted.

Visual aids were used throughout the factory with many graphs, tables, targets and outputs listed. With a literate workforce these visual aids could be fairly sophisticated and detailed.

The company therefore scores 2 points out of a possible 2 on information sharing.

REGULAR CONSULTATION/ REPRESENTATION

The second criterion is the extent and nature of consultation and representation. The ability of the shop-floor to influence the workplace broadly (i.e. strategy and policy) and narrowly (i.e. on the shop-floor) is positively correlated with productivity-enhancement. We call this task centred

involvement and strategic involvement respectively. Unions/ employee representatives and workers must be regarded as valuable contributors and joint partners. As such it is vital that unions/ employee representatives be recognised and their input accepted at plant level. This means that there should be worker-management committees/ forums for information disclosure, consultation and decision-making.

Increasingly, the strategic level is best handled by regular meetings between senior management and the shop steward/ employee representative committee. Financial disclosure to shop stewards/ employee representatives assists in developing a co-operative and informed approach to company strategy and planning.

At Amalgamated Appliances consultative processes are fairly well developed although formal structures have been avoided. Nevertheless, the management consults and discusses regularly with the Employee Representative Committee and discloses financial information irregularly.

In addition, for reasons of diffusion of company wide (or industry wide) practices in these areas, and for monitoring and co-ordination reasons, we believe it is necessary for there to be representation as well at the company or industry level. Although Amalgamated Appliances is a member of Siefesa, there is no representation at the industry level.

Formal agreements on work organisation between the unions/ employee representatives and the plant management assists the process of re-organisation and avoids unnecessary disputes, conflicts and insecurity which arise from the ongoing nature of such reorganisation. Employee suggestions have been found to be a successful mechanism to encourage employee participation and involvement and these are in place at Amalgamated Appliances.

However, there is no plant bargaining at Amalgamated Appliances in the sense that wages are determined from the National Industrial Council for engineering, there is no representation at the company level by the Employee Representative Committee (although the manufacturing director claims to reflect the views of the workforce at the company level). There is no formal agreement with the Employee Representative Committee on work organisation.

To understand some of the flavour of this employee involvement and participation it is useful to reflect on how employees engage with suppliers.

Meetings are held with suppliers by members of the workforce and management and when customers come around, the workforce available for discussions with customers on the floor. In March 1995, fifty of the most important customers came to the Pinetown factory to see how the factory operates. Management explained to the workforce that they wanted the customers to understand quality, cost-effectiveness, commitment to customer services and the like. Again, says management, the response from the workforce was "we'll show them".

Amalgamated Appliances scores 5 points out of a possible 9 for the consultation set of criteria.

COMPENSATION: INCENTIVES, REWARDS AND PAYMENT

Thirdly, there is renewed interest in rewarding performance and developing appropriate compensation packages to encourage participation and commitment to productivity-enhancement. The compensation package may include motivational rewards for company performance (profit sharing), skill acquisition (payment-for-skill) which is covered in the index on skill acquisition and human resource development, gains made in production which are shared amongst the workforce in total (factory incentive system) and implemented suggestions.

Amalgamated Appliances believes that incentives and rewards are critical to performance. They argue as follows: "It's very difficult to sell a benefit to an employee unless ... there's some reward of some kind to be shared".

They have factory-wide incentive schemes (discussed below) but have no system of profit sharing. The company has developed a scheme for rewarding implemented suggestions financially. Although these were not yet in place, the company has been awarded a point since the starting date for the scheme was January 1996. This system will work as follows:

"The award system will be in terms of internal competitions, and individual competitions. And also linked to productivity improvement or improvement ideas which we will implement. And where ideas ... could be documented in terms of Rands and cents, it works on a percentage basis - but they get

the saving up front. It will work on the basis of a percentage of saving ... up to a maximum of R10 000".

The manufacturing director added that, "if someone comes up with a million Rand saving I'll gladly write them a cheque ... for R100,000, no problem".

Management point out that they have been able to redefine productivity "to make it an individualised component so that productivity becomes a belief in the individual's ability to prove".

The plant operates a number of reward systems:

First, there is the "pride of ownership" scheme whereby the worker allocates her name to the bottom of the product in single operator workstations:

Second, is the factory-wide incentive scheme which allows each person to benefit from the productivity of the factory and also imposes a degree of group discipline on the employees. Two examples illustrate this well. Suppliers were late with deliveries causing products to build-up on the floor and preventing the factory from meeting set targets. A representative from the Employee Representative Committee approached senior management to say that this was unacceptable. The management agreed to a delegation (management and representative of the workers committee) to go the supplier. As management elaborate:

"They went there and they had serious discussions with the supplier and made some serious proposals and got the supply right. And the workers committee then came to us and said, "look the supplier had taken it seriously and we're prepared to give them the benefit of the doubt, we'll see if they can meet the requirements". And they did, and its just carried on".

A second example is of workers' who are unable to come to work who were asked to explain themselves to the workforce why they were absent.

Third, are the dust-coats which were given to all the workers. The workers then decided to use their own money to buy uniforms (designer uniforms made into dresses) which they wear underneath the dust-coats. While this is often seen as symbolic only, management insist that investment in these dust-coats and the white T-shirts with the company logo on is "not just a one-

off return, it just keeps on coming back". This view conforms to the experience reflected on in the international literature that forms of symbolic interventions are extremely powerful when associated with other structural (layout issues or technology upgrades) and process (work organisation, human development) interventions, although weak when implemented on their own.²⁵

Fourth, is the staff purchase scheme in which employees are allowed to buy up to an amount of R2000 with an 18 month pay-back period without interest and with a 12 % deposit. This scheme includes not only the appliances produced at the Amalgamated Appliance factory, but the whole range of Tedelex products, such as hi-fis, video machine, TVs and so on.

Fifth, is the attendance bonus scheme which the Employee Representative Committee highlighted. It works by using 6 months as the period: if no absenteeism occurs in that 6 month period, then the worker will get R40 extra per month although if the worker is absent at any point in that 6 month period this bonus will not apply to any of the months in the period.

The Employee Representative Committee expressed concern that the increased productivity which results from the individual bonus systems, which expect that employees produce high scores, will result in there being no employment opportunity for others outside of Amalgamated Appliances. As they explain

"And if you [are] ten people and those ten people meet with that expected target, so they don't need people from outside ...you understand what [person's name is mentioned] trying to get at. Which means that there's no employment - the people outside will never get a job in Amalgamated Appliances".

This is a fairly typical response from workers in relation to productivity improvement and not surprisingly was felt by the workers at Amalgamated Appliances who were producing more output than the previous workforce (prior to the closure and run-out period) achieved.

Despite the existence of a fair number of incentive systems the biggest incentive of all, the basic wage, remains a source of tension for the workers (says the Employee Representative Committee). This is because, prior to the closure, workers received the union negotiated actual rate of R7.47. After the closure, the management paid the workers the minimum wage rate of the industrial

council - R5.67. Over a period of 2 years annual increases have taken the lowest rate to R7.18. There was much speculation in the interview about whether, if the retrenchments had not occurred, Grade G would now be on R12.00 per hour.

However, management acknowledged this dissatisfaction and explained that this was precisely why they introduced the financial reward systems now in place. They explained:

"The introduction of these incentives was drawn out of a realisation that all employees in this company have paid a price to still have a job. Its very difficult to compare your income this year to last year and say, I'm earning less now but I'm expected to be a happy person. And we needed to find a way of paying people more when we can afford to pay them more.... the more we do better, the more we will pay".

Unfortunately, this understanding was not well communicated to the Employee Representative Committee who voiced extreme dissatisfaction at the wage issue and the related question of union representation.

Amalgamated Appliances scores 2 points here out of a possible 3.

UNION / EMPLOYEE REPRESENTATIVE COMMITTEE CAPACITY

The fourth area concentrates on enhancing the capacity of the union/ employee representatives to participate fully in production related issues. We focus on the importance of the reps being able to make inputs into team meetings as representatives. Their ability to raise issues of direct concern to members

of a production unit/ team directly contributes to the ability of the team to work co-operatively. Since teams were not yet functioning there is no score here.

The representatives would need to report back to the workforce on workplace restructuring initiatives in production time or to listen to concerns from the workforce around these initiatives. Employee representatives are able to hold these meetings at Amalgamated Appliances.

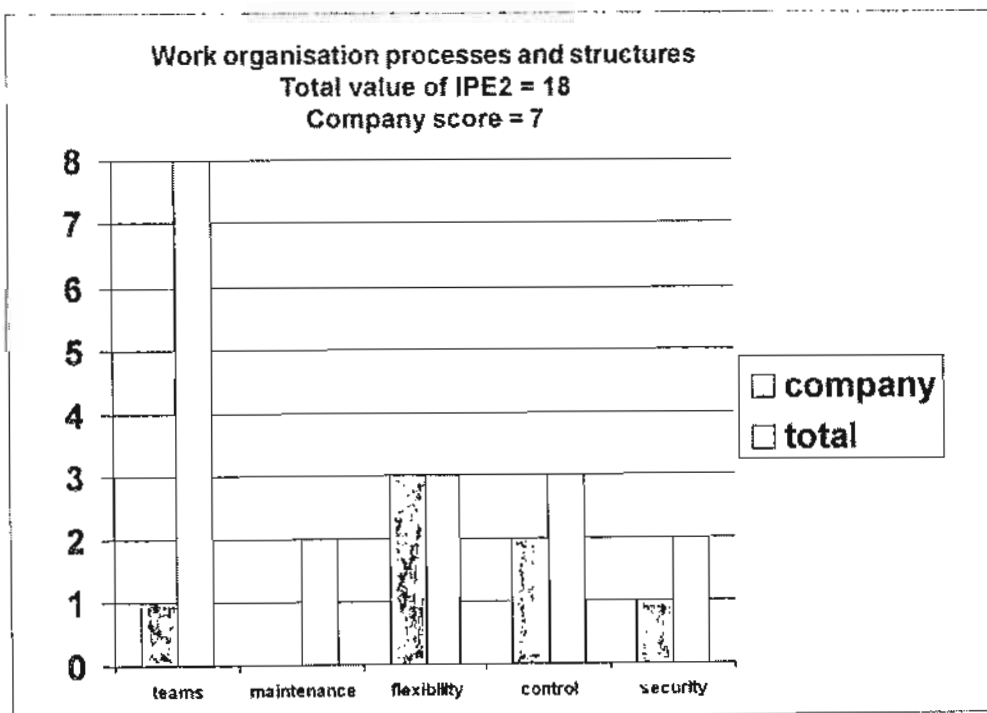
These representatives in turn require training in understanding production and in participating in production decisions. Finally, the representatives require access to resources (financial or outside expertise) to enable them to interrogate the information presented to them. Neither of these indicators were found at Amalgamated Appliances.

The company scores 1 out of a possible 4 points here. In total for this section on Industrial Relations, Corporate Governance and Compensation, Amalgamated Appliances scores 10 points.

6.4. ASSESSING THE INTELLIGENT PRODUCTION ENTERPRISE INDEX AGAINST THE FIRM'S PERFORMANCE

The evaluation of Amalgamated Appliances included an outline of the environment in which it operates, organisational issues and shop-floor practices. Some of these factors were measured by the Index. To summarise:

The environmental issues pertinent to the Amalgamated Appliance company include the problem of raw material costs, the restructuring of



their supplier relationships, their renewed emphasis on the export market for appliances from the domestic factory and through joint-venture agreements as well as their resolve to recapture market share from their competitors. The initiatives taken in these areas have been documented and discussed in detail. Suffice it to say here that the external environment produces some of the more crucial challenges to the company since many are outside of their control, particularly that of raw material costs and tariff issues.

The bulk of this paper has dealt with the organisational issues and shop-floor practices which arise in the company. These include the range of questions addressed by the Intelligent Production Enterprise Index as well as the background given to this by the discussion on factory efficiencies. The inefficiencies in the factory and the resulting poor performance were the critical catalysts for the change or restructuring process which we witnessed at the company.

We measured these changes according to the Intelligent Production Enterprise Index and awarded the company a score of 29 out of a possible 54 points, or 53.7% on the Index - a relatively low score. This captures well some of the inadequacies of and contradictions in the process.

There are a number of questions that need to be answered here:

- * how do we reconcile the low score on the index with the firm's performance?
- * why did these initiatives and new processes on the shop-floor and beyond translate into improved performance in the company?
- * what does this case study tell us about the index?

Amalgamated Appliances' score on the Index is not very high although they score well on the component of the Index which measures Skills

Formation and Human Resource Development. On the other hand, their performance has shown a dramatic turnaround.

Some of the figures are shown in the table below. The performance figures indicate the remarkable recovery the company has made by implementing what appears to be a holistic package of solutions to a complex set of problems. The Index measures one dimension of this package of solutions: the organisational and shop-floor practices necessary to sustain good firm performance. Despite the relatively low score in the Intelligent Production Enterprise Index, the combination of what the company has achieved or initiated in the organisational and shop-floor arena has, together with a renewed emphasis on an integrated marketing and manufacturing strategy resulted in better performance, efficiency and productivity outcomes for Amalgamated Appliances.

It is the integration of these factors which has led to the performance figures we see below. The extent to which the company will be able to sustain these figures, however, is reflected in the Index. Unless the teams are established appropriately, unless workers receive the necessary training and unless workers remain willing to contribute their skills and experience and feel able to participate in production related decisions, these performance figures may well look very different in three to five years.

Finally, the case study indicates that a greater level of flexibility be built into the index to allow for an accommodation of the priorities of differing production processes. These relate, for instance, for work organisation to the importance of team-based, multi-skilled working arrangements to ensure accountability for cost, quality and scheduling in assembly industry (such as small appliances or auto manufacture) compared to team-based, multi-skilled working arrangements to undertake minor

AMALGAMATED APPLIANCES	1993 (Before the closure)	1995 (Towards end of run-out period)
Customer returns	8-12%	2.5% (average 3%)
Unhappy customers	1 in 8	1 in 50
Annualised turnover	> R120 million	> R140 million
Profits	-R1 million per month	+R2.5 million per month
Set up and change over: shortest time	3 hours	5 minutes
Set up and change over: longest time	4.5 hours	1 hour
Customer delivery lead times	up to 3 months	2 days - 1 month
Regular meetings with suppliers	no	yes
Problem solving with customers	no	yes
Engage in R&D	no	yes
Breakdown of innovation: product and process	100% process	50:50
Capacity utilisation	at full capacity	considerably below full capacity: 85-90%
Statistical process controls	no	yes

maintenance and process control in continuous process production enterprises (such as paper, chemical or steel production). For the section on skill acquisition and human resource development these would include an ability to manage materials and reduce rework over an increasing number of assembly stages in assembly production whereas for continuous process production this skill development would need to include an ability to reduce downtime and improve yields while operating an increasing number of machines.

7. POLICY CONCLUSIONS AND LESSONS FROM THE AMALGAMATED APPLIANCE EXPERIENCE

In the introductory section we drew a link between the firm-level case studies and public policy. However it should be said at the outset that broad policies often have little effect on the shop-floor (whether in factories, mines, offices or farms). It is here, on the shop-floor, where imagination, enthusiasm, commitment, ingenuity and a profound appreciation of the specific context is required. Governments often want some guarantee of success for their policies, but these innovations cannot be imposed from above. The support we recommend below, drawn from the Amalgamated Appliance experience, is neither for detailed prescriptions nor general subsidies, but for programmes, institutions or agencies. This can be in the form of funding or promoting national, regional or industry-level support of various kinds. Other case studies in this study will suggest further support measures or assist in elaborating on those mentioned below. These will be discussed in the synthesis study.

The Amalgamated Appliance experience point to a number of interventions which central government could make.

First, Government could offer consultants with a broad knowledge of international companies at subsidised rates to assist companies wishing to implement these new quality systems and new work systems. While Amalgamated Appliances experimented with innovative forms of work organisation and new supplier relationships it is clear that the company and firms more generally in South Africa lack knowledge of how to introduce new systems. This lack of adequate management capacity results in companies such as Amalgamated Appliances having to "start from first principles". This support from government would substantially reduce the risk involved to companies and aid the implementation process. It is unclear whether Amalgamated Appliances was able to experiment

with these more innovative forms of corporate governance, participation and work organisation methods because of the potential closure of the factory? Did this provide the company with the space to make mistakes?

Second, government could bring input costs in line with world prices and lift duties on components. In Amalgamated Appliances' case, the backing of Malbak was instrumental in facilitating the turn-around experienced by the company, particularly the financing of the new factory in Westmead. Nevertheless the company operates under very tight margins made that much worse by the problem of raw material costs. The company have themselves made suggestions to government about what sort of interventions or policy decisions would assist their ability to achieve world-price competitiveness. This support from government would result in a significant increase in market share for Amalgamated Appliances against imports and for the company to "become serious players in the global small-appliance industry".

Third, government could enhance the quality and capability of management and ensure that enduring partnerships are established between management and the workforce for the purposes of restructuring.

The Amalgamated Appliance company is a good case-study of a company where management were prepared to take the leap and re-organise their managerial hierarchies and re-focus their activities to ensure a more participative and involved workforce in the process of production. Phase one of this research showed that management's inability to handle the logistical demands of a lean, flexible multi-product system was the key organisational problem at the factory. The new organisational practices which were made possible by the training for work teams (inter-behavioural training as opposed to production skills training) assisted in the implementation of Intelligent Production practices at Amalgamated Appliances. Once again, government assistance could be given to companies wishing to implement these productivity-enhancing practices through various supply-side measures. The new Labour Relations Act will go a long way in providing the framework for such enduring partnerships. The Department of Trade and Industry could play a role through mechanisms such as the Sectoral Partnership Fund to assist management in their efforts to make industry more competitive.

Fourth, government could offer support to enhance inter-firm co-operation through sector partnership funds. South African industry has little experience with institutions which facilitate inter-firm relationships of the sort recently entered into by

Amalgamated Appliances. Nevertheless these relationships are still beset with problems relating to reliability and efficiency which could be partially addressed by government assistance. The Department of Trade and Industry is currently developing an implementation programme for a sectoral partnership fund for this precise purpose. This idea was first mooted in the ISP report where international experience was cited as evidence to support the view that enhanced inter-firm co-operation may be the most effective means of supporting SMEs. Sector partnership funds would make resources available to the organised representatives of employers and workers. One mechanism available to strengthen voluntary organisation cited in the ISP report is to making registration of firms within the sectoral business association compulsory. Competition Policy, on the other hand, is cited as one of the only mechanisms for strengthening the relationships between small and large firms.

To conclude, a number of lessons can be learnt from this case study of Amalgamated Appliances:

- * the management spent considerable energy in putting good people in the right positions: "putting the people with the right qualifications - either educational or experience - into the right positions, and we've changed the entire philosophy as to how we run the facility".
- * they used the opportunity of closure to totally re-view how they were working: "it must not be underestimated that we've had the opportunity to clean the slate and start from [scratch] ... many businesses haven't got that opportunity ...".
- * the company shows a willingness to experiment with workplace innovations in final assembly such as flexible work cells, just-in-time principles and single-operator workstations to achieve flexibility rather than attempting to improve on inefficiencies inherent in the combination of fabrication and assembly. Their decision to out-source these non-core activities has made a substantial difference to the companies profitability, capacity utilisation and focus
- * the company is clearly only at the beginning. Management acknowledge that their first priority was to return to profitability and develop a sense of trust and commitment in the organisation. However this sense of trust and commitment is not universally experienced inside the organisation. The Employee Representative Committee clearly felt that it was not well established and much fear and insecurity still existed amount the workforce. These contradictory positions produced some tension between the two parties although the management remained adamant that the success of the company was due in large measure to the renewed commitment and energy of the workforce. If, as the Employee Representative Committee maintain, workers were filled with fear and insecurity, it is difficult to understand why labour productivity rose to the extent that it did. Perhaps now that the union is again organising in the factory, more light could be shed on these different perceptions. For the moment, it appears that the Employee Representative Committee were expressing a deeply held anger that the union was side-lined by the management rather than necessarily commenting on what the management was doing to improve relations with the workforce
- * the management team is small and involved in all the elements of change. They describe is as a "small, tight ship". They add however, that having streamlined the organisation there are now very few people around, "and the danger is that your resources is (are) a little bit stretched and that certain things can fall off the table Although it's very nice to run a small, tight ship - that ship takes it's price".
- * the management are clear that numbers or rather the bottom-line is not what counts: while important elements must be measured in quantitative terms: "we've been 54% efficient and utilisation has gone up by 50%, they are clear that productivity and change cannot be measured in absolute terms. It's measured in terms of the overall results and performance of the company, and most definitely in terms of the feedback from the employees. Statistical measurement of improvement and change does not actually reflect the values and perceived state of minds of the people that we actually try to influence". Nevertheless it is clear that the improved profitability provided the management team with the enthusiasm to continue the process of change and involvement of the workforce which otherwise might have run its course
- * at the time of the research the form of representation for the workforce was an issue causing mis-trust and ill-feeling. This appears now to have been resolved through the re-entry of the union into the factory since it opened its new facility. A lesson for trade unionism may

well be the need for a measure of patience in the face of company restructuring or potential closure. The workers at Amalgamated Appliances were clear that as soon as the company stabilised and the facility moved into the new factory at Westmead, they would bring the union back in

- * a key consideration for management was to enter into a partnership with the workforce. Unfortunately little attention was paid to formal agreements or structures although the management partially overcame this by emphasising ongoing communication and dialogue. This is well reflected in the index results
- * at the time of the research teams had not been trained yet so it was difficult to judge how these teams would be held accountable and be involved in decision-making around production issues. However if teams are not given the training, responsibility and decision-making opportunities they will fail as teams.

One of the critical questions in any process of change is whether any of the new procedures, structures or practices will be sustainable over the long period. Our view is that it is this sustainability which is measured by the Intelligent Production Enterprise Index. Clearly, Amalgamated Appliances are well on their way in putting into place these conditions which provide the "conducive environment" for organisational change. The policy implications are however clear: government assistance would be most valuable in ensuring that the initial steps made by the company are followed through and are encouraged through the use of subsidised assistance or other forms of supply-side measures to ensure that these productivity-enhancing practices are sustained into the future.

Despite the view from the employee representative committee, that their performance has more to do with fear of more job loss and loss of union representation, the factory has made a startling turn-around which the management are adamant have as much to do with increased effort from the workforce as anything else. As they say:

"It's that common goal and the hurt and the pain in the first few months [which] forged something new. And that something new is what we then hung onto ... this thing has got a heartbeat, there's like a little foetus here, let's grow this thing. We got the workforce and decisions and how it went to tackle the shareholders, but it

was through that effort there that this whole thing started to swing around. The factory is theirs, it's not mine, it's nobodies, it's their factory".

The most dramatic evidence for the remarkable recovery of Amalgamated Appliances must surely be the opening of the new facility in Westmead after almost certain closure according to the Malbak shareholders. It is not surprising that the management team were keen to have Trevor Manual, as then Minister of Trade and Industry undertake the actual opening and unveil a plaque congratulating all staff and management for the will they have shown in returning from certain shutdown.

Wally Solomon, former managing director expresses this optimism well:

"With the rapid growth in electrification in the country we are confident that it won't be long before demand goes to the point where we expand production. We are very excited by the prospect (at opening). The management expect to reflect an annualised turnover of just under R140 million in the near future".

It will indeed be worthwhile for anyone interested in workplace change and innovation to monitor the effect the new facility makes on these procedures, structures or practices. There is no reason to suggest at the moment that this will be anything other than positive.

APPENDIX ONE:

THE INTELLIGENT PRODUCTION ENTERPRISE INDEX

The Intelligent Production Strategy developed by the ISP in phase one draws together the separate components of human resource development, work organisation, skill upgrading, the remuneration system as well as plant level governance and collective bargaining.

These components of 'Intelligent Production' provide an environment conducive to the implementation of 'better practice' enterprise restructuring. The ISP has constructed a simple index of these components²⁶. The index measures both the 'better practices' in three components as well as the desirable practices necessary for the diffusion of these practices throughout the company, the sector and the supply chain. For example, with regard to the latter, we include indicators for training of suppliers, company membership of employer associations and company or industry-wide bargaining arrangements.

The three categories of the IPE Index are Skill Formation and Human Resource Development, which focuses on the quantity and quality of training; Work Organisation Processes and Structures which is centred around the extent to which work is organised to make optimal use of workers' skill and experience; and, Industrial Relations, Corporate Governance and Compensation which measures the extent to which companies are transforming their traditional relationships with the workforce in order to ensure the long term sustainability of their shop-floor reorganisation.

The methodology we have chosen follows that of Guy Standing of the International Labour Organisation (ILO) who has promoted the use of an index - a Human Development Enterprise index - to assess to what extent firms have 'exemplary labour and employment practices and mechanisms to ensure development in terms of skill, social equity, economic equity and democracy'²⁷.

While most of the elements of this index represent the organisational environment within which companies actually go about production, we also include a number of shop-floor practices which in themselves constitute "better practice" such as particular methods of problem solving, visual display of performance and the 5S²⁸ disciplines. Anton Grutter of the Graduate School of Business, together with Dena Lomofsky and Mzwandile Ntswayi have developed a framework for defining shop-floor best practice and highlights three layers in his conceptual framework²⁹. They explain: "The practices associated with shop-floor best practice are represented at the core of the framework. Practices or methods such as visual display of performance, 5S disciplines, statistical process control, methods of problem-solving, etc. are categorised here. Elements such as teamwork, incentive schemes, multi-skilling and operator-centre

training are essentially systemic or structural in nature. They are therefore categorised in a layer called organisational around the core practices. The outer layer represents the environment within which best practice takes place. Policy and contextual issues such as industrial policy, industrial relations, and the social, political and economic context would be categorised here".

The purpose of the ISP research into South African manufacturing firms, is to understand the catalysts for moves towards better practice and the conditions under which initiatives become sustainable over the longer term. It is these conditions, or "conducive environment" that is being measured by the Intelligent Production Enterprise Index.

The Intelligent Production methods will not, in and of themselves, give firms a competitive edge or allow the firm to withstand increased competition or tariff reduction. A focus on these, to the exclusion of performance and efficiency criteria and 'best practice' marketing and manufacturing initiatives will, in all likelihood, fail to provide firms with the necessary systems, structures and procedures to survive the new competition. Likewise, a focus on performance and efficiency criteria, to the exclusion of the Intelligent Production methods will result in the firms' performance and efficiency results being unsustainable. It is a balanced approach which is needed. The index measures one side of this balance, and then attempts to correlate these results with the improved performance and enhanced efficiency achieved by the firms.

CONSTRUCTING THE IPE INDEX

The promotion of "Intelligent Production" can best be done through the identification of indicators that characterise the various elements of such an enterprise. As Standing as explained in relation to the construction of an HDE index, "we need to identify proxy indicators that capture the essence of the practices, principles and outcomes that deserve to be promoted" (1995:5). As he explains, these invariably need to be measured through an indirect or proxy variable. Since many of the elements to be measured are not quantifiable, problems of selection and subjectivity inevitably arise. They contain, as Grutter et al have also observed, "implicit expectations, assumptions and complexities".³⁰

In developing an index which can be utilised by all stakeholders we have been concerned to keep the index as simple and as transparent as is possible. In this way sophisticated statistical techniques have been avoided. We have been guided by Standing's explanation of his choice of methodology which we found to be pertinent in the construction of the IPE index. This can be summarised as follows:

- * the development of an index made up of numerical values
- * the construction of this index from sets of 'indicators' of

underlying phenomena

- * the use of an ordinal scale for the index rather than weighting certain indicators

WORK ORGANISATION PROCESSES AND STRUCTURES

This category of the index is made up of 5 components:

- * **Team working:** existence of team-based work; if workers elect team leaders; if teams control budget of inputs for their work area; if team meetings are held in production time; if team members input into the agenda of the team meeting; if team members control quality on the line; if team members control schedule on line or line speed; if team members have a role in line balancing or staffing levels;
- * **Factory Flexibility:** if labour flexibility is ensured through job rotation and multi-tasking; if it is ensured through changing work organisation; if it is ensured through working hour flexibility;
- * **Maintenance:** if total productive maintenance is adhered to; if production workers conduct maintenance on the line;
- * **Control:** if the supervisor-worker ratio has been reduced since introduction of new working practices; if there are 4 or less layers of management; if spans of management control have extended;
- * **Security:** if team members are involved in informal discipline; if there is an agreement on employment security.

SKILLS FORMATION AND HUMAN RESOURCE DEVELOPMENT

This category of the index is made up of 4 components:

- * **The Amount of Training:** whether it is 1.5% or more; if it has increased over the last 5 to 7 years; whether a significant proportion of training is offered to production workers;
- * **Appropriate Curriculum:** production related skills training; health and safety training; interpersonal/ problem solving skills training; adult basic education; if training is provided to production workers which increases the scope of the employees work [and leads to potential regrading or promotion]; if training provided for established workers to improve job performance or transfer between jobs of similar skill; if training offered is certificated and/ or competency-based or industry accredited training; if there is an RPL system on offer;
- * **Grading System:** if there is a skills-based grading system in the plant; if payment for skills acquired occurs for production workers; if grades have been broad banded;
- * **Facilitation of Training:** if training is designed jointly between training managers / hr managers and production engineers; if there is a programme of training for trainers; if the training plan has been agreed between union/ employee representatives and management; if training is offered to suppliers.

INDUSTRIAL RELATIONS, CORPORATE GOVERNANCE AND COMPENSATION

This category of the index is made up of four components:

- * **Information Sharing:** if there is regular information sharing on issues such as work organisation; production scheduling, quality, new machinery etc.; if accessible visual aids are used on the factory floor relating to team members, workforce representation, performance measures etc.;
- * **Regular Consultation/ Representation:** if the union/ employee representatives was brought into the change process up front; if there is bargaining at the plant level; if there is centralised bargaining/ representation at the company level or industry level; if there is a consultative committee or mechanism that meets at least once a month; if a meaningful number of suggestions are implemented; if there is a formal agreement on work organisation; if the employer belongs to an employer's association / organisation; if representatives meet regularly with senior management to discuss general company direction and other strategic issues; if there is regular financial disclosure to shop stewards/ employee representatives;
- * **Compensation:** if there is a factory-wide incentive scheme; if profit sharing exists; if financial rewards for implemented suggestions exist;
- * **Union/ Employee Representative Capacity:** if union/ employee representatives make inputs into team meetings; if union/ employee representatives has rights to general meetings in production time on full pay; if resources are available to representatives to assist discussion, consultation and decision-making; if representatives are offered training in production processes.

FOOTNOTES

1 Printed as part of a series called "Human resources, corporate governance and public policy", printed by the Development Policy Research Unit, School of Economics, University of Cape Town. There will be six company case studies in the series

2 The term "best practice" is taken from management literature but is used here between quotation marks only to indicate that there is no static achievement of "best" practice since the "best" today will be constantly innovated and new ways will be sought to be flexible. It may, in fact, be overtaken by other firms which develop new, innovative practices which produce productivity dividends. Therefore, in the heart of the discussion I have chosen to refer to "better practice".

3 The intelligent production enterprise index, developed by members of this project, is outlined in a paper by Joffe, A. and Rosenthal, T., "Intelligent production: an approach to enterprise restructuring", in *South African Labour Bulletin*, 20: 4 (August) 1996.

4 Baumann, T., *The household electrical durables industry*, Industrial Strategy Project, Cape Town, UCT Press, 1993

5 See Joffe, A., "Human resource development and workplace innovation: an intelligent production strategy for industrial regeneration", in Joffe et al, *Improving manufacturing performance in South Africa: report of the Industrial Strategy Project*, Cape Town, UCT Press, 1995.

6 The union, Numsa, which had organised the factory prior to the closure, was not allowed to represent the workers during this period. A later section, on industrial relations, corporate governance and compensation, contains a more detailed discussion of the relationship between the management and the workforce.

7 See Baumann's study for background material on the sector in general and on Amalgamated Appliances in particular. pp 198 - 212.

8 Interim report for half-year ended 28 February 1996.

9 *Business Day*, 29 April 1996.

10 *Ibid.*

11 *Sunday Tribune*, 10 March 1996

12 Baumann, 1993: 199.

13 Baumann, 1993: 202.

14 *Business Report*, 3 October 1995.

15 *Business Report*, 3 October 1995.

16 Baumann, 1993:199

17 Baumann, 1993: 203.

18 Kaplinsky, R. and Mhlongo, E., *South African industrial policy and the learning firm: what can be learnt from a growing adolescent?* DPRU working paper, University of Cape Town, 1996.

19 See Kaplinsky and Mhlongo (1996).

20 The new engineering agreement, signed in 1996, allows for the voluntary implementation of a skills-based grading system developed by the industrial parties and serviced by the Metal Engineering Industry and Education Training Board.

21 See *Business Report*, 3 October 1995.

22 Quoted in *Business Report*, 3 October 1995.

23 Quoted in *Business Report*, 3 October 1995.

24 Quoted in *Daily News*, 11 March 1996.

25 See, for instance, Stace, D. and Dunphy, D. (1994) *Beyond the Boundaries: Leading and Re-Creating the Successful Enterprise* McGraw-Hill Book Company, Sydney.

26 The index is outlined in more detail in Joffe, A. and Rosenthal, T., 'Intelligent Production: an approach to enterprise restructuring', in *South African Labour Bulletin* Vol 2 No. 4

27 Guy Standing 'Promoting the Human Development Enterprise: an approach to enterprise restructuring and corporate governance illustrated in Russia' paper presented at the Technical Meeting on Enterprise restructuring and Labour Markets Turin Centre, ILO May 31 0- June 2 1995. A shortened version of this paper appeared in *SAIB* 20:1. Standing, together with John Sender, and John Weeks promoted this idea in South Africa through the 1996 ILO country review on South Africa: *Restructuring the South African Labour Market*. The South African Challenge, ILO Geneva

28 The 5S disciplines summarises the 5 steps in a process defined by the Japanese consisting of Seriri, (to get rid of the unnecessary); Seiton (to organise the necessary and keep all tidy and available); Seiso (to regularly clean and inspect the workplace); Seiketsu (to improve and institutionalise these practices), and Shitsuke (to develop the discipline to stick to these practices). See, Grutter, A. Lomofsky, D. and M. Ntswayi, (1996) 'Introducing Best Practice on the Shopfloor in South African Small, Micro and Medium Enterprises in the Manufacturing Sector', Report to the Friedrich Ebert Stiftung (pg. 11)

29 Grutter et al (1996)

30 Grutter et al, 1996

