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Skills and Technological innovation for global competitiveness: A
case study of Portnet Durban Harbour (PDH)

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Skills and Technological innovation for global competitiveness: A case study of Portnet's Durban Harbour (PDH)

BY

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Abstract

There has been a global move towards involving people in process of change by developing organizations technologically, providing skills training and building capacity in all sectors of society, in spheres of government, the economy and civil society. As a result of global trends in South Africa attention is being given to the question of skills development and technological training within institutions and organizations operating in the developing environment in the public and private sector. Attention is also given to ensuring that such skills development and training includes goals of social, economic and political development.

In the view of the above, this study will examine the question of skills development and technological training at Portnet Durban Harbour (PDH) in view of changing demands imposed by globalisation and new socio – political environment in South Africa as well as national responses to those demands. In examining this question, it would be recognised that the skill question couldn't be isolated from technological changes and increased economic competition resulting from globalization. Within this context, this study's aim would be to determine the response of PDH to global challenges that impact heavily on the skills needs of this organization and technological changes. It will also examine whether PDH's responses take into account the current legislative and policy objectives in SA aimed at addressing the skill question.

This study is informed by Labour market theory and globalization theories. The first part of this study will attempt to capture the historical policies and legislation's on the issue of skills development in SA. Reflecting on the role played by this policies and legislation's to segment the labour market. Secondly, the study will look at debates on globalisation and the era in which organizations are operating. Thirdly, the role played by the SA government in this global era to reverse the past skills development imbalances. Lastly, the study will report on PDH's response to challenges imposed by globalization and how they address the question of skill.

Acronyms

ABET – Adult Basic Education and Training

ANC – African National Congress

CBM – Consultative Business Movement

DEL – Department of Labour and Education

DOE – Department of Education

DOL – Department of Labour

DPE – Department of Public Enterprise

ERS – Educational Renewal Strategy

EE – Employment Equity

FET – Further Education and Training

GEAR – Growth, Employment and Redistribution

HRD – Human Resource Development

HSRC – Human Science Research Council

IMF – International Monetary Fund

ITB – Industrial Training Board

JMT – Japanese Management Technique

MTA – Manpower Training Act

NEDLAC – National, Economic and Labour Council

NEPI – National Education Policy Investigation

NMC – National Manpower Commission

NTB – National Training Board

NTS – National Training Strategy

PDH – Portnet Durban Harbour

RDP – Reconstruction and Development Programme

SACP – South African Communist Party

SAQA – South African Qualification Act

SATAWU – South African Transport Workers Union

SDA – Skill Development Act

SDLA – Skill Development Levies Act

SDS – Skill Development Strategy

SETA – Sectoral Training Authority

SMME – Small, Micro and Medium Enterprise

TNC – Transnational Corporations

WTO – World Trade Organization

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Chapter one

1. Introduction

1.1. Why the Topic

Two key reasons inform the choice of this topic. The first one concerns the pertinence of the skill question in the history of SA's economic life.

As a democratic country and part of the global world, SA's major challenges are:

a] to overcome the legacy of apartheid, (part of which involves the addressing of the skills question) and

b] become technologically/economically competitive in the global market (see national skill development strategy, 2001,p: 4). As a means of meeting these challenges the SA government has introduced a new legislative framework, in the form of the Skill Development Act of 1998.

The second reason for this topic is that Portnet's Durban Harbour (PDH), one of SA's major business organizations, is considered the busiest port in SA and is ranked amongst the top on the Southern Hemisphere and number one in the African continent (PDH handbook, 2001, p: 2). According to Moodley, this is attributed to its cargo handling facilities, high traffic flows, its storage facilities as well as the multiplicity of other services it offers. (Moodley, 1994, p: 40).

In spite of these strengths, the port has some weaknesses, which have had a negative effect on its performance to compete globally. These consist of its severely constrained infrastructure, a surplus of unskilled workers, its low productivity and also its poor loading and off-loading rates as compared with those of Europe and America (see Moodley, 1994, p: 40).

In response to these weaknesses, the port's management introduced a 'Future View' plan in 1992 aimed at rehabilitating and modernizing its facilities as well as at improving workers' skills. It is in the light of these responses that this study seeks to explore the question of skill and whether or not the technology introduced relates to skills required and the resultant implications for the port's competitiveness and performance in the global market.

1.2. Aims and objectives

This study will examine the question of skills in PDH in view of the changing demands imposed by globalization (see Crouch, Finegold and Sako, 1991, p: 1). It will also examine the new socio -political environment in South Africa as well as national responses to the new demands as such.

In examining this question, it will be recognized that the skill question cannot be isolated from technological changes and increased economic competition resulting from globalization. In response to these demands and changes, the SA government has introduced the legislation in the form of the Skills Development Act, which is meant to address the skill question and enhance competitiveness.

Within this context, this study's aim is to determine the response of PDH to global challenges that impact heavily on the skill needs of this organisation and technological changes. It will also examine whether the PDH's responses take into account the current legislative and policy objectives in SA aimed at addressing the skill question. According to Portnet Functionam Manager, PDH already offers skills training to its workers for the effective use of technological equipment in the following areas:

- Adult Basic Education and Training (ABET),

- Computer, soft skills,

- Marine,

- Management supervisor and Functional training which addresses 4 skills: driving, operating lifting equipment, handling cargo operations and also the handling of bulk cargo.

As such this study will first examine whether the skills training offered and the skills learned adequately satisfy the current skills needs of PDH and, secondly whether the skills training offered by PDH to its staff is in line with the government skills development strategy objectives.

1.3. Its relevance and importance

There are two key points that make this study relevant:

- South Africa has a low skills base and companies are not investing sufficiently in skills training for their workers.

- The technology and machines used by South African companies are not sufficiently updated or replaced (Phillip et al, 1999.)

This situation can be attributed to the legacy of apartheid that has left SA and South African companies in dire need of skilled labour. A relatively recent media release report conducted by the Human Science Research Council (HSRC) in October 1999 depicts a shortage of more versatile and experienced managers and professionals/ skilled labour across all sectors of the South African economy. According to the national skill development strategy conference report (2001, p: 8), SA has a workforce of only 3 million who fall into the category of skilled and highly skilled as opposed the statistic of 7 million that fall into the category of semi / unskilled workers.

According to the Growth Economic and Redistribution strategy document (GEAR), the most recent studies into economic growth suggest that it (growth) is strongly affected by human capital and human capital is the skill of a workforce.

The introduction of advanced technology has resulted in the emergence of a whole range of new highly skilled technical occupations – for example, scientists, technicians, engineers, computer programmers, product designers and technologists (HSRC October, 1999). In SA, there has been a marked shortage of skilled personnel to fill these occupational categories (Kraak, 1987, p: 15).

After the 1994 elections SA was re- admitted into 'the society of the world', in the sense that sanctions and closed spaces between SA and other nations no longer existed. According to Beck (1997, p: 35) no country or company can completely shut itself off from others. Various economic, cultural, political, technological and skills training institutions collide with one another.

In the emerging global economy, everything is mobile: capital, factories, even entire industries; and the only resource that's really rooted in a nation – and the ultimate source of all its wealth - is its workforce or the people (Crouch et al, 1999, p: 1). Because of this background, South African companies today put a large emphasis on skill development. More broadly speaking this includes putting a lot of emphasis on developing the particular competencies required to support productivity, international competitiveness, the mobility of workers as well as meeting the defined and articulated needs of each and every company involved.

Countries live by the skill of its people (in Crouch et al, 1999, p: 4). A well-trained workforce is an essential condition of our economic survival. The SA government realized and acknowledged the skill question and its importance by introducing the Skill Development Act that is currently driving the skill revolution in SA companies.

Portnet Durban Harbour (PDH) as the company under investigation (in this study) and also as part of the vision that exists in SA and as a result of global competition, economic challenges and local political changes, has committed itself to a new vision. This vision encompasses the following: upgrading, redeveloping, restructuring, increased participation, the removal of discrimination, purchasing new equipment and restructuring its labour market. Its ultimate goal is to ensure the development of increased skills, growth and business through the port as well as establishing the port as one of the premier's port in Africa (Portnet handbook, 2001, p: 5). It is in the light of the above mentioned facts and the changes in recent years that both the skills question and the challenges posed by advancement need to be explored.

1.4. Key Questions Asked

1. What has been the history of skill at PDH?

2. What new technology has been introduced as a result of global challenges and how does it affect work and the skill level of workers in general?

3. What impact does the skill development Act have on the harbour and what are the views of management, workers and union representatives on the technology and skill training offered?

4. Has PHD attempted to implement the 'FutureView'plan to date? An additional part of this research will establish whether there has been a development and implementation of the 1992 ' Future View' plan as outlined by Moodley? At the back of this study (Appendix 1) is provided, which is PDH questionnaire .

1.5. Research Methodology

To achieve the purpose of this study, PDH was used as a case study in order to understand its responses to challenges imposed by globalization and how it addresses the question of skill. To understand the issue at hand, the research adopts a qualitative research method and is informed by what Liebert and Neale (1983, p: 1) define as the study of people acting out the natural courses of their lives and what meanings people attach to their actions.

As the researcher using the qualitative research method, I will venture into the worlds of other people (meaning PDH workers, management and union) to learn first hand about the impact that globalization has had on PDH, how have they (staff at PDH) have responded, what kinds of technology have been introduced & how has this affected the way work is done. I will also examine how staff is trained and how the question of skill is being addressed?

This study is based on an interpretative evaluation methodology (i.e. programme evaluation guided by the purpose of the researcher, in which those who will provide information will be stakeholders and will not be manipulated. According to Yacoob (1997, p: 19) this demands responsive focusing (asking the right questions for the information that is needed) and, a

constructivist methodology, (this recognizes that meaning is often constructed by people in terms of their experience).

I am aware that I must take into account the fact that people/workers have different analyses/interpretations of the same activity or event. As the researcher studying PDH in the context of its response to globalization and local pressure in which it finds itself, I conducted interviews to achieve the objective of this research. I adopted the research technique of using structured and semi – structured interviews. Interviewing was done in a face – to face encounter where the interviewer asks the questions orally and records the respondent's answers.

As a method of data collection, the interview was allowed to vary from those that were completely structured on the one hand, to those that were semi – structured on the other.

In – depth interviews were preferred because they afforded me entry into the respondent's world of meaning and understanding.

Interviews were conducted in four phases.

- Phase one of the research involved the management (from both Port Authority Division (PAD) and Port Operation Division (POD). This included the following managers: - Human Resource, IT, Training, Education and Development, Marketing, and Project. It also included the Skill Development Facilitator).

- Phase two constituted Portnet Academy personnel. These interviews were spread as follows: 1) Portnet Academy Functional Training Officers (i.e. driver training officer, operator lifting equipment training officer, cargo operation training officer and bulk cargo training officer) and Portnet Academy skills Development Facilitator. The functional training offers training to workers for the effective use of technology or equipment in use.

- Phase three involved the workers. Specifically for this study it only involved workmen who fell into the Functional or Operational training category ;(Cargo Operator/controller, Straddle carrier drivers, Crane drivers, Fork – Lift drivers etc).

Phase four of the research involved the union. PDH has three unions. In this research one union was approached and that union was the South African Transport Workers Union (SATAWU) mainly, because SATAWU represent the majority of workers at the Port. The research is mindful of the fact that the size of the sample has reduced any possibility of highly accurate representation and will this will therefore contribute to the conclusions remaining tentative.

1.6. Ethical Consideration

As indicated by Bailey (1987, p: 406 – 423) in undertaking social research, one should recognize his/her responsibility to the subjects of the study. Therefore my intention was and is to protect the social, physical and psychological wellbeing of all the subjects in my study by respecting their dignity and right to privacy. Ethically it was imperative that I avoided deception and demeaning practices during fieldwork, and that I did not manipulate informants' data to the advantage of my research.

Chapter Two

Theoretical Framework

'Policy makers', have failed to understand that a nation's real technological assets are the capacities of its citizens to solve complex problems of the future. It is their knowledge, skill, their contribution to the world economy and not as hitherto, technology and capital, which determine a country's prosperity (Ulrich Beck, 1997, p: 15).

Chapter two

2. Theoretical Framework

This study is informed by labour market theory (see Webster (1985), Amsden (1989) and Barker (1992) and globalization theories (see Held et al 2000, Beck 1997, Hutton & Giddens 1990).

2.1. Theory of labour market

Central to the labour market theory are notions of labour market segmentation and labour control. Amsden defines (1989, p: 233) labour market segmentation as the historical process whereby political and economic forces encourage the division of the labour market into separate submarkets, or segments, distinguished by different labour market characteristics and behavioral rules. A basic distinction is drawn between the secondary labour market and primary labour market (see Webster, 1985, Amsden, 1989 and Baker, 1992). Jobs in the primary labour market are characterized by high earnings, high upward mobility, job security and, high skill requirements, while those in secondary labour market are characterized by low skills, low wages, little or no job security and little upward mobility (Barker, 1992, 104). According to Amsden (1989) and Webster (1985) the primary sector is further segmented into subordinate and independent primary jobs. Subordinate jobs are routine - like and encourage personality characteristics of dependability. According to Barker (1992) the subordinate primary market consists of semi – skilled operators who are, to a large extent, unionized, and would 'include autoworkers and steelworkers, truckers, harbour and railway workers.'

As far as control is concerned, labour market theories tend to identify distinctions between simple control, technical control and bureaucratic control for different labour markets. Within the secondary labour market, a form of control used over the workers is referred to as simple control. The second form of control, technical control, emerges only when the entire production process has a plant or large segments of it are based on a technology that paces and directs the labour process. Technical control through the pace of the assembly line or conveyor belt is a less authoritarian form of labour control used within the subordinate

primary market. Within the independent primary labour market, the form of control exerted over workers is referred to as 'bureaucratic' control. This form of control is based on rules and procedures, which seek to divide workers across a seemingly endless fragmentation of jobs (Webster, 1985, p: 201).

The labour market theory also looks at the technological developments under capitalism or the divergent development of the industrial structure to explain the emergence of labour market segmentation (Amsden, 1989, p: 243). An important aspect of the labour market analysis is its emphasis on the interaction between developments in technology and the pattern of labour market behavior (Amsden, 1989, p: 246). However, Bowles and Edwards in Persad (1993) argue that the organization of the capitalist labour process in terms of the degree of control and technology is a key to understanding labour market segmentation. How then is technology used to control and segment the labour market / its impact on labour? There is an argument that technology is being introduced to enhance managerial control over the skills and labour of the workers (Child, 1984 in Ntuli, 2000, p: 32). Dawson (1986) in Ntuli, 2000) argues that this arises from the improved process of generating and transmitting performance information and increasing opportunities for decreasing the amount of skill in jobs and indispensability of workers. According to Ntuli (2000, p: 32) this view of control has been upheld by many Marxist writers, most of them paying their allegiance to Harry Braverman's (1974) lucid and elaborate attack on capitalist work reorganization as technology is being introduced in particular, and scientific management in general.

Another labour market theory view for the introduction of technology in the workplace, other than control over workers is to increase profits and productivity. As Martin (1995) asserts, for management to maximize profits and extract maximum surplus value from workers, it finds it necessary to control labour as far as was practically possible. This is also achieved through work organization techniques. Management needed, furthermore, 'to gain a complete monopoly of all knowledge of the labour process' (Ntuli, 2000, p: 43). This confirms Braverman's argument (in Amsden, 1989) that the development of technology, and its impact on work organization under capitalism progressively reduces a workers' control over the work process in terms of their ability to use their knowledge and exercise judgement in the process of work execution. This would lead to de – skilling as management would also need

to 'divest workers of any skill, knowledge. In this way technological developments require a reduction in labour mobility and a degree of flexibility. This will reduce workers to the point where they function like 'hands', managed like a mere machines – set to work on mindless, fragmented, simple, repetitive, monotonous and highly rigid and controlled tasks (Braveman in Ntuli, 2000, p: 44). This scientific management technique entailed the degradation of work, and workers' increasing subordination to, and alienation within and from, the capitalist labour process' (see Martin, 1995, p: 62).

Webster (1993, p: 103) holds that managerial control is never complete, even when automotive technology ... has been introduced. This is so as management needs workers' skills and experience to oversee the machines because they were liable to break down. The workers intelligence, know – how and experience are not something that is easily removed from the shop – floor. While capitalist production tends to rely on the coercion of labour, it however need to incorporate and reward workers skill. Indeed, technological change may require the development of new technical skills and not merely the incorporation or enhancement of older ones' (Webster, 1991 in Ntuli, 2000, p: 54). In this process, it is interesting to note that employers and workers need each other. For profit to be maximized employers must invest in both technology and workers skills to enhance productivity and competitiveness.

Hodson and Parker (1988 in Ntuli, 2000, p: 56) come up with another view about the impact of technology on work and on workers. They see technology as the major vehicle, which brings higher living standards to those who participate in economic life. They have overlooked the negative impact of technology on both the employed and the unemployed.

According to Novel (in Hodson & Parker, 1988, p: 2), between the 1970's and 1980's, technological growth had been seen more as cause than the solution to the problem of unemployment. The reason for this is that, more often than not, technology introduction tends to lead to unemployment, as its introduction is a consequence of management's desire to maintain control over the workforce (see Shaiken in Hodson & Parker, 1988, p: 3). Hodson and Parker (1988, p: 10 in Ntuli, 2000) also observe that' advanced technologies displace

labour in general, driving up the unemployment rate and placing additional pressure on workers at all levels.

It is further argued that technology tends to increase the alienation of labour under capitalist society (in Valls and Yarrow, 1988, p: 127). For Blauner in (Ntuli, 2000, p: 58), the transition from craft to mass production did result in an increasingly detailed division of labour which, together with other factors, raised workers alienation to unprecedented heights. With later development of fully automated, continuous process technology, this trend is reversed. Therefore, what modern industry initially took from the worker − the opportunity for meaningful work − is eventually restored (Vallas and Yarrow, 1988 in Ntuli, 2000, p: 58). We have seen that the introduction of technology has both negative and positive effects. In South Africa technology innovation benefited workers in the primary labour market sector and affected workers in the secondary labour market sector as can be seen in the next section. The next section will look at the impact of past government policies and legislations on labour relations; and in particular the effect on the impact of technology on black workers skills.

Chapter 3

3. Historical Review on skills question in SA: the impact of policies and legislation on the labour market.

Having outlined some of the key issues in the labour market theory, this section will focus on the historical evolution of the labour market in South Africa, the role and impact of past government policies and legislation's on it, and in particular on technological change and the skills question in the workplace.

In SA the state played a crucial role in shaping the labour market. It developed policies and laws to afford South African whites, (particularly the Afrikaners), an exclusive right to participate as employees, to achieve elevated wage levels and occupations as well as a high level of education for white workers in the labour market. In SA the racial segregation, which disfavoured black labour and job reservation for whites dates back to the first settlers at the Cape during 1652 – 1658 (Lombard, 1981, p: 7). In 1658 a start was made to channel foreign slaves to the Cape. Members of the black tribes only had contact with the white colonists towards the end of the 18th century and particularly after the abolition of the slave trade in 1807.

The training and skill development of the African population started in the 19th century when the British governor, Sir George Grey, first introduced technical and vocational education in the Cape colony in the early 1850s (Millar, 1991. p: 170). The nature of this contact (i.e. that of the black tribes and the white colonialists) resulted in the first measures being taken to control the employment, skills training, education and mobility of black people, (i.e. as a potential labour force). Ordinance no 49 of 1828 can be considered as the turning point of the policy of separation between whites and blacks. This ordinance was designed for blacks to become a labour force. The development of the labour market in SA was characterized by racial segmentation and job reservation that ensured that skilled jobs were reserved for whites only (Lombard, 1981, p: 7).

The early 1920's stage of industrial development did much to shape the course of the labour market. White workers, through their capacity to organize themselves into craft unions and disrupt production, were able to construct their jobs as skilled (Webster & Leger, 1992, p: 55).

Research into the history of skills formation in SA demonstrates how craft union workers adopted a highly defensive and conservative approach to skills and earnings against job dilution, job fragmentation and job placement by poorly paid unskilled black workers. Craft workers became a labour aristocracy protected by job reservation and union management agreements (Johnstone, 1976, Katz, 1976 and Webster, 1998, p: 3). This did not include black workers who were left out and classed as unskilled and semi-skilled. This was deliberately done by the state via management policies and craft union workers to create a system of cheap labour that would benefit white workers.

This left the independent primary market predominantly white while the subordinate primary market was composed of whites, 'so-called Coloureds' and Indians (all of whom were classed as semi- skilled workers). The result of this was that the secondary market eventually consisted of predominantly low – paid (poorly paid)* African migrant workers (Kraak, 1996 in Maharaj, 1999, p: 59).

When the Apprenticeship Act of 1944 (Act 37 of 1944) was introduced, it marked a new period in the history of labour channeling in SA. The long title of the Act states as its objective the following: - the regulation of skills training, the employment of apprentices and minors in certain trades and also the provision of matters incidental thereto (Wiehahn, 1999, p: 181). Briefly, the three objects of the Act were to:

- Ensure that apprentices receive proper practical and theoretical training to regulate the employment of apprentices and minors in designated trades, and

- To control the intake of apprentices and minors in designated trades.

This Act prevented workers, especially Africans from working in jobs in which they were competent and confined them to jobs that required less skill. Apart from segregating Africans, the Act gave protection to white workers and perpetuated the industrial colour bar.

According to Lombard (1981, p: 10) this, from a human resource perspective, constituted the gravest waste of human potential. Under the registration for employment Act of 1945, all work – seekers had to register with the Department of Labour. No vocational guidance was offered and there were no placement efforts available for Africans.

When a white person registered, professional psychological staff tested his abilities, interests and personality (Ntuli, 2000, p: 70). The unavailability of professional help for Africans meant that they had to take any jobs that were available, irrespective of whether those jobs suited the interest and personality of the particular work – seeker. The purpose here was to segregate the labour market. Poor guidance left Africans unaware of technological jobs available in the labour market. The reality is that even if they were aware that their educational qualifications had prepared them to occupy certain job categories, they would not be given those particular jobs. Hence, even if they were employed, they were not going to be more effective or productive, not because they could not venture with machinery, but because they (were told that they) were neither skilled nor qualified (ibid, 2000, p: 70).

In 1951 the Training of Artisans Act of 1951 (Act 38 of 1951) was adopted with the purpose of providing training for persons other than minors, who have not had the opportunity to enter into an apprenticeship in order to enable them to obtain artisan status (Wiehahn Commission, 1999, p: 187). Under the Artisan Training Act training in theoretical and practical skills was given to whites at government institutions followed by three years on – the – job training with an employer. Africans were not permitted to do this kind of training, whereas Coloureds and Indians were permitted. Both Indians and Coloureds could only write tests after they had been trained, but were also not given chances similar to white workers' (Ntuli, 2000, p: 71). This Act owes its origin to the fact that at the end of World War 2 there was an acute shortage of skilled artisans, aggravated by the rapid industrial expansion in SA. The 1948 De Villiers Commission on 'technical and vocational education' identified the same problem that indeed there was a rapidly increasing demand for trained 'native' labour in practically all categories and grades of work (Mji, 1998, p: 35). Africans were employed only to see, but not touch, some machinery. The implication here is that Africans could not experience operating technology. In order to augment the supply of skilled personnel and machine operators, the Soldiers and War Workers Employment Act and the Housing (Emergence Powers) Act were

introduced during this period respectively. The Soldiers and War Workers Employment Act made provision for ex – white army personnel to be tested in any particular trade to enable them to obtain employment as artisans, while the Housing (Emergence Powers) Act, was designed mainly to provide for the construction of dwellings and the putting into effect of housing schemes owing to the existing shortages. Every Act and policy that was put in place was aimed at ensuring the preservation of white domination.

The 1951 Eiselen Commission and Bantu Education Act of 1953, made it clear that blacks were to be prepared for a very particular place in society and that was to become unskilled industrial worker (Mji, 1998, p: 36). This was aimed to protect the employment and skills interest of white workers and also to avoid thinking about blacks in terms other than labour commodities that had no rights and skills but simply as exchangeable, exploitable labour units. (Millar, 1991, p:170). Africans were trained by local authorities as building workers working without the provision of machinery. Even if the machinery was going to be provided to African workers, it was going to be useless since they were excluded from training that would enhance competence to operate the machine. Under this Act Africans were only allowed to be seen and work in white areas doing unskilled job only if they were employed there. According to Ntuli (2000) if they were not employed they had to produce passes. This in essence meant that Africans although they were working in white areas, they had no natural right to work anywhere they want. A lot of technological activities were taking place in white areas, as a number of machinery work was performed there. This meant that a large pool of black workers were discriminated against, thus the continued labour market segregation in SA today.

The Industrial Conciliation Act (No.28) of 1956 continued to make provisions for the apartheid machinery whereby jobs and technological skills training was reserved for white workers. It formalized and legitimized the process of limiting blacks to lower occupational and educational levels (Langa, 1996, p: 156). It also provided for the registration of trade unions and employers' organizations and for the setting up of Industrial Councils for specific industries (Ntuli, 2000, p: 73). According to Scheepers (1974 in Ntuli) the Councils promoted industrial peace and settled disputes by collective agreements or arbitration. However, Africans were not allowed to participate in collective agreements as their unions were not

registered and not allowed to join white registered unions. This means that African workers needs were not heard and that only white workers rights were attended to.

The cheap labour policies of the 1950s began to outlive their usefulness in the boom years of the late 1960s. Neither the National Party government nor organized white labour ever anticipated this when they adopted discriminatory labour policies to maintain the status quo in the racial division of labour (Crankshaw, 1987, p: 38). The period of economic growth, which began in 1963 and lasted until 1975, had a profound impact on the dominant production processes and the labour market. Although employment in the formal economy grew at a rapid rate of about 2,9 per cent per annum between 1960 – 1970, this expansion of the workforce did not have a significant impact on the overall African: White employment ratio (Cranhshaw, 1987, p: 38).

The position regarding job reservation during this period was that there was an increase in the accentuation of statutory job reservation for whites. As industry grew, it began to experience the negative effects of the segmented labour market, as the white population could not satisfy growing demands for the skilled labour. The boom period between 1961 and 1970 was said to be one of the greatest waves of economic expansion that SA has experienced (Houghton, 1976, p: 212). During this period (1961 – 1970) there was an increase in the proportionate demand for professional, semi – professional, technical and non – manual jobs in the non – primary sectors of the economy. This led to the process of skills upgrading of black workers, which occurred largely as a result of a change in the racial composition of certain semi – skilled jobs and as a result of whites being promoted into highly skilled jobs (Kraak, 1987, p: 17).

According to Kraak this resulted in a new layer of racially heterogeneous middle stratum of the occupational hierarchy, consisting of Coloureds, Indians and Africans workers. At the same time, this restructuring of the employment pattern disadvantaged other members of the African working class, particularly those residing in the peripheral or rural areas, whose services as a cheap source of labour was no longer in high demand. This resulted in a high degree of differentiation within the African working class (see Webster, 1985). According to Hindson (1991) cited in Maharaj (2000), the urban African working class benefited most

from the restructuring of employment during this period, as they began to obtain the skills to occupy jobs in the subordinate primary sector. Whereas the large numbers of Africans located in the rural collapsed economy faced permanent unemployment. This led to the emergence of a 'core' skilled, and 'peripheral' unskilled, African working class (Kraak, 1996).

In 1966 a provision was made for the retrenched workers under the Unemployment Insurance Act, benefits were provided in cases of retrenchment due to discharge from work, illness or confinement. According to Scheepers (1974) in Ntuli (2000) the benefits were related to the earnings – group of the worker. There was no racial segregation, except that African claims were handled through the Bantu Labour Bureau machinery; and that Africans could nor serve on the committees set- up in terms of the Act to consider appeals. The reason for separating the channels for such insurance appeals is because the legal system of the country did not allow that both whites and Africans' claims handled in one department (Ntuli, 2000, p: 74). This meant that Africans were not allowed to use white facilities. The use of technology as a white man job and facility to utilize was inculcated to Africans.

Since the early 1970s, when sustained irregular cyclical patterns emerged, the apartheid character of the labour market could no longer be pursued as a viable strategy of stable growth for reasons already explained above (i.e. economic growth). In the 1970s there was considerable attention given to manpower matters and legislation. Three government commissions were set up to start the reform process, the De Kock Commission on monetary policy, the Wiehahn Commission into labour relations and the Ricket Commission on influx control. The Wiehahn Commission argued that the South African industrial training system had serious shortcomings that thwarted efforts to provide an adequate quality of skilled labour. Both the Wiehahn and Rikert Commissions recommended that labour and training be rationalized and this led to the enactment of the Manpower Training Act (MTA) of 1981 and the establishment of the National Training Board (Standing et al, p: 451 in Mji, 1998, p: 36).

Up until this period the past training system was formed around a number of apprenticeship training courses that mainly equipped young white men to work in industry (Kraak, 1997, p: 74). With rapid changes in technology in the 1980s, new methods of work organization and the shift towards the global market, these apprenticeship courses became an insufficient basis

for competition. During this period, policy reforms were introduced in SA, which represented a shift away from the 'Verwoerdian' race – based thinking of the 1960s to a framework based more on free market principles (Kraak, 1997, p: 74). The key change during the 1980s was the transfer of control of apprenticeship training from the Department of Manpower to accredited Industrial Training Boards (ITB). This allowed the boards freedom to meet the training needs of industry in the way they saw fit (an approach termed 'Voluntarism') without any state intervention. These reforms envisioned a government with minimal involvement and a more market based / voluntary approach being adopted, which left it to industry to deliver training to meet the identified needs. This resulted in a high degree of differentiation between black and white workers. There was a tendency to train black not to be competent workers.

Although the Manpower Training Act (MTA) was the first SA's non – racial law on training, the apartheid legacy still had an influence on it. When black learners entered the apprenticeship training system after reforms in 1981, there was a tendency for them to get theory and not practice – with the result that they were unable to build real competence. In 1981 the Human Science Research Council (HRSC) produced what came to be known as the De Lange Report (Vally, 1997, p: 40). The report called the provision of education in the Republic of SA stressed the irrelevance of the academic curricula especially for the African population. The kind of education taught to black people was mainly theoretical and this led to skill shortage and negative effects on the economic growth. It suggested that black pupils should be provided with practical training (Mji, 1998, p: 36).

In the same year (1981) the Guidance and Placement Act (no.62) came into place and provided for the establishment of skills and training guidance as well as employment and registration of private employment offices. The registry offices were also incorporated into the Act, as is the registration of employment. As a result of the Act many of the trainees were placed in employment. A tracer study conducted by NMC (1998) found that in 1983 nearly 60% of all unemployed persons who were skilled and trained were subsequently placed in a job. By 1984 placement had dropped to 43% and further to 25% between 1985 and 1986 (Mji, 1998, p: 37).

The following years saw very little emphasis placed on placement and training. Training was now supply - driven, that is, it was determined by the courses offered by the training providers, rather than driven by the demands of labour market. The majority of black people were discriminated from certain job categories because of the choice of courses they were forced to chose; they obtained course certificates that were not technologically in demand. The range and the duration of the courses raised question about the nature of the analysis that informed the training of the unemployed policy and what was identified as the cause of unemployment. Was the training system intended just to raise the technical efficiency of the workforce (Prais, 1994, p: 2 in Mji, 1998, p; 38)? This market led model gave capital substantial powers to decide on the extent and nature of vocational training, the organization of work, new technology and investment in research and skill development. Linda Chisholm (1984) argues that while not denying the existence of skill shortages the policies exhibited a distinct strategy on the part of the state and sectors of capital to build a black middle class committed to free enterprise. Examining the South African economic and political scenario, she found that there are ideological dimensions to skills shortage (Crankshaw, 1997, p: 37). The purpose of increasing skills appeared to intensify ideological controls over workers and wed them more firmly to capitalist values so as to improve South Africa's manpower needs (Vally, 1997, p: 40).

However, in 1991, with democracy in the air, there was a dramatic change in official policy direction. The National Training Board (NTB) had to change and the new board took over and agreed that the National Training Strategy (NTS) should be replaced by a new one (Vhutsila, 2001, p: 2). The NTS, a project of the Department of Manpower, reflected the interests of both the employers and the state with regard to industrial training in SA (Mji, 1998, p: 40). It was premised on the belief that employers know best about how education and training can meet the needs of industry. The NTS failed to include workers and trade unions, and also to recognize that low skills training was a structurally and institutionally embedded phenomenon of South African capitalism which the market mechanism alone was incapable of resolving.

In mid - 1993 a more representative task team was set up under the NTB, which for the first time brought together representatives of business, government representatives and trade unions, in particular black unions. These were in the days prior to the formation of NEDLAC. In April 1994 the task team published its NTS initiative. Although published as a discussion document, the first black Minister of Labour adopted the NTS as the framework for subsequent policy work and institutional developments. These have since emerged to shape the new training and skill development landscape (Mji, 1998, p: 41).

3.1. Labour Market theory as applied in South Africa Industries

The legislation's looked at in the previous section had negative effects in the workplace workplace. At industrial level, labour segmentation was facilitated by a wide variety of legislative and other barriers to access particular job categories, in particular technological jobs, which were reserved for whites. Technological job, skills based and supervisory tasks became the monopoly of white workers in primary labour market sector, while black workers were restricted to unskilled, low paid job categories in the secondary labour market sector (see Langa, 1996 & Webster, 1985). Black workers were forbidden from performing certain jobs and this mechanism trapped black workers in the secondary labour market employment. African workers doing low paid and insecure work dominated the secondary labour market sector. The subordinate primary labour market was comprised of an intermediate stratum of white, coloured and Indian semi – skilled workers (Webster, 1985, p: 378). Webster (1985) calls this scenario within SA workplaces the racial segmented labour market. For an example, in the mining industry to a greater or lesser extent, black workers did all production work involving unskilled work like the handling of raw materials and products. Likewise, in the gold mines, broken rock and ore were cleared from the 'stopes' and loaded into hoppers or 'cocopans' by manual shoveling done by unskilled black workers (Crankshaw, 1997, p: 51). In the building industry unskilled black workers performed most excavation and material handling tasks manually. Unskilled work typically included the tasks of loading and transporting building materials on site, digging foundation trenches and tamping to settle concrete or to consolidate rubble. The excavation of foundations was carried out by teams of unskilled manual labourers who broke the ground with pick – axes and shoveled the loose soil into wheelbarrows, which they then trundled up ramps to tip the contents into waiting trucks (Crankshaw, 1997, p: 51). White workers did none of the mentioned jobs.

This racially segmented labour market was also a reflection of the skills situation in SA workplaces. Whereby black and white workers formed distinct and socially unequal parts of the same variable capital (Langa, 1987). Division and inequality in the workplace were an extension as well as a result of divisions in the wider society. There were restrictions facing Africans in the acquisition of technological skills training. This enhanced what Burawoy (1985) describes as 'racial despotism', whereby work was characterized by coercion rather than consent, and by domination of one racial group by another. At the core of this system of technological and total skills training control was the compound where large numbers of black unskilled workers were housed separately from the rest of white workers. It has been argued that the compound was one of the most effective forms of labour control ever invented (see Rex (1973) & Webster, 1985). Blacks workers in the compound were only allowed or skilled to be black indunas i.e. management - appointed supervisors, while actual technological know – how and power were vested in the hands of white compound workers. According to Nzimande (1991, p: 166-199) skilled work was exercised by white workers who were assisted by semi - skilled black 'boss – boys'workers.

Black workers not only suffered discrimination or segregation in the workplace; this was predicated and reinforced by discriminatory laws outside the workplace (Langa, 1996, p; 156). This relates to the manner in which a dominant group (i.e. whites) manipulated such factors as access to general education and quality education, secondary and tertiary training to ensure the subjugation of another group (blacks and women) (Mhone, 2000, p: 8). This was deliberately done to manipulate factors that specifically disadvantaged blacks with regard to their human resource development. This ensured that when blacks entered the labour market as prospective workers, they did so as relatively uneducated, unskilled and untrained, and very restricted in their choice of jobs (especially the skilled ones) or their mobility in search of jobs such that they were generally 'fit' for the type of jobs, occupations and industries that the dominant group wished them to undertake (Mhone, 2000, p: 8). It is generally agreed that the historical limited access of Africans to educational institutions and the poor quality of Bantu education have been major factors determining their inferior position in the labour market (Kraak, 1991 in Langa, 1996, p: 156). This is clearly depicted by the 1994 October Household survey conducted by Mhone (2000, p: 9) according to which blacks were discriminated and disadvantaged in terms of skill acquisition prior to entering the labour market.

According to Mhone (2000, p: 8) 72% of blacks were found to have achieved standard 6 or lower while 72% of whites had achieved standard 6 or higher in terms of education. It is worth to note that about 60% of the unemployed blacks had standard 6 or lower. Furthermore, the ratio of white males with relevant degrees to the other groups with degrees was about 1,7 with respect to white women, 3,4 with respect to black males and 5,0 with respect to black women (Mhone, 2000, p: 8).

Evidence of apartheid laws and policies indicate that in South African companies there is still unequal treatment of workers in terms of access to skilled and unskilled jobs as well as remuneration (Mhone, 2000, p: 7). Essentially, within each occupation category, pyramidal job hierarchies can be identified in which blacks and women are disproportionately concentrated in the lower skill levels and white males disproportionately concentrated in the higher skill job. Within these job hierarchies are glass ceiling for the majority of blacks and women such that only a small minority are able to be promoted, hence the continued under - representation of blacks and women in the higher skill jobs (Mhone, 2000, p: 7). White workers who were employed in semi - skilled and skilled levels were re – trained and promoted into skilled trades, supervisory position and, at a stretch into certain technical jobs (Crankshaw, 1997, p: 98). Simultaneously white workers were promoted ahead of African workers into skilled and supervisory jobs; they even received bonuses and were assured improved conditions of service. Instead of blacks being promoted into skilled trades, blacks were only advanced into semi - skilled jobs, which entailed the performance of fragmented aspects of the unskilled trades. Although black workers were performing work previously done by whites, they were doing that at much lower wages or income (Mhone, 2000, p: 7).

3.2. Conclusion

Dostal's (in Bennell, 1990, p: 14) assert that the deliberate policy - driven education and training system is a contributor to the economic woes of the country today. The current situation in SA as described in this paper is a product of a system that clearly did not deliver for the majority in the labour market. The past Acts and policies managed to weigh down the country national education structures and training that was provided by ideological division (Baker, 1999, p: 108). There was a gross distortion of technological training and skill development, resources and funding in favour of whites. According to the Presidential

Commission Report (1996, p: 42), the education and training system was broadly designed to serve these ends i.e.sound general education for whites laid the basis for tertiary learning, while the black majority were educated to do little more than the level of – in Verwoerd's notorious description – 'hewers of wood and drawers of waters'.

To the vast majority of the African population the heritage of this system is mass illiteracy combined with an uneven array of unrecognized skills built up from experience, ranging from trade equipment for those who acted as artisans aides to the more limited and tacit skills of those who performed routine and repetitive tasks over decades. Those described as 'semi - skilled, fall within this range. The magnitude of the apartheid labour segmented policies left scars that are apparent in the technological know – how and skill profile of the workforce today. The Presidential Commission (1996, p: 42) report showed that, for example, 45% of the adult Africans cannot read and write, while 35% of the economically active population in 1991 was reported as functionally illiterate.

The education and training system impoverished by a history of fragmentation has failed to supply the skills needed for the growth of the economy. That left black workers under – utilized, meaning they were employed in jobs that were below their productive level. This means that black workers were employed in occupations far below their educational or intellectual capacity. At work an 'us' and 'them' syndrome was reinforced in terms of education level and training (Human, 1991, p: 14).

Africans skills and training was looked down upon as inappropriate to the business world, and the prevailing believes that blacks couldn't perform certain jobs or tasks. This idea was based on the deficit theory, which in its crudest manifestation argues that various groups are genetically unable to master certain tasks, acquire certain skills or to hold senior positions (Moerdyk, 1990, p: 18). As a consequence of the apartheid legacy a large proportion of the black labour force has remained marginalized. So, the intended legacy of segmented labour force still exists.

The impact of the legacy of apartheid on the economy may have been such that it has distorted not only resource allocation in the labour market but also the way in which capital and labour are combined, the relative costs of inputs, the structure of production and consumption and the levels of savings and investments in the economy (Mphelo et al, 1990, p: 21). There is no doubt that the barriers to educational advancement of blacks, combined with other repressive racial policies are the major causes of the technological know – how and severe income inequalities between black and whites (Barker, 1992, P; 106).

Chapter Four

Welcome to the age of knowledge

'knowledge has become the pre – eminent economic resource – more important
than raw material; more important, often, than money. Considered as an
economic output, information and knowledge are more important than
automobiles, oil, steel or any of the products of Industrial Age'

Intellectual Capital-

The New Wealth of Organisations.

Thomas A. Stewart

Chapter Four

4. Global Discourse

The legacy of Aparthied policies and legislation's failure to develop workers' skills will clearly live to haunt post Apartheid SA. As Joffe et al (1993, p: 15) point out, even though there has been a substantial improvement in the proportion of the labour, one quarter of the African working population and one – eighth of the Coloured workforce are without formal education. It is estimated that 45 percent of blacks cannot read or write (Fallon et al 1993 in Joffe 1993, p: 25). This compares very unfavorable with the NIC's, with many of the non-NIC and even with other global major players. As a result of unfavorable comparison it becomes clear to SA that in order to become globally competitive she needs to change. Social, political and economic activities are becoming stretched across the globe, such that events, decisions and activities in one part of the world come to have immediate significance for individuals and communities in quite distant parts of the global system (Mcgrew, 1992, p: 68).

In acknowledging our past history of isolation, unfavorable comparison with the rest of the world, labour segregation and stage of development, how then do we compete and fit in globalization and its consequences as stimulated in part by a concern to understand the nature of the socio - economic changes which appear to be enveloping all advanced capitalist societies (Mcgrew, 1992, p: 65). Along with globalization is the view that the fate of individual national communities are increasingly bound together. This awareness of global interconnectedness is reinforced by the electronic media which bring to their audiences immediate attention to distant events, thus creating a sense of globally "shared" community (Mcgrew, 1992). How then should we understand the term globalization, which is used to describe these global trends?

Beck defines globalization as 'a world without state – or, to be more precise, a world society without a world and state without world government' (Beck, 1997, p: 13). By this he refers to the multiplicity of linkages and interconnections that transcend the nation – states (and by implication the individual societies) which make up the modern world system. It defines a process through which events, decisions and activities in one part of the world have significant consequences for individuals and communities in quite distant parts of the globe

(Mcgrew, 1992,p: 65). Erwin and Harry (2000, p: 243) define globalization as a continuous process whereby functions and influences cross boundaries from one state to another. It involves the organization of various processes such as communication and business on a worldwide level, the existence of and awareness of the interrelations among people on the globe and recognition of the globe as finite and limited (see Yearley, 1996, p: 9). The concept reflects "peoples experiences of the properties of an accelerating phase of the level of social integration comprising the bonds between nation states" (Kilminster, 1997, p: 272). It represents the increasing trend in which people view the world as a single space or what Robertson (1991, p: 8) refers to as 'the compression of the world – and the rising consciousness that humanity inhabits one globe'. Theorists of globalization view the world as moving into or as already having entered a new phase.

According to Hirst and Thopmson (1996, p: 1), "... we live in an era in which the greater part of social life is determined by global processes, in which national cultures, national economies and national borders are dissolving." Born of the process of globalization are other related terms that are becoming commonplace in the social science literature such as global society, global economy, global culture, global skills and global citizenship, among others. In view of the above, I see globalization as an intimate, uncontrollable powerful source of change and control that affects national economies, political, social and cultural interconnectedness between organizations, individuals and governments thus deepening their international connections. Having defined globalization this study will follow the Rosenau's explanation of globalization.

Rosenau (1980, 1989, 1990), in his attempt to make sense of the intensification of global interconnectedness, attaches enormous significance to technology. According to him it is technology that has so greatly diminished geographic and social distances through the jet – powered airliner, the computer and many other innovations that now move people, ideas and goods more rapidly and surely across space and time than ever before (Rosenau, 1990, p: 17). Rosenau argues that technology has profoundly altered the scale at which human affairs take place. New global communication and information technologies have subverted the control of states over flows of information (Comaroff, 1996, p: 168), enabled the formation of a global economy (Castells, 1996, p: 92) and facilitated the breaking down of certain 'cultural'

boundaries (Lee, 1994; Pieterse, 1997, p: 5 in Sayed, 1998, p: 16). It is technology that has fostered the interdependence of local, national and international communities that is far greater than any previous experiences (Rosenau, 1990, p: 17). Acknowledging that amongst other key factors describing globalization, Rosenau (1990) is adamant that it is technology that revolutionizes the way the world is operating. I therefore argue that technology and globalization are changing the world and the work place in particular. The next section of this research will discuss the South African organizations in the era of technological changes that comes as a result of globalisation.

4.1. South African Organization in the era of globalization

The past two decades have witnessed massive changes in the nature of the global economy. Apart from economic changes, SA organizations are experiencing major changes in technology and labor process internationally. The advancement of technological know – how undermines political and natural boundaries and has led to the formation of global market economy ruled by global forces. The process of globalisation has dramatically altered the way people perceive and produce things. The world of work has undergone rapid changes over the past decades as a result of globalisation. SA organizations are moving away from mass production to flexible production. Descriptive terms such as post – Fordism, flexible specialization, the new competition and systemofacture have been coined to describe the changes (Harrison, 1996, p: 3). It is impossible to understand the current changes and the context under which organizations operate without a brief look at mass production notion.

According to Kaplinsky (1994: 11), mass production developed and matured over the past 150 years. The primary purpose of production was to lower production costs. Since wage costs were a major element of production costs, labor costs had to be minimized. For instance, in Henry Ford's pioneering factory, the time taken to assembly a car fell from 750 minutes to 93 minutes between 1913-1914 (Kaplinsky, 1994: 11). Throughout the post war period most times adopted the system of mass production effectively. Jenkins (1992) characterized fordism by assemble line production involving a high degree of division of labour, which simplifies the task of workers to routine operations requiring minimal skill or training. Kraak (1994) describe fordism as an economic system that is identified with mass consumer markets, mass production techniques, mechanized assembly lines, authoritarian

management systems and low – skill, fragmented job tasks for workers. Under this system of production the pace of work is done by the machine, through the speed of the Line, rather than under the control of individual workers. This led to proliferation of industries producing world cars, such as model T – Ford. The original inventor of this idea once said, 'they can have many colours they like so long as it is black' (Kaplinsky). Common elements to the 'Fordist system' were: the strong oligopolist structure of industry which was encouraged by a large scale markets and rising barriers to entry; a system of collective bargaining; a view of labour as a cost to be minimized, rather than a resource to be maximized; the production line which produce large batches of standardized products; the separation of planning through management and implementation by workers; and, inter firm relationships which were based on profit – maximizing strategies and a focus on individual 'units' of production (Harrison, 1996, p: 4).

However, fordist production was not without its problem. The effectiveness of the system of mass production began to decline because it proved to be difficult to maintain consistency. Jenkins (1992) and Kaplinsky (1994) offered explanations for the decline of mass production in the 1960's as follows:

- Volatile markets and inflexible production
- Customer tastes were becoming increasingly differentiated
- Price competition not meeting the demands of the market
- It dehumanizes work and contributed to workers alienation
- Led to workers resistance and reduced productivity
- It required long rung of standardized products

Following the failures of mass production in the era in which the nature of international competition is changing the nature of work, new and flexible production method was introduced in the 1970's. Advanced technology made it possible to produce a number of different models and variants on the same assembly line. This was facilitated through the use of micro – electronic system in the production process. The new trend is toward flexible production, whereby production is based on small unit with subcontracting arrangements. Literature on flexible production embrace what has become known as ' just in time' system.

However, there is a growing body of thought, which referred to these new forms of production system in variety of ways such as flexible specialization, flexible production and post – fordism. These concepts have been used interchangeable. Kraak (1994) in Maharaj (2000), argues that post – fordism is associated with niche markets, computer based technologies, multi – skilling and more participatory form of work organization such as quality circles and team work. Phillips (1998) argues that post fordism, is similar to lean production in terms of the production process, but differs in that work is multi – tasked instead of multi – skilled and that workers are expected to complete a multiple numbers of low – skill tasks, this is cited in Maharaj (2000).

According to Kaplinsky (1994: 23) flexible production means a larger number of product types reflected by shortening of the life cycle of the product portfolio. It is basically a system of production, which makes relative use of embodied capital and intensive use of human beings. The goal to strive toward in flexible production is to move towards a single product flow. Writers such as Fanaroff, Ewert, Kraak and Baumann (in Maharaj (2000), argues that South Africa has entered into a system of post - fordism (i.e lean production or augmented Taylorism). According to this writters post – fordism is the intensification of current forms of exploitation using computer technology to control workers. They further argue that this new way is likely to entrench existing labour market divisions even further, without an increase in multi – skilling and other forms of skill formation associated with this new system.

In contrary to this view, Kaplinsky argues that post - fordism will bring major changes and opportunities. He identified the following eight key changes in production, which are involved in the transition to flexible. Key changes include:
-   The handling of inventories
-   The approach to quality
-   The organization of work
-   The reaping of systematic gains and the introduction of work – teams
-   Changes in inter – firms linkages and;
-   Instituting the process of continuous change (see Kaplinsky, 1994)

According to him this new system will put emphasis on education and investment in human development. It is a system based on the view that knowledge not only lies in experts, but also in the informed labor. This new system together with globalization has changed the

nature of work organizations. As a result of the two, production has become global in nature. Singh (1999: 3 – 4) characterized the present phase of globalization by five major development:

- rapid growth in internationals financial transactions
- fast growth in trade among TNC
- the emergence of global markets
- surge in FDI largely contributed by TNC, and
- The diffusion of technologies and ideas through rapid expansion of globalized transportation and communication system.

4.2. Globalisation and implication for SA organizations

It is argued that post apartheid South Africa's global reintegration must be based on the development of a competitive manufacturing and service sector. This depends on how well they are able to manage, access new markets, implement relevant technologies and use those technologies in the production process. The impact of technology and globalization resulted in workplace restructuring and new forms of work organization. This led SA organizations to:

- Monitor suppliers accurately

- Increase production

- Increase communication between manufacturer and supplier and between workers and management.

- Lower handling and storage costs

- Ability to switch rapidly from manufacturing one product to another, depending on demand

- Improved accuracy of information and quality of work (Isaacs, 1997)

Due to the impact of globalisation South Africa companies (e.g. PDH) are undergoing change. Organizations are moving away from authoritarian to a more democratic management styles. Organization are living in the midst of a historic global revolution – from physical to knowledge work, from mechanical to process technological manufacturing to service economies, from cultural sameness to greater diversity (Joffe et al, 1995), The global work organizational changes include new manufacturing structures, organizational

designs, factory layouts, skills profiles of workers etc, and have been so profound that many theorists have referred to them as a complete break from previous fordist work organization practices (Barnes et al, 2001). Other critical global developments such as the emergence of information technology revolution have also strongly influenced the nature of work organization in organizations. The environment in which organizations operate is increasingly turbulent in this global era, national, and regional commercial competition is increasing at an alarming rate. Companies' alliances and competition are increasing, mergers, consortia, privatization and acquisitions are all common in organizations today. Production and communication technology is changing at an exponential rate. Further dislocation of people through downsizing and restructuring is rampant (Bell, 1995).

Education and training has become imperative in SA's organizations, as it provides the basis form which learning, reading and writing from an integral part of the circulation of information. Gone are old fashioned firms where managers jealously guard information about conditions in the organization, thinking the knowledge they possess is the key to their power (Womack et al 1999). Organizations operate as open systems where information sharing is encouraged. Information need to be readily understood by workers and made available to all. SA's organization's have a system in place where coming up with pro – active and be active solutions to problems becomes the expected norm, and where suggestions are translated into continuous improvements in both productivity and quality (Womack et al, 1999). The need for greater flexibility within production is highlighted, leading to devolution of responsibility to the shopfloor and more co – operation management.

We are seeing a move from authoritarian management approach to democratic management styles. As a result of demands imposed by globalization organizations today, poor quality standards are not tolerated; defective components would rapidly bring the whole organization a to stand still. In the heart of SA organizations there is a need for a dynamic teamwork, which require multi – skilled workers and responsibility sharing for productivity and quality (Humphrey et al, 1998, p: 62). For workers to be multi – skilled, basic literacy levels become imperative, as their provide the basis from which education and training is broadened and reading and writing form an integral part of the circulation of information. In learning a wider variety of skills, each worker must have a greater understanding of the system as a whole

with a greater appreciation of his/her role within that system. Technological driven working conditions encourage workers to take control of the tasks they perform, and share responsibility for productivity and quality (Humphries et al, 1998, p: 62. Job rotation, made possible through multi – skilling is also encouraged which should help to enhance job – satisfaction by keeping workers interested and stimulated by what they are doing. Global trends expect workers to acquire problem solving ability, creative and pro – active thinking; continuous improvement and the utilization of labour as an asset not as cost. Writers like (Vally (1997), Enloe (1989), Pollert ('1988) in Maharaj , 2 000) believe that the new emphasis on multi – skilled labour, as characteristic of post - Fordism, does not necessarily imply any decrease in managerial control over workers. According to them there is always the possibility that skilled workers can be subordinated to management control strategies as well. This is based on Tomaney (1990) and Pollert (1988) argument that flexible specialization is a form of managerial control in a new way, which enables management to introduce change in work organization, which results in job enlargement and work intensification, and hence is a new method of exploiting labour. They further argue that flexible specialisation results in a dichotomy between 'core' workers who benefit from multi – skilling and are general a minority, and the majority of 'peripheral' workers who are found in a low – skill, low – pay industries, and the informal economy, and are predominantly contract labourers, part – time workers, and home workers Maharaj, 2000). According to Vally (1997) this latter group has no job security and work under unsatisfactory conditions.

Despite the negative aspect of flexible specialization there is enough evidence that in flexibilisation there are more pros than cons. In this global era the ethic of trust is another very important aspect taken into consideration by companies, mainly for competitive reasons. This trust relates to intra – firm's relationships between workers in the same team, between workers in different teams and between workers and managers. Trust should develop from the increased communication and information sharing, as well as the greater inter – personal contracts and relationships that global impact demands (Kaplinsky, 1994, p: 26).

These facts have quite dramatically changed the basis for competition. Price competition is highly important. However, the business world has recently experienced the emergence of consumers that demand better quality, greater variety and more rapid innovations. On top of

these, conformity to standards and more reliable delivery are other features of the new competitive environment created and fostered by global impact. For their own survival organizations are restructuring themselves in such a way that their products meet global standards. These standards can only be met if organizations adopt world class production or manufacturing system. This realization has led to the rapid adoption of a flexible production system by most of the industrialized countries. To achieve and maintain world class competitiveness South African companies need an intervention. Intervention in a form of state policies and legislation's that are going to facilitate, monitor and enforce world competitive standards. The following discussion will turn on the response played by the South African government to economic and global challenges to ensure that world class standards are met by South companies.

Chapter Five

5. The State and Globalization

We live, it is asserted, in a globalize world in which nation – states are no longer significant actors or meaningful economic units; in which consumer tastes and cultures are homogenized and satisfied through the provision of standardized global products created by global corporations with no allegiance to place or community (Dickens, 1998, p: 2). Having said that, there is an argument that globalization is dissolving the essential structures of modern statehood. In SA, in the early 1990s, there has been a dramatic change in policy making. In a global system in which productive capital, finances, skilled personnel and trade flows across national boundaries, the traditional distinction between the internal and external no longer holds. Such interconnectedness created a situation in which decisions in SA can produce major consequences for the citizens of this country and many others outside. There is a marked coincidence between the major features of South Africa's transition to democracy and acceptance in the global world, with implications for the consolidation of democracy in South Africa. Key elements are power relations between foreign governments, international financial agencies and domestic players, which have conditioned the political choices of the latter, thereby shaping the trajectory of the transition (Pillay, 1999, p: 24). This, as Morse argues, is the indication of the inability of governments to meet the demands of their citizens without international cooperation (Mcgrew & Held, 1992, p: 91). Whilst this maybe the particularly acute in the economic domain, a number of policy problems can now be resolved

through domestic actions or decisions. SA, in responding to challenges imposed by globalization was, forced into extensive international conditions of policies – policies that had traditionally been considered 'internal' to 'internationally' recognized policies. Morse argues that 'interdependence' has eroded the traditional boundaries between the internal and external domains encouraging an expansion in the functions and responsibilities of the state whilst simultaneously denying it effective national control over policy formulation and policy outcome (Morse, 1976, in Held & Mcgrew, 1992, p: 92).

The discussion so far points out that globalization in one way or the other has diminished state autonomy and exerted pressure for states to comply with international demands. There appear to be two major schools of thought in relation to the role of the nation state: those who argue that the nation state is in terminal decline (Scott & Stoper (1992); Chilson (1990); Amin & Thrift (1992; Reich (1992) in Harrison, 1996, p: 10); and those who maintain that the internationalization of competition has enhanced the importance of the nation state as a basis for creating and sustaining competitive advantage (Harrison, 1996, p: 10). The question of the declining power of national governments or states is, however, a controversial one. Central to the debate on the significance of globalization, is the power of the nation state or national governments. Isaacs (1997, p: 2) argues that, there are two positions to this global debate:

- National governments have no power

- National governments have some power

Let us look at the first view. This view states that globalization undermines the power of nation states to control their own economies. According to Isaacs (1997, p: 2) the reasons for this are:

- Governments can no longer control the movement of money into and out of their own countries, especially since computers have made it possible for the money exchange to take place without the knowledge of government. Today Transnational Corporations (TNCs) are

able to bypass governments by engaging in economic activities through their international company structures.

- Government is under pressure to reduce active role in their national economies through neo – liberal economic policies. Governments can no longer exert strict control over the information that their citizens receive, and

- Lastly, national policies are strongly affected by international institutions like the International Monetary Fund (IMF), World Bank and World Trade Organization (WTO).

The former President of SA Nelson Mandela, refers to this situation as the 'loss of state sovereignty' (see Nel, 1999, p: 23). His comments can best be summarized in terms of two points. Firstly, the process of globalization makes it impossible to decide national economic policy without regard for the likely response of the markets and international markets, (emphasis added). There is 'inevitability' of the loss of sovereignty and a surrender (of society) to the economic processes. Secondly, Nelson Mandela has identified not only financial markets as the beneficiaries in this struggle for sovereignty, but also claimed that sovereignty of the state has been transferred, in crucial respects, to institutions of international governance (ibid, 1999, p: 23). This condition has been referred to as the 'widening' and 'weakening' of the state, or as Rosenau prefers to label it, 'the widening and withering of the state's competence.' (Mcgrew, 1992, p: 90).

This explains Isaacs (1997) second view, which states that globalization is greatly exaggerated, especially in relation to the undermining of the nation state. Isaacs (1997) argues that individual states still exercise substantial independence and authority in regulating the political situation and the economies of their countries. That the balance of power has not swung decisively towards global forces. It is argued that national governments are centrally involved in the globalization process through their membership of key international institutions that regulate the world economy, such as the WTO, the IMF and the World Bank (Isaacs, 1997, p: 2). This explains what Cox (in Mcgrew & Held, 1992, p: 89) views as the internationalization of the state. Cox argues that the state has been internationalized and by internationalization of the state forms of international government through which collective policy making and coordination of policy between governments have become vital to the achievement of national and international goals. In this respect, globalization must go hand in

hand with better policy coordination among sovereign national states, better international supervision of banks and financial institutions, an end to fiscal dumping between states (within the European Union, for example closer cooperation within international organizations, and strengthening of those organizations to ensure greater flexibility and efficiency (Beck, 1997, p: 130). A good example in SA is seen in the former SA president, when Nelson Mandela was released from prison in 1990, he – reaffirmed that the 'the nationalization of mines, banks and monopoly industry is the policy of the ANC and any change or modification of our view in this regard is inconceivable (Pillay, 1999, p: 24). In late 1991 the ANC did an about – turn. Mandela reassured President Bush and corporate executives in the United States that nationalization is like the sword of Damocles hanging over those who want to invest. So long as nationalization is our policy, we will not attract investors (Ibid. 1999, p: 24). Hence, before coming into office the ANC committed itself in a letter of intent to the International Monetary Fund to eliminate import surcharges, maintain a competitive tax structure, contain government expenditure, and develop an export – oriented economic growth path.

Since coming to office the ANC led government has been formulating and implementing policies that would enhance responses to globalisation and its challenges. In SA after 1994, we witnessed the emergence of privatization of state owned enterprises, development of monetary and labour policies that are in line with global trends. It is true to say that governments, and in particular our government, are not free to act completely independent from external pressures. Under such conditions and constrains, the SA government remain active in responding to global and local pressures. The South African government is in line with the three broad schools of thought concerning the role of the state. One school of thought advocates government to play a heavy role as a public trainer, while the World Bank and other proponents view the best role of the state to being minimal and for training to be privatized. The third and final school sees government playing a role to inculcate skills development among the poor (Monib, 2000, p: 61).

In fulfilling it's role the SA government has introduced Acts, policies or laws in order to be competitive with the rest of the world. To perform globally national policy strategy was needed to respond to global demands and trends. In SA, the Reconstruction and Development

program (RDP), Growth, Employment and Redistribution (GEAR), Human Resources Development (HRD) policy, new labour policies, policies on education, Skill Development Act and many more acts and policies were introduced. The Skills Development Act in particular and other relevant policy development are going to be discussed in the following chapter to reflect on SA's response on challenges imposed by global trends. Just like in the previous chapter, whereby it was noted that the state played a leading role in shaping SA (in a negative way), the coming chapter is about the crucial role played by the new South African government, business sector and trade unions in responding to challenges imposed by globalization.

5.1. Globalization and SA Developments on skill

The 1994 election ushered in an era of democratic rule with the resultant restructuring of the South African society into a democratic and non – racial society. However, the attainment of democratic system was not a complete victory over apartheid, as this was accompanied by further complex challenges. Amongst those challenges is the skills shortage, low education levels and technological training practice which had far reaching implications for the development of the country (Mji, 1994, p: 42). On gaining political freedom SA became a part of the global village and had to compete openly in international market. Its industrial enterprises, which were protected by inward looking policies, were now thrown into the international arena and required a labour force that is sufficiently skilled to adapt to highly unpredictable and volatile global product markets and rapid technological changes (Mji, 1994, p: 42). The labour market now requires high skills with broad problem - solving capabilities and knowledge to enable workers to work in teams responsible for complex manufacturing processes in new forms of work organization. This represents a significant shift from past traditions where workers were allocated narrowly defined prescribed tasks, which made it difficult for them to become creative and improve productive activities.

Because of the past legacy of apartheid, the Human Resource Group recommended that the new democratic South Africa adopt a high - participation, high skill model characterized by a high degree of state and employer involvement in education, skills development, training and low-level of social stratification (Mji, 1994, p: 40). This was a direct response to the

international debates that expected the state or government to play a proper role in human resource, skills and economic development.

In March (1995) the then minister of Labour Tito Mboweni, unveiled Skills Development Strategy for economic and employment growth in SA. He announced that the strategy sets in motion a skills revolution in our country and that nothing less than a revolution will suffice when one considers the urgent need for employment and productivity growth (Vally, 1997, p: 38). The Skill Development Strategy was issued by the Department of Labour in March 1997, a document which had emerged from two years of exhaustive consultative discussions both within government and between government and its primary National Training Board (NTB) and Nedlac stakeholders (Seta bulletin, 2001, p: 6)

Kraak (1997, p: 74), in analyzing the newly issued Skill Development Strategy (SDS), argues that the strategy is a classic example of supply – side restructuring. He refers to the SDS as an approach that prioritizes the role of the state in the economy, especially in establishing the institutional, infrastructural and interlocking policy requirements, which are needed to underpin both equitable social development and successful incorporation within the global economy. A supply – side approach focuses on:

- The social foundations (institutional structures and social policies), which underpin economic performance, and

- Integrative and complementary policy making and balancing free market policies with the supply side.

The SDS was accepted with minor amendments and this eventually evolved into two new Acts of Parliament, namely the Skills Development Act (SDA) that was passed in November 1998 and the Skills Development Levies Act (SDLA) in April 1999. These Acts are driving the skills development process in SA today. There are other interventions by the government in favor of the South Africa Qualification Authority Act (SAQA), Further Education and Training Act (FET) and Employment Equity Act (EE). But this study will focus on the SDA and SDLA, however a reference to SAQA, FET and EE will be made because changes in ABET, general schooling, vocational training and higher education will affect the design and

delivery of skills and learning programs (Understanding the Laws, 2001, p: 1). In a country like SA with its history of deprivation the nature of the problems that exist in skills development and training are multifaceted and it would be naïve to contemplate that there can be a single solution there to.

The SAQA Act became law in 1995. As its name suggest this created the SAQA, whose mission was to ensure the development and implementation of a National Qualification Framework (NQF) which will contribute to the full learner and to the social and economic development of the nation at large (Curriculum, 2000, p: 11). It intends to provide qualifying learners with applied competence and a basis for further learning. The notion of applied competence requires that a qualification should address the theory as well as the practical needs of learners. A qualifying learner must be able to understand as well as do something useful with the acquired knowledge in a real world for the social and economic development of the nation at large. The SAQA also regulates the registration of qualifications and promotes quality in education, skills development and training (Curriculum, 2000, p: 12).

Further Education and Training (FET) Act was enacted in 1998. Its purpose is to foster intermediate to high level skills, lays the foundation for higher education, facilitate the transition from school to work, develop a well educated autonomous citizens and facilitate opportunities for life long learning through the articulation of learning programs (Department Of Enterprise (DOE), 1998, p: 5). It seeks to transform public and private education and training institutions through the introduction of new governance and funding arrangements and for the registration of private providers. FET is designed to assist SA to compete successfully in the global economy. Similar to the Japanese model, DOE will be located on the supply – side ensuring the production of suitably skilled persons for the national economy and Department of Labour (DoL) on the demand side identifying and meeting the skills demands of the market in the short term (Mji, 1998, p: 47). The Employment Equity Act on the other hand, seeks to eliminate unfair discrimination in employment and to achieve a workforce that is broadly representative of the population as a whole. Education, skills development and training have a significant role to play in equipping workers with the skill to meet equity targets. There is a link between equity and skills development.

The implementation of these legislation is based on the premise that the only resource that need to be developed is rooted in a nation and the ultimate source of all its wealth – i.e. its people and workers (Clinton & Gore, 1992 in Godfrey, 1997). The only way SA can compete and win in the 21st century is to have the best-educated, best-trained workforce in the world. Towards this goal, the Skill Development Act was implemented with the overall aim of improving the skills of SA workers and its people broadly. This it aimed to achieved through the following:

(1) The introduction of a new institutional framework to determine and implement national, sector and workplace skill development strategies,

(2) Making sure, that more training and development programs provide workers with nationally recognized qualifications,

(3) Providing learnerships that lead to recognized qualifications through the combination of theory and practice,

(4) Establishing new ways to pay for the skills development through a levy grant system and the National Skills Fund,

(5) It provides for employment services and their regulation so as to help the unemployed and retrenched workers find work and to help employers find skilled workers,

(6) It seeks to encourage partnerships between government, employers, workers, education and training providers and communities (Seta Bulletin, 2001).

Further more, to achieve this aims, the Act introduces an of the Act an institutional and program framework comprised of the following:

5.2.1. Sector Education & Training Authorities (Seta's)

On 20 March 2000 the Minister of Labour established 25 Seta's, each with jurisdiction over a defined economic Sector (Barry & Norton, 2000, p: 7) (See Appendix 2 for the 25 Seta's). On the same day the 33 Training Boards established under the Manpower Training Act, 1981 were repealed. According to Morotoba (in Barry et al, 2000, p: 7) the 33 Institutional Training Boards (ITBs) covered a narrow industry scope as they were established along industry lines and government departments were not participating in the activities of the ITB's. The Setas will ensure that partnerships exist between the public and private sectors.

The 25 Seta's will play a major role in assuring quality of learning. Their role will also involve disbursement of funds to employers who comply with the training grants guidelines and liaise with the National Skill Authority (NSA) on policy matters relevant to their Sector. They are also responsible for ensuring that programs meet standards and that certificates are issued on the achievement of appropriate credits. Setas will ensure that educators are properly qualified and that the education and training is in line with the standards set by SAQA (Vlok, 2001, p: 29). Setas will also be responsible for: the management of learnerships, the support of training initiatives catering for small, micro and medium enterprises (SMMEs), quality assurance functions in accordance with SAQA, planning, report, monitoring and investigating functions with respect to skills development and training within particular sectors, performing financial functions, in particular assisting employers to comply with the necessary conditions to get access to grants and subsidies, and as well as to promote public and private partnerships for skills development in the sector (Vlok, 2001, p: 29).

5.2.2. Learnership programs

Learnership will largely replace the current system of apprenticeship. Formal training through learnerships will be dependent on work experience. Learners will be accredited through the NQF (Vally, 1997, p: 38). This involves the substantial expansion of entry-level training in many more occupations than those traditionally covered by apprenticeships (Kraak, 1997, p: 78). Further more learnership is available to wider range of learners including first timework seekers and unemployed workers (Barry & Norton, 2000, p: 9). Learnerships are established by learner's agreements between a learner, an employer and an accredited training provider and are required to be registered with the relevant Seta.

5.2.3. The National Skills Fund

A levy – grant system is defined as one where companies (whether private or public) have to pay a training tax or levy into a fund and then get the whole or part rebated in the form of grants for expenditure on approved training schemes (Godfrey, 1997, p: 177). The proposed levy – grant-funding scheme (a tax of 1% of payroll) provides the state with critical influence over the economy and in the formation of skills, which it previously did not have. Government can use the 80% grant allocated to industry to influence training (Kraak, 1997,

p: 78). The purpose of this levy is to fund the skills development of employees and unemployed persons. Employers may reclaim much of the levy they have paid if they provide skills training for their workforce. In 1990, levy grant systems were reported to be in operation in more than 30 countries, most of which were like SA in the lower and middle income brackets (Godfrey, 1997, p: 177). Bas (1988, p: 355 – 369) claims that 'levies' to finance training have generally had positive results. One country in which a levy grant-funding scheme seems not to have been a failure is Singapore.

It should be noted that the South African SDS stresses the notion of applied competence. This means that workers understand the reason why they are doing these tasks and are able to adapt when changes are needed (Vally, 1997, p40). The concept suggests that foundational competence; practical competence and reflexive competence are all necessary for the meaningful accomplishment of a task in any real world context. Foundational competence is described as an understanding of what is being done and why. Practical competence is described as a demonstrated ability to a particular thing. Reflexive competence is described as a demonstrated ability to integrate or connect performance with the understanding of that performance so as to learn from the actions and adapt to change and unforeseen circumstances (see Bellis, unpublished, p: 16). Linked to this is SDS emphasis on a need for competitiveness in line with business view. To equip workers with the skills to succeed in the global market and to offer opportunities to individuals and companies for advancement to enable both workers and companies to play a productive role in SA and the global market. According to Vally (1997) skilled workers and managers are less likely to take an adversarial stance in relation to productivity enhancing strategies required by companies, as they are more likely to understand the competitive pressures that impact on the firm.

Sam Gidin (1995) argues that SDS shows that competitiveness has emerged as the ideology of the new era of capitalism because it presents the development of productive forces as having only one possible channel: the strengthening of the capitalist class and of individual companies''. It is hoped that the skill development strategy will not gradually become consumed by such an emphasis.

Education and training is seen as a panacea for resolving problems such as low productivity, skill shortage and unemployment. We are commonly described as living in a learning society filled with knowledge workers, a description that stresses the centrality not only of knowledge but of rapid changes in education and training, requiring learning as a permanent process in the economic development of the future (Crouch, 1999, p: 1). In nearly all societies unemployment is highest among those with low levels of education and training and this has adverse effects on the economy of the country. The SDS is positive that education and training present opportunities for both the employed and the unemployed. Individuals who acquire advanced levels of education and training are more likely to secure prosperous economic future for their respective companies, the country and individuals. Skilled workers are seen as both a value-added product and the means by which the economy is to be improved.

SDS states that the new learnership system will encourage flexibility of labour. Corporations are likely to increasingly reduce their own direct employees to those with core competencies and to contract out other activities. The danger here is that corporations will try to 'Flexibilize' their workers through the use of precarious contracts (Crouch, 1997, p: 157). Vally (1997) argues that flexible production leads to new forms of labour market segmentation with a smaller core of relatively highly paid and skilled 'permanent' workers and a periphery of lowly paid and insecure casual and temporary workers. This system may well be a lead to a greater global economic competitiveness, but it provides no relief to the under – privileged and unemployed.

5.3. Critique of SDS

Criticism of the SDS emanates from the two different ideological positions. For Vally (1997) the SDS is a purely demand - led or market - driven approach to training and skills development. While in contrast, Kraak (1997) views Vally's understanding as simply ultra – left critique. Vally (1997) sees Kraak's position as constituting an accommodation to capitalism, where the role of the state is seen as being to manage capitalism. This reaffirming of capitalism by the state initiatives does not meet the needs of the majority, argues Maharaj (1999, p: 93).

Vally (1997) states that the SDS is silent on those skills that are vital for social development, which will not serve the cause of international competitiveness. Examples here are child – care and community-organizing skills, which the community constituency calls people - centered or caring as opposed to industry - led skills. Industry - led learnerships will not provide these skills that are essential for community development. Vally believes it is necessary to provide skills in a variety of fields. He nonetheless, expresses some misgivings about the ability of the learnership system provided by the SDS to deliver.

He further states that the SDS lacks measures to correct discrimination against women and the disabled people as well as the barriers that communities face in terms of getting access to training. Measures to combat the general 'stigmatization' of workers, age, sex and race are not discussed in the SDS. Vally postulate that the system of learnerships prioritizes the formal sector and demand – led training, and therefore does not fall under the category of a true supply – side-restructuring method. Maharaj (1999, p: 103) states that Vally's belief stems from the uncertainty of the extent to which small enterprises and the informal sector will be able to meet criteria required, in order to provide the work experience component of learnerships. This component is necessary for accreditation as it is most likely that the big industries will only be able to provide the correct conditions required for work experience module of the learnership, most of the other target groups outside the formal sector will be excluded from entering the system.

According to Kraak (1997, p: 80) the supply – side measures may be insufficient, as it is not yet clear whether the measures proposed are sufficient to bring about the desired shift from a 'low – skill' to a 'high skill' economy. He argues that the SDS fails to articulate the link between skill formation and the restructuring of workplace grading systems and job design. This is the most important 'complementarity' required for competitive advantage in the global economy. According to Maharaj (1999, p: 101) this is a crucial area in terms of correcting inequality in the labour market, particularly with respect to pay and the closing of the apartheid wage gap. The proposed SDS fails to look at the ideological dimensions of skills (Vally, 1997, p: 40). For instances, often skills shortages are regarded as the reason for a lack of economic growth, and concerted efforts are made to increase skills in particular sectors (Maharaj, 1999, p: 101). Yet little attention is paid to the notion that skills training

sometimes serves to deepen the ideological hold over workers and tie them to capitalist work values (Vally, 1997, p: 80). Kraak (1996, p: 121) refers to this process as the 'ideological reconstruction of skill which is used by employers to attempt to internalize key company norms, values and work ethics among the labour force during skills training to ensure stability and loyalty among workers. For instance his evaluation of training courses such as the popular '6M' course and other productivity related courses (kraak, 1996), found that much of this training was aimed at re – orientating black workers towards the free market system. In fact both the NTB/HSRC and ERS initiatives for a new education and training system, formulated during the 1980s and early 1990s, contained elements that emphasized a role of the education and training system in the development of key social attributes that were supportive of a capitalist work ethic (see Maharaj, 2000).

Despite criticism by both Vally and Kraak, I want to argue that the SDS is going to succeed. The role of the government is not to manage capitalism but to eradicate capitalism. Capitalism gives no regard to workers training needs (as seen in the previous chapter 2). With the transition to democracy, the role of the state has changed tremendously. Policies of the former government together with the capitalist organizations where established in a way that black people were unable to access good quality training inside and outside work. The role of the government through the SDS seeks to create better and equal training opportunities for the majority of workers. Vally argues that the SDS is silent on those skills that are vital for social development. These are skills normally found in the informal sector. He might be right and wrong at the same time. According to King (1989) in Monib (19), because informal workers seem to need to be persuades to be trained for the informal economy is not properly acknowledge by government as such SDS will be less effective. Training for social development does not benefit the formal economy and serve not the cause for global competitiveness, so there is a tendency not to acknowledge skills training for social development. At the same time informal or social training has been tainted in developing countries because it exclusively supplied training for high and middle level manufacturing and technological skills giving no regard to community skills training (Monib, 2000 p: 62). If given it reinforces unequal power relations by promoting stereotypical skills training especially for women, while at the same time the main beneficiary of training are male (Bennel, 1999, p: 5 in Monib, 2000 p: 62). This confirms Vally's point that the SDS lacks measures to correct discrimination against women. In contrast to the views already stated, it

must be noted that the informal sector is diverse in nature with multiply needs, so it is difficult to meet all the training needs of workers. Workers must be persuaded which inhibits the success of training from the start. Lack or little education of workers in this sector is the main reason for low demand for training and for the difficult of the SDS to provide training to informal workers. The SDS will deracialise the workforce especially in the formal economy in that it will eradicate all forms of discrimination, remove obstacles that prevent certain groups from occupying positions. In fact, it will lead to equal training opportunities for all. Kraak argue that skills training will serve to deepen the capitalist work values. The SDS ensures that individual workers needs be met. To respond to Kraak's point, one can therefore say that with more emphasis on workers needs there is no way that companies values are going to be internalized to instill workers loyalty. Instead, the opposite is most likely to happen. Workers through training will be knowledgeable, competent and empowered to challenge almost anything that attempts to oppress or control them.

5.4. Implementation of the SDS

In the light of the above critique, a proper implementation of the SDS across the whole range of institutions with the state's role being to ensure that this happens will lead to real change and success of the SDS. Companies with more than 50 employees are required by the SDA to establish a committee to implement skills development. This is to ensure a 'buy in' from the managers and shop stewards or workers representatives. It has been proven that the success of any skills implementation project is dependent on the participation of all the players, on the sharing of tasks and on all – round company support of projects (Mail & guardian, 2001, p: 3).

The implementation of the SDS requires companies to appoint a skills development facilitator, who will be responsible for the development and planning of firm's or a group of firms' skill development strategy for a specific period (DEL, 2000, p: 1). The facilitator, who may be an external or internal person, is required to have a qualification or equivalent competence in the occupation in which he or she will practice this training and development function. Appointing a skill facilitator will equip the company with skills and the expertise to build skills (making it more competitive). The skills development facilitator will then be expected to perform the following functions:

- Assist the employer and workers with the development of a workplace skills development plan. The Department of Labour requires that companies develop a skills plan in order to claim back levy payments. A well thought out strategic skills plan would work for business and make companies globally competitive.

- Submit the workplace skill plan to the relevant Seta. An employer will be able to recover 10% of the total levy payment for preparing, submitting and obtaining approval from the Seta for a workplace skill plan. According to the Act this is referred to as grant B. An employer under grant C will be able to recover a further 20% of the total levy payment by preparing and submitting an annual training report based on the approved workplace skills plan. In grant D each Seta will make available grants to the equivalent of 5% of the total levy payment by the employer for specific sectors skills initiatives.

- Advise the employer on the implementation of the workplace skills plan. Additional quality assurance mechanisms will be added at this stage for assessing skills implementation process, for example, reporting structures, keeping of records, the impact of skills development on the business and assessing job competencies.

- Assist the workers with the drafting of an annual training report against the approved workplace skills plan. A good skills plan considers factors enabling and inhibiting the plan, for example, company dynamics, labour disputes and company stability. Advise the employer on the quality assurance requirements as set by the relevant Seta. Any in house - training course will need to be aligned with SAQA for approval and grant repayments (Mail & Guardian, 2001, p: 3).

The proper implementation of the SDS will succeed, as its main focus is on workers and their involvement in sustainable development, through a Workplace Skill Plan (WSP) which is empowering and builds capacity. I view the WSP as a plan who's objective is to improve workers life, and in particular the previously disadvantaged. Through the WSP workers can participate on equal basis without being discriminated against. Training courses and programmes will meet workers needs resulting in workers being conscientised.

Conscientisation will make workers to be more involved and lead to empowerment. This will develop, change workers and make them to be more productive. Through empowerment workers will challenge existing sources of discriminatory powers and authority if they continue to exist. The recovering of funds will make industries to be more committed to training. Although, Vally (1997) criticizes the funding proposal as a measure that will only benefit industry. Even if the industry benefit, what is more important is that workers are developed and trained.

5.5. Conclusion

The rise of a new global order has characterized the evolution of world society, as a result there is a global move towards involving people in processes of change by developing organizations, providing skills training and building in all sectors of society, in spheres of government, the economy and civil society. This includes the internationalization of new values and new attitudes as well as the acquisition of relevant knowledge and skills for the actors involved in leading such change processes.

How then can the goals be achieved, challenges be met and impact of this new global order be managed? How possible is it to improve the skills and quality of workers within entities, such as Portnet Durban Harbour (PDH)? It is to this consideration that the next chapter turns to focus on how PDH responds to challenges presented by globalization and local pressure in the form of Skill Development Act in order to address the skill question and improve business efficiency and performance?

Chapter 6

PORTNET DURBAN HARBOUR

" Gateway to the Southern Africa "
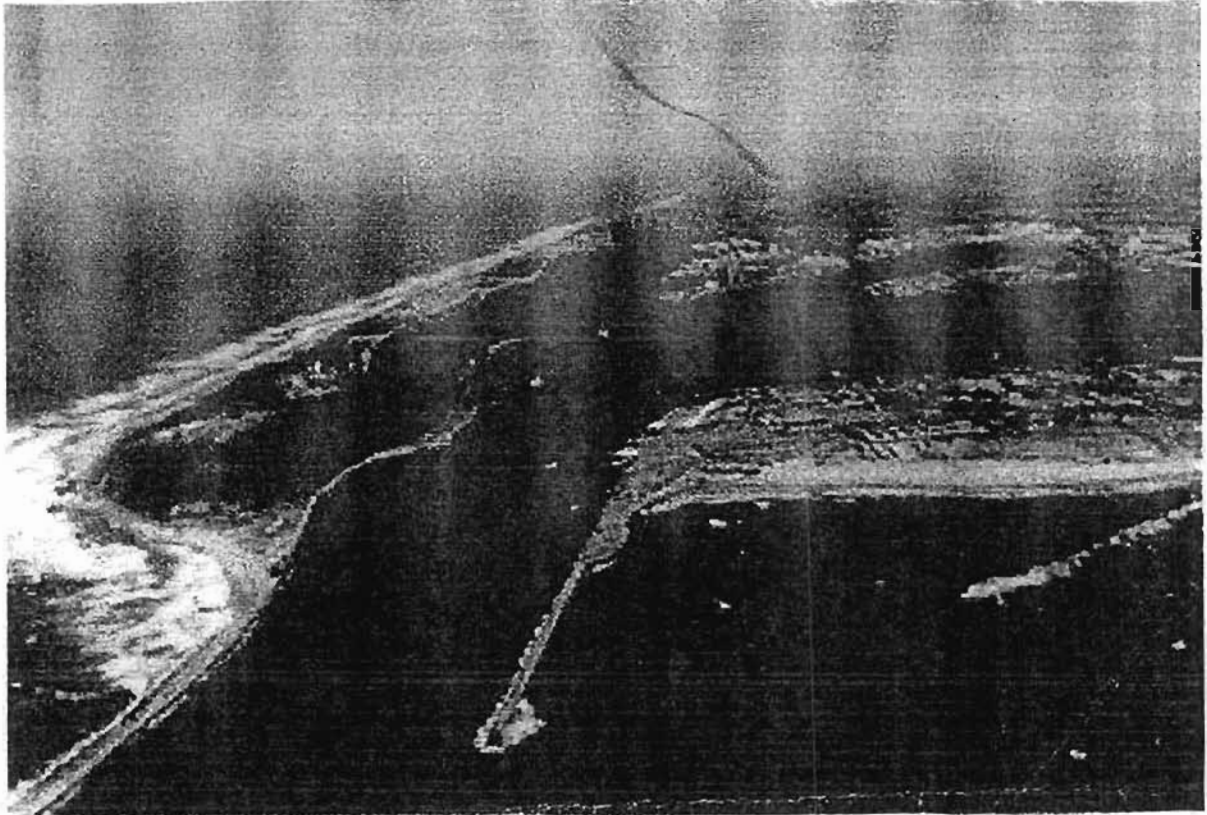
The Port is strategically located to serve not only its immediate hinterland, but also the vibrant industrial and commercial hearthrob of Gauteng. It is excellently placed on world shipping routes and offers road and rail links that are second to none on the African continent (Pornet handbook, 2000, p: 4).

6. A case study of Portnet Durban Harbour (PDH)

6.1. PDH Overview

Portnet Durban Harbour is ideally situated on the South East Coast of the continent, and has played a vital role in the economy of Durban and the rest of South Africa. It has earned itself the honour of being labeled as the Gateway to Africa (Portnet, 2000, p:1). Micheal Bender (1988, p: 4 – 5) in his own words argues that, "the Durban Harbour came into existence on the Christmas day of 1497 when Vasco Da Gama sighted what he referred to as 'The land of Natal ". In 1823, over 300 years later, a brig, the 'Salisbury' sheltered in the bay during a sudden storm. On board were two Lieutenants, King and Farewell, who were seeking a suitable harbour where barter trade in Ivory could be established. Impressed by the potential of the bay, they immediately returned to Cape Town to obtain approval for the building of a trading store. Thus began the history of South Africa's busiest port, which in 1824 comprised a settlement of some 30 people on the site of the present City Hall. Since its inception minor and major developments have taken place. The port's first major development was the construction of a timber wharf in 1870, near the present berth point "A". This was followed by the development of Maydon wharf which started in 1904 with the dredging and reclamation of the mud flats on which industrial and commercial concerns are now sited (Bender, 1988, p:5). In 1940, the harbour entrance was deepened to 12,8 m and between 1944 and 1945 the South Breakwater was extended by 152,4 m (Brackenbury, 1991, p: 9).

In 1944, the port's berthing capacity was increased by the erection of a wharf known as T – jelly, which extended into the bay. (Horwood, 1969, p: 42). Further major developments included the construction of Pier1 in 1969, which extended into the bay and lay adjacent to Salisbury Island and the establishment of a container terminal in 1977. It was at this time (i.e. 1960's) that the General Manager of the South African Railways and Harbours stated that: '...The expansion of the Republic's commercial and industrial activities has posed special problems in the field of port operations and management. Adequate port facilities are essential to ensure the free flow of import and export traffic and the ports must therefore be maintained and developed to keep abreast of the increasing demands' (Haarhoff, 1970, p: 19).

Therefore, a decision was made in 1974 stipulating that South African ports' should operate a container service by mid −1977.This development allowed the port of Durban to burgeon, and established it as the best equipped and most modern harbours of its kind in the world. According to Wiese (1981), this can be attributed to the following:

1. It is one of the busiest harbours of the Southern Hemisphere with regard to the number of ships calling at the Port,

2. It has enjoyed a continuous growth of tonnage handled while other Ports were experiencing a decline,

3. The existence of grain elevators gives the Port a unique advantage over the other South African ports, and

4. It offers a multiplicity of services and has a greater growth potential than other ports in South Africa (Wiese, 1981, p: 18 in Moodley (1994, p: 39).

6.2. PDH's current state, global challenges and responses.

A comparative analysis of the ports of Southern Africa reveals that as the years progressed, PDH remains the best in Africa, but compares badly with other international ports (Portnet, 2000, p: 1). Moodley, identified this problem and cited the following as the main key factors that led to the bad performance of the Port (Moodley, 1994, p: 38). According to him, the key factors are: land scarcity, congestion, lower loading rates and tonnage handled, low productivity, and the safety and surplus of an unskilled labour force. In recognition of these weaknesses, the Port responded by introducing the 'Future View' document in 1992 with its central aim being to rehabilitate and modernize the Port to meet its international standards. As a result of this document, the past decade has been characterized by very exciting and intellectually stimulating developments in the Durban Harbour. The Port has arguably been at the forefront of changes and developments in the KwaZulu Natal region and South Africa as a whole. Recent reports spell out that ambitious plans are underway to move the port into the next century and, in so doing, reap the rewards as South Africa prepares its re- emergence as a world economic force (Portnet handbook, 2001, p: 1).

Presently, the ongoing investment in new equipment and the refurbishing of existing port infrastructure, along with major upgrading and expansion of the container and breakbulk terminals, epitomize the commitment to once again stand tall amongst the major ports of the world. Due to international demands the Port has launched a new project called the ' Port of Durban Development 2005', which aims to provide additional container handling capacity to meet existing and future demands as well as consolidate general handling facilities (Portnet portfolio, 2001, p: 1). The first phase of the project was scheduled to begin in September 2001 and be completed in June 2002. According to Portnet Durban Harbour (PDH) project Manager, this comprises a 507 million investment in three new quayside cranes and 20 new straddle carriers, replacement of equipment in the existing container terminal as well as major infrastructure to increase capacity from 1,3 ton equipment units Twenty Foot Equivalent Units (TEU's) to 1,6 million TEU's per annum.

Phase two provides for the future relocation of the passenger terminal from what was currently an operational area to a site adjacent to the point waterfront development, significantly improving the Port/City interface. Phase three intendeds to convert Pier1 for container handling. The latter phase involves the conversion of infrastructure and the acquisition of new equipment (Portnet portfolio, 2001, p: 1).

In essence, because of these developments the port is looking beyond its traditional boundaries into Sub–Saharan Africa. It cannot afford to rest on its laurels as globalization and technological advancement and competitiveness set high standards of excellence (see Portnet handbook, 2001, p: 1). As a result of global trends the port saw the need to divide into two entities: namely, the Port Authority Division (PAD) and the Port Operation Division (POD). This division can be traced back to the 1994 when Jeff Radebe, the Minister of Public Enterprises announced far-reaching plans for the transformation and restructuring of public enterprises (Department of Public Enterprise (DPE's) report, 2001, p: 1).

After 1994, South Africa's democratic transition was accompanied by the transformation of a closed and internationally isolated economy, to an open economy. According to the 2001 report of the Department of Public Enterprise (DPE)'s, the enhanced flow of goods and capital between South Africa (SA) and other parts of the globe since 1994, is evidence of

PDH's competitiveness and place in the international economy. Historically, argues the Project Manager that before the division of the Port, Portnet was answerable to Transnet. He further explains that Portnet was divided into three entities namely; Port Operations, Rule Maker and Landlord. As the Landlord of the ground, Portnet owns buildings and equipment. Due to international trends Portnet is divided into PAD and POD. Whereby PAD serves as the owner of land, market the Port, sets and enforces the rules. It is also responsible for the dredging of the Port's entrance and for leasing certain areas to private terminals. According to the interview I had with the IT manager this is a direct response to what other ports are doing in the world, especially in the terminal business. According to him a lot of overseas private companies are running terminals, but not PAD. Once PAD took over, business became more streamlined. The vast majority of international trade enters and leaves SA through Portnet's seven commercial ports. Hence, restructuring/transformation and responsibility division are the names given to the collection of initiatives aimed at separating Portnet into PAD and POD. The high-level objective of responsible division is to achieve an end state where PAD and POD are established as two separate, independent business units of Transnet, in compliance with the shareholders' commercial and regulatory requirements (PAD Special Report, 2001, p: 3).

This study mainly focuses on POD. It provides cargo handling (except stevedoring aboard vessels which are undertaken by private enterprise) and marine services, which include tugs and pilotage (Bender, 1998, p: 5). Cargo handling facilities are provided on a non–discriminatory basis, whilst ships are served on a first – planned first serve basis. Where necessary, special purpose quays may be provided on a common–user basis for the handling of specific commodities or type of cargo such as ore, grain, bulk cargoes, unitized cargo and containers. Due to international trends, there is a shift from primary commodities to manufactured goods. This implies a shift away from goods exposed in the form of break–bulk to containerized cargo. Cargo is moved between ship and shore, whereby the latter is served by land-based transportation. It is important to note that cargo sheds are for in–transit storage only and special warehouses for long and indefinite periods of storage are not usually provided. Should space capacity exist, the storage and warehousing of cargo for long periods would be considered (Bender, 1988, p: 5).

Within POD, Portnet Academy, established in 1990, offers skills training, development and education in partnership with training and development centers based in the major South African ports. The Functional training officer posits that the Academy strives to provide the transport and maritime industries, and container terminals with a competent and motivated workforce. Functional training is the main focus of Portnet Academy. This training consists of four legs: namely, driver, lifting equipment, cargo operation and bulk Cargo. However, the Academy no longer offers training in the latter leg. According to the Training and education officer the Academy was established in 1990 to provide skills training, development and education. I have outlined current challenges, policy planes and measures of intervention. The next section will look on actual responses to challenges imposed by globalization.

Technology and globalisation is the main driving force of the recent changes in the pattern of PDH development. The effects of globalization are felt in a number of areas by PDH. These are globalization of changing markets, reflected in more rapidly changing patterns of consumer demands, globalization of competition, and globalization of changing technology that will speed up service delivery. We have seen that PDH's response to these challenges took the form of 1992 'Future View' plan and 2005 Development Project. One of global challenges and consequences is that new products, which in turn require new ways of doing work, are constantly entering the market thus making the general cargo less global competitive. From the interview with the Marketing Manager general cargo is no longer internationally marketable. However, the trade is still going on with the ports along the East Coast of Africa and general cargo in under - developed parts of Africa is not finished yet. According to the Marketing Manager, owing to international market trends the Port is now getting pure Bulk Cargo (which is coal and iron ore), liquid Bulk Cargo, sheets of steel and unitized Cargo (things like big blocks of granite). However, recently, there has been a string of shifts from general cargo to containerization. According to him, the study conducted by Oceanic Shipping Consultants has shown that, world container port demand has expanded dramatically over the past three decades.

The present Portnet Marketing Manager further argues that the growth of 250, 9% from 1980 to 1997 has globally, taken the container ports from 36, 4 m to 198, 5 m tons. This was followed by an estimated 11% increase to 220 m ton in 1998. With the growing global

containerization, rising trade volumes have come via increasingly larger ships. According to the Portnet Marketing Manager this has placed demands on ports to continually upgrade their capabilities in terms of quay length, container gantry cranes, berth depth, storage space and tariff system. In order for the Port to be internationally competitive, its tariff structure needs to be in line with other major competitors around the world. If the port is perceived to be too expensive, customers will look for an alternative market. Goods must be charged at the most profitable rates possible, but in line with international trends. Tariff reform is vital if the Port is to stay in business. Clients are increasingly demanding better product quality and quality variety at a reasonable tariff. Due to client requirements, the following research was conducted by the port:

- International tariff trends and structures

- Aligning future tariff structure with international trends

- To compose the present tariff structure to that of international ports, and

-To solicit further inputs and comments from internal competitors, as well as global competitors, prior to confirming the new PDH tariff structure and application (Portnet portfolio, 2001, p: 4).

Encouraged and fascinated by highly attractive tariff charges, the number of vessels calling at the Port remains at excellent levels. There is abundant evidence of user–loyalty and the regular addition of new international customers. In responding to the increased number of vessels calling, PDH posits the Marketing Manager responded by converting Pier1 terminal handling general cargo, to containerization. However, the Port's ability to cater for increased containerization is severely limited, hence the conversion of the Pier1 terminal into a container handling facility, with a view to expand this terminal eastwards towards Salisbury Island (Portnet, 2001, p: 3). According to the Marketing Manager, previously, the port used to handle 6 000 containers a month, but due to global market trends the port is presently handling nearly 15 million tons of containerized cargo per annum and approximately 80 000 containers per month. This represents the largest amount of container handling in the Southern Hemisphere. According to the Port management, there is a belief that the development of the containerized market is linked to globalization and macro–economic developments. This is reflected in a long–term correlation between the country's Gross

Domestic Product (GDP), general growth in trade, growth of containerized trades, tariffs and container port in particular.

To remain competitive, PDH must become extremely efficient. To aid the required high level of efficiency, new technology is increasingly employed at all stages of Port operations: to rationalize, automate and accelerate processes. PDH is increasingly following the world in this regard. According to the interview with the Project Manager, since 1977 PDH has been using the old technological system and in 1997 new technology was introduced. He argues that it (new technology) came with new products, new markets and new ways of doing work, especially with the introduction of the Cosmos computer software system and computerized straddle carriers. He further states that the newly introduced Cosmos system and computerized straddle carriers have significantly changed the way work is done and led to increased trade. The new Cosmos system can, therefore, be defined as change to production or products that represent a deviation from the methods of production or the types of products used or produced in the past. This definition is derived from Schumpeter's (in Moore 1998, p: 1) explanation of innovation, the doing of new things or the doing of things that are already being done in a new way. According to the International Labour Organisation (ILO) 1991 report, the introduction of automation, or the Cosmos system in the case of PDH, aims at changing work operation, increasing productivity and improving quality and hygiene by means of the computerization of production operation (ILO, 1991, p: 10). At PDH, the technological revolution (cosmos) has automated the work operation and has led to a reduction in costly, unforeseen incidents in the work process, and a reduction in the number of accidents and breakdowns.

With growing global competitive demands, containerization, trade and ship arrival has increased at PDH (as argued by the Project Manager). According to him many straddles are operating simultaneously to lower ship waiting rate, increase productivity and to meet global standards. He further argues that this has placed huge pressure on PDH to increase the number of existing straddles in operation. Therefore, 20 new straddle carriers and a fitted Reefer container, a new containers system, are expected next year. In the old system, only two straddle carriers were fully operating, but with the advent of the new electronic system, straddle carrier interaction is high. Previously, straddle one would enter and exit the position

without awareness of another straddle carrier, which could lead to accidents. With the newly installed electronic device on the straddle carriers, 5-10 straddle carriers can enter and exit any available position. However, too much emphasis on productivity can result in the straddle carriers being overworked, and too many active straddle carriers can lead to accidents.

The introduction of the computerized operation system, Cosmos, with imminent Electronic Data Interchange (EDI), followed by the new straddle carriers, is indicative of the Port's commitment to becoming a significant player in the world markets. According to the project manager, the newly introduced Cosmos software system has helped to curb fraud, improved service delivery, ensured safety and changed work operation. In the past, the Port was fraught with fraudulent and unscrupulous customers who would arrive with trucks not belonging to the rightful company. They would falsely paint the company's name on the truck, forge false documentation and obtain false registration plates. There were no electronic data pertaining to the Port's clients, which facilitated fraudulent activities, which damaged the port's business.

Therefore, the port appeared less attractive to companies and was not living up to its potential as the best port in Africa. With the new computer system, a certificate of registration, details of the company and the trucks' registration numbers are all recorded electronically. The movement of traffic to and from the port is electronically recorded with ease. The computer records when the container was collected, where, how and by whom. If an error occurs the computer system will detect and immediately correct it. Likewise, the straddle carriers and cranes have the ability to notify the driver of an impending problem. The straddle carriers and cranes have electronic control devices that can either slow down or stop the hoisting process.. So if the driver has a heart attack it will automatically stop. The same applies when the crane is travelling out on the boom, it will automatically stop before it gets to the end, even if the driver instructs it to continue moving.

On lowering the container it will slow itself down but the straddle won't stop, as it does not know where to land the container, whether on the ground or on the truck. The new straddles are of world class standard because of the Programmable Logic Controllers (PLC) in each new straddle. The Project Manager defines PLC as a recording devise on the straddle carrier,

which monitors oil pressure, water level, and driving habits. According to him, everything will be recorded on the computer, enabling it to display the temperature levels and drivers' behavior. For example, the PLC is used to monitor the mechanical aspects of the cranes and straddle carriers, such as oil levels and wear of parts like bearings, notifying the driver of any problem arising. It also regulates the operational speed limit to reduce possibilities of accidents. While this new technology may seem like it reduces the workers' control over their work, the opposite is in fact the case since it is the workers' who give the instructions by pressing buttons or entering codes to feed the main computer framework. Thus the worker, through the operation of the machines, is able to exert control over it and monitor its movements to ensure improved operation and productivity. This dispel the notion that technology can be, and is mainly, used to control workers. The next section will look at the Cosmos system that has revolutionized PDH work operations.

6.2.1.The Cosmos System

The new Cosmos system has changed the way work is done at PDH (note that reference to the past system of operation will be made, this is done to give insight into how work execution has changed due to technological innovations in response to globalization). Appendix 3 and 4 at the back, shows the flow chart of containers export and import. The ship Estimated Time of Arrival (ETA) system provides Durban Container Terminal (DCT) with an "arrival at port", time 10 days before the ship is due. This information is captured by Cosmos and confirmed within five days. DCT will then fix the export stack area and the yard planner will open the area in preparation for offloading. The identified export stack area will be demarcated and the yard planner will inform the Cosmos computer system to fill it up with the import containers that will be coming off the arriving ship.

Previously, argues the Project Manager, before the introduction of the new electronic system, the whole operation was done manually. The DCT yard planner was required to firstly empty the stack area completely and then row-by-row allocation of different types of containers would subsequently follow. For example, ship Surf Marine arrives on 25 October and the plan will be as follows: heavy containers will go to row A, medium containers to row B and light containers to row C. At times different types of ships will arrive on the same day and the plan will be the same (i.e. all heavy containers that arrived on that day will all go to row A).

It is reported by the project manager that the new system is virtually fully computerized, which gives the DCT more efficient utilization of the stacking area. He further states that with this system there is a 70% improvement of the stacking area operation. Whereas, in the past only 42% of the export stack area was utilised. After the shipping line has sent its ETA Advises, it then provides a detailed list of import containers for discharge to the DCT. The DCT will capture the data into Cosmos unlike the old system, which had had no Electronic Data Interchange (EDI) capacity for communication between DCT and the arriving ships.

According to the Project Manager, in the old system, the ship planner had to plan each individual container and create paper worksheets. For example, using the worksheets, the controller would say Straddle carrier number 1 will only be responsible for containers identified by even numbers containers (i.e. 2,4 and 6) and straddle carrier number 2 will be in charge of odd numbers (1, 3 and 5). In the new Cosmos computer system when the container comes out and lands on the quay, the details are captured by the controller under the crane and the Cosmos will immediately identify the container and decide where it must be placed in the yard (See Appendix 5 which reflects the planning discharge of the ship). Effectively, there is no real discharge ship planning with the Cosmos computer system, whereas there was a detailed discharge planning with the old process of work, which was extra work and time consuming.

Due to technological advancement the controller simply feeds the information into the Cosmos software system and the system will automatically rubber band the area in the computer and fill in any available positions in that area where containers will be placed as they come off the ship. The captured information will be linked electronically to the cranes and straddle carriers used. At this point every one is ready to work. In the old system the yard planner had to clear up the area and the straddle carrier would then be instructed to take the container from the ship and put it into the area and report his position as well as the position of the container by radio to the control tower. The control tower would in turn record the position on the worksheet and at a later stage enter the information on the computer.

The Project Manager further explains that the following problems were experienced by Cargo controllers and straddle drivers: there were delays from radio messages that were going through, communication problems and the fact that computers were updated very late. Now all information is captured by the Cosmos computer system and the cargo controller is ready to commence the offloading of containers. The cargo controller records details of each container landed, using a hand-held Cosmos computer terminal, which is linked by radio to the host. The host identify a specific position for the container in the stack, as per allocated stack area and rules. The host will quickly identify the nearest available straddle linked to the crane and with allocate the task to it. The straddle carrier will immediately receive the instruction on a mobile data terminal and complete the task. The task is to take the container and place it on the identified stacking area. On completion of the task the straddle carrier driver will indicate to the host by pressing a key on the data terminal. The host will then update the container position and issue the next instruction to a straddle driver. The process will continue till all vessels are completely offloaded.

This new technologically driven operation is a significant improvement from the previous process whereby the cargo controller had to tally containers manually on discharge worksheet. Straddle carriers took containers in any position available on a specific row and reported the position to the tower controller by voice radio. The tower controller recorded the stack address on a copy of the worksheet. After 5 – 6 hours the tower staff will update the computer with container stack positions. There was no time for tracking misplaced and un offloaded containers.

The verification of containers in the stacking area is also done electronically. This new system is more efficient and effective. Mistakes are easily identified and quickly rectified whilst the ship is still around. The DCT no longer has to contend with the incorrect delivery of a container destine for Japan, but later reported to have gone to America. With the old system, the information was checked manually after all the worksheets had been returned, and by this time the ship would be long gone. Now the information is given electronically without delays. Faster communication of information straight to the customers' computer system is also ensured. This allows the customer to quickly verify the information and make new plans. Cosmos has made the communication time frame shorter. When all is done, the

customer would send out an electronic release. This is done for security purposes because the customers' are encountering problems with paper fraud. Appendix 6 provides a summarized work operation procedure by Road and Rail delivery. The procedure is the same the cargo controller simply changes the format. The Cosmos system installed in the straddle carriers and cranes has revolutionized PDH work operation and the logic of production.

Although the Cosmos system has revolutionized work operation by comparison, PDH is trading behind in terms of the straddle carrier-loading rate which is at 16 containers per hour unlike in Europe and the United States (USA) where the rate is 25–30 containers an hour. The expected hourly rate should be 22 containers. According to the PDH project manager, the main cause for this is not the technology in use, but the ports staff/employees. This has a direct effect on productivity. Comparatively speaking, the loading rate of PDH is the best in Africa, but it compares badly with the rest of the international ports.

The issue of comparing PDH with other ports raises further questions and future speculations about the Port's competitive and productive capacity in international markets. This is an important factor, which needs to be addressed by both parties involved (i.e. workers & management). As is evident, PDH has acted on its 'Future View' plan with regard to the need for technological improvement in order to meet global challenges. These include the Cosmos system, computerized straddle carriers, electronically operated cranes and a move from general cargo to containerization. In the midst of these global responses there are some problems. These include insomnia, fatigue, communication problems caused by a lack of insufficient training and personal problems that may disturb workers work.

Moodley (1994), in his earlier research on PDH, identified almost similar weaknesses. This raises questions such as: what is causing the Port not to perform well and yet technologically it is well advanced and compares well with international giants? Is it a question of skills shortage? The answer lies in the 1992 'Future View' document. According to Moodley, PDH's 1992 'Future View' plan failed to acknowledge the importance of investing in human resource development, hence there are language and skill shortage problems (Moodley, 1994, p: 86). Central to the question of skill at PDH is the apartheid legacy whereby the majority of black employees were never given appropriate training. According to the interview with the

Information Technology (IT) Manager, this applies to all training (note in the past), not only to technological training. In the past research conducted by Horwood (1969, p: 81) on the Port, skills training was segregated along racial lines with no attempt what so ever to invest in black workers. White workers comprise the skilled or semi-skilled supervisory and operational workers, while black workers mainly comprise the unskilled portion of the labour force. Operational and supervisory jobs were highly paid while unskilled jobs were low paid. This indicate the racial and class segregation of PDH's labour force, confirming the three segments that have emerged in capitalist economies and are identified by Amsden (1989), Webster (1985) & Barker (1992) as: the independent primary, subordinate primary and the secondary market (see table below). A year after the publication of Harwoods research, Haarhoff (1970) in his research on the Port found out that similar problem were still existing. In his research he stresses, "all skilled jobs in the harbour were reserved for white employees only (Harhoff 1970, p: 84)". According to the interview with the Port Skills Development Officer all jobs in the past that require computer skills were reserved for whites only (see table below).

The table below based on Haarhoff's findings indicates the racial disparities at PDH:

Whites	Blacks (Unskilled Personnel)
Port Captain's Establishment 472	514 blacks doing unskilled work
Port goods superintendent 200	71
Skilled Personnel	No Black skilled personnel
Crane drivers 205	Labourers permanent 3 405
Shutters 133	Labourers casual 560
Fork – lift drivers 209	Indunas 89
Wharf fireman 46	Stokers 92
Wharf inspectors 10	Railway workers 50
Checker 810	
Casual labour supervisors 100	
Casual checkers 250	

Moodley research findings suggest that there were no attempts to promote human development, especially amongst the previously disadvantaged. Management concedes that training in the past concentrated on the tiny white personnel. According to the Information Manager (IT) this was done so as to ensure that when technology is introduced or new job opportunities arise, whites are the first to take them. An example here is that no direct attempt was made to fund educational programs, focus on skills training and development and empower black workers to participate and work in jobs that require the use of machinery/technology. Moodley argues that, "technological advancement must be accompanied by investment in human capital, the training of management and of skilled and unskilled operators and by increasing organizational capacity". Moodley further states that PDH is far too technologically oriented and it is doubtful that it has the organizational capacity to invest in human capital and to initiate participatory process between workers and management. According to him there is no accountability to the workers and unions on the part of PDH development efforts. This unwillingness to invest in human capital is a direct reflection of apartheid or rather the capitalist nature of South African organisations and port's.

Joffe points out, "it is important to note that this underinvestment in human resources is not a peculiar PDH problem, but a South African companies problem (Joffe, 1993, p: 187). She further states that at the micro - level of South Africa's companies there is widespread underinvestment in the development of human capabilities. This is despite international evidence that a high correlation exists between higher levels of productivity and high levels of investment in skills training. This has had a huge impact on the skills shortage in the Port of Durban. In the light of the above evidence, the 'Future View' plan has failed to address the question of skill disparities and lack investment in human capital thus perpetuating inequalities in skills and access to certain jobs. It also failed to discuss what demands the proposed technological innovation and new equipment infrastructure will have on the existing staff and skills levels as well as whether new personnel and skills training will be required.

The drastic measures embarked upon by the management to establish the Academy in 1990 failed to reverse past skill imbalances. It seems as if the Academy started at the time when the pressure to increase the level of efficiency for world competitiveness was increasing as a result of technological changes that led to a need for skilled workforce. Due to political changes and global pressure in SA, Portnet also had to change, especially the kind of technology they were using was outdated as compared to other international ports. A need to introduce new technology (as seen previously in this paper) became an immediate response, of which failure not to comply would result in the Port being out of business. According to the IT manager, the isolation of SA during the years of apartheid before 1994 resulted in Portnet as an organization and the Academy to be dependent on the few skilled white workforce. Workers were then taken into the Academy for training. The legacy of apartheid in skills training and unwillingness to invest in human capital is haunting the Academy operation. Signs of management maladministration as a direct reflection of apartheid manifest themselves at the Academy (i.e. between 1990 – 1997 period).

According to the Skill development Facilitator, "the Academy was introduced at the time when South Africa was going through changes but not change as yet". When it started, it functioned badly, workers were randomly selected for training without proper criteria being followed as to who qualifies to be trained. This is confirmed by one of the management representatives, who say that workers were selected to fill the Academy in order to get the course running and to make the training officers busy. According to the Education, Skill Development & Training Consultant, training at the Academy tends to be more casual and lacking in follow - through procedure. The attitudes of the training officers and HR personnel was such that training for labour was viewed as a cost rather than as an investment. As a result workers or learners were not properly trained.

Ari Sitas discovered in his study, "… there in this training, which led him to argue that there are in this training sector many unscrupulous trainers who feed off ignorance and train poor people or workers in what appears to be 'office' work or work for 'tourism', which in reality, is a fraudulent fleecing of ordinary people (Sitas, 1998, p: 37)". Similarly, the 1990 National Training Board (NTB) Annual Report (1990) states that while training was offered, the values and attitudes of trainees were not adequately influenced by training (see also

NTB/HSTC, 1986, NTB/HSRC, 1989, 1991, p: 100 cited in Kraak, 996). According to the skill development facilitator, "PDH trainees were not influenced by training offered, instead they harboured negative attitudes about training offered". For example, they taught that training was going to be used as a tool to socialize them to be subordinates and 'yes boss' boys. This might be the reason why trainees were negative about training Mji (1998) state that in the past whilst training was defined (via the MTA) as a practical and technical process to improve the performance and productivity of the black workers, it was used as an education tool to socialize workers into their subordinate conjuction location in society and at work. At PDH, workers state that the reason for the negative attitude displayed by them towards training is that some feel they are too old to be subjected to formal training especially in a class situation.

The majority of these workers argue that they were never afforded an opportunity to go to school before and as such they don't see a need for training. They further argue that the training offered is not sensitive to their needs, is used for the attainment of other purposes and that training duration is too short. Many workers stated that they were being assessed in a language that they were not most fluent in and this disadvantages them. This can be understandable as the training instructor argues that the average educational level of Portnet workers is below Standard 8 and only few can speak and understand English. The training instructor further states that there are crane drivers and straddle drivers who cannot speak and understand English. If candidates can be assessed in the language of their choice, better results could be achieved. Assessors should be able to communicate in the languages understood by workers and equal status must be given to all languages at all levels in that I mean the computer language must be accommodative of other languages. The reality is that workers use other languages than English when working. English is the only medium used in computers, management however feels that workers do not need to know English but rather that all they need is to have basic numeric and literacy capacities.

According to the management the operation is not language (English) driven but technologically driven. The English language does not come to the picture at all because workers are trained enough to understand buttons, codes and letters or symbols. With the interview I had with the Academy Training and Education officer, it has transpired that the

main purpose for the establishment of the Academy was to improve the competitive level of the workforce, to make the Port globally competitive and to rectify the injustices of the past, like language problems and skills disparities between black and white workers. As for now the findings seems to indicate that the training offered by the Academy since its inception up until 1994 failed to deliver and that it might be the causes for low productivity levels and workers inefficiency (see Moodley, 1994). If that is the case, this disputes the claims made the Training Manager that the Academy since its inception has been the best training Academy throughout Africa. The establishment of the Academy has been unable to adequately address the skill problem so far and also to find out what causes low productivity and other work related problems experienced by both the management and workers. Below is the reflection of what training modules are being offered and how, the duration of training, who gives training, whether does training correlates with the new technology or equipment in use and results in increased productivity or not?

Cargo Co – coordinating training

According to the interview I had with the POD cargo co – coordinator training officer, learners accredited with these modules will be equipped with the knowledge and skills needed to be efficient, productive and competent in the various Cargo Handling Operational fields[1]. By cargo handling operations Portnet means that they do general cargo, shipping discharge, motorcars and containers. The cargo operation training comprises of six modules which are:

-   Module CC1 (Wharfside, loading & Dispatch document & Procedures) - 4 weeks duration

- Module CC2 (Discrepant Cargo) 3 weeks

- Module CC3 (In – Shed check) 3 weeks

- Module CC4 (Manifest duties) 3 weeks

- ModuleCC5 (Shipping duties) 3 weeks

- Module CC6 (Containerization) 10 weeks

Cargo Operations specialize mainly in handle cargo using a lot of documentation. With this documentation system a lot of tally sheets are used whereas in the past they used to have one

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[1] Note that the issues raised from page 68-70 were derived from the interview I had with the Cargo coordinator Training Officer.

tally sheet for all the shipping and discharge. One tally sheet was used in the past for the move of cargo with the new system 12 different tally sheets are used. They do not always use all twelve-tally sheets at the same time; since to use all tally sheets would depend on the type of work. For an example in Saldahan Bay they only use 3 tally sheets at any one time because they do not have containerization, they only have break – bulk, whereas in Durban they have different types of Cargo.

Module CC1

This module deals mainly with the loading of road trucks, rail wagon, vehicles that convey cargo by road. Learners are taught how to make a document for the road trucks, to look for truck labels and to learn about orders, what must be scrutinized and how the document is signed. They are also taught for the discharge of Cargo and a little bit of containerization, just the basic principles. The issue of safety and security is also covered in this module for the learners, for them to adhere to the regulations stipulated by the Port. The passing mark for this module is 80%. It is high for competent reasons, by doing this Portnet is preventing the high rate of claims. Workers are trained and taught so as not to make mistakes.

Module CC2

In this module workers are taught how to handle and complete a different documentation for discrepant Cargo (i.e. any Cargo which is damage). Basically they have 4 different documentations either a book or a document itself that needs to be completed. It becomes easy for workers at this stage because they have the background knowledge of module CCI. This module is for any Cargo, which is landed damaged, it could be a container or general Cargo, bags, cases or anything in the container. In the case of the damaged Cargo the worker needs to know what needs to be written down, how must it be written, what document to use and what must be examined so as to avoid claims.

Module CC3

This module is about checking the Cargo in the ship itself or on the wharfside. In module one the Cargo was checked already from the ship when it landed on the wharfside, it was checked. The third module ensures that the Cargo was checked correctly that there are no mistakes or shortages and that they are marked correctly. While the ship is busy discharging and after its completion, the shed check co – coordinator walks around up and down through the shed and on the outside of the shed in the work area and he marks off and makes remarks of all the Cargo which has landed to make sure which Cargo is / was damaged before the ship

even came to the Port. If the Cargo is damaged it must be taken to an allocated area for damaged goods.

Module CC4

In this module the cargo controller is taught how to be the eyes and the ears of the Port. He is the person who has access to all the Cargo, to the agents, owners of the Cargo and to the stevedores. He is in charge of the shed itself, everybody who's got a query or a problem, he is the only one who can address that problem. He is the one who knows which Cargo has been damaged, checked in the shed; he has access to the tally sheets, the manifest book itself. Everything that is coming by ship is written in the manifest book, all the marks, numbers, totals, quantities that need to be landed, the type of packaging and what is inside the package. Once he has the book in his hands, he will start receiving landing orders for Cargo, which has to be delivered by road or by rail. He is the first to start with the discharge and after the ship has finished discharging he will be the last one to leave as well.

ModuleCC5

This module deal mainly with shipping. It focuses with the Cargo that goes onto the ship from the ground / wharfside/ T – side, from the truck and road truck. This is basically a turn - around of the Manifest CC4. The worker in charge is called the shipping co – coordinator. He calls in the trucks, contacts Spoornet, in him he's got the list of all the trucks of the Cargo that goes in the ship. He obtains all the information from the stevedores or the agent in charge of the Cargo. The shipping co – coordinator contacts Spoornet a day or 3 before the time of Cargo arrival and tells Spoornet where and when he wants the Cargo placed on the wharfside in the trucks. At times the truck is off – loaded before the ship arrives and the Cargo is placed inside the shed so that the trucks can be released. The best method is to off – load the truck directly unto the ship for efficiency and cost effectiveness.

Module CC6

Since the arrival of this module or type of work a lot of documentation has been taken away as far as this new system is concerned. In this module the learner is taught how to operate a hand held computer because in this new system the equipment they use is computer driven. What the new system does is that it will tell you where to put the container, the number of the container, whether the container is damaged or not, the code of the container. Almost everything that was normally done manually is now done by capturing the information into a hand held computer. Every container has a unique code when it comes off or loaded into the

ship, there are different codes for every container. With this system you can do discharge and shipping at the same time. All you need to do is to change the format. This cosmos system is the inclusion of all the 5 mentioned modules. The information from the hand held computer is transmitted by radio to the main computer every time the message is captured.

Lifting equipment training

According to the interview with the lifting equipment training officer, learners or workers are trained to be able to operate the equipment effectively as well as efficiently. They are trained to operate a certain machine for a specific purpose. The following requirement must be met and fulfilled by the learner. He / she must be physically well, have a very sharp eyesight, be computer literate and not afraid of heights. So as the learner you are trained and tested in all these requirements. For practical training workers are taken into a Simulator room. A Simulator room, is a room where workers / learners are taken in for practical skills training experience. This machine consist of the computer screen and a keyboard where you punch in your pin number, use buttons and two gear knobs for forward and backward purposes, and for pulling and picking up containers. Appendix 7 is the picture of the simulator room while Appendix 8 are different types of technological equipment used.

Port Academy Training Officers Skills Profile

Department	Position	Gender	Qualification
Lifting Training Dept	One Training Officer (Black)	Male	STD10, Accreditation – Transnet Training Board
	Six Senior Instructor (Black & Indians)	Males	4 with STD 8 & 2 with STD 6, Accreditation - TTB
Driver training dept	One Driver Training Officer (White)	Male	STD 8, Accreditation – TTB
	7 Senior Driving Instructor (Black &Indians)	All Males	3 with STD 10, 3 STD 9, 1 STD 8, Accreditation - TTB
Cargo controlling dept	One Cargo Controlling Training Officer (White)	Male	STD 8, Accreditated training officer
	6 Senior instructors (Black &Indians)	All males	3 STD 8 & 2 STD 10, Accreditated

Source: Pornet Academy Lifting Training Officer (2001)

If we consider the table above we see that the racial composition in the training department position declined. We discover that while a number of black and Indian training officers form the bulk of senior instructors at least there is one black training lifting Equipment training officer. The Academy is playing a substantial role in deracializing the labour market. At the same time all their accreditation is done internally by the Transnet Training Board (TTB) which indicate the inward look of training acquired. All instructors are former workers, which put them at the better position to understand workers needs and problems with regard to training. According to Rahman (1993), Burkey (1993) and other writers cited in Yacoob (1997, p: 43), trainers must be able to set aside their authority, have experience and knowledge and give the participants / trainees the opportunity for self - development. The example set by the training officers is the single most important factor for determining the success or failure of the training program. All modules and training on Cargo operation,

lifting equipment and driver training methods and procedures require training officers or instructors who are qualified, skilled, responsive, responsible, supportive, experienced and good facilitation skills. In view of this, Portnet Academy training officers and instructors believe that they meet this description and they are the best in the training business. They claim that the modules taught are of international standards. From the training officers perspective in an interview I had with him, a United Nations training program is the one they are extensively using to upgrade the skills of the workers, while a modernized IT computer system (Cosmos) is now in place. Indeed they all have adequate training experience and schooling background, confirming what Thaw (1994, p: 17), Harding (1994), Hallowes (1994) and Burkey (1993) identify as being necessary for trainers in the field of organizational development, training and education of workers (see above the trainers profile).

The workers, unions and management however hold different views about the training given by the Academy. According to the Union representative (SATAWU), workers are viewed as clients when they are in the Academy and the training officers refer to themselves as consultant. As consultants they are only interested in seeing the Academy being fully attended. They do not physically go and visit the workers on the operation after training to determine the strength and the weakness of the training they are offering, whether the training was useful or not and what problems workers are experiencing. The union representative argues that there is no procedure for monitoring performance after training. Ari Sitas (1998) in his research into training providers in the Durban Metro Area also found that evaluation of training and follow – up after completion of the course is basically nonexistent among training providers. The failure not to conduct follow through evaluation resulted in workers being given an outdated training. According to the interview I had with five workers, they argue that training on the machine does not have all the features of the equipment used after training, thus workers leave the Academy half trained. For an example the equipment/technology in the simulator room (see appendix 7) does not have a new Cosmos system installed in it, thus the service the workers are supposed to be receiving, they are not receiving and these might have negative impact on productivity. Other workers, claim that the training assessment standard are schoolish (i.e. theoretical) and could not relate to what they are practically used to. They are asked things they had no knowledge of or taught things

they had not done before. This is a cause for concern as workers are not assessed in terms of their language and what they know.

In Marock (2000) study it emerged that workers were not always assessed in terms of their experience, but were assessed against standards that had been developed in other contexts. In Marock's case study of Auto standards, the standards that had been adapted were based on Australian experience and assumed that workers were multi – skilled. In the case of PDH a United training assessment standard is used which automatically assumes that all workers understand English and operate in same context as other workers internationally. This undermines the effectiveness of the training assessment program used by the Academy. I also think that the absence of the union representative in the training assessment process plays a major role in undermining the training given. Union representative understands the context, which could inform the assessment. and thus including union representative in the monitoring of the training process will make the process fair and credible to all. This will help to alleviate negative criticism from the union and lead to the creation of participation, which will ensure better results at the end of the day. Union exclusion would results in strife and criticism where the union plays an antagonistic role. Including the union does not mean that the union will stop informing, educating and keeping all workers' interests at heart. Under apartheid unions were denied meaningful participation in training and decision making processes, hence the role they play is still antagonistic. I believe that union involvement in training will alleviate some of the problems faced by the workers and Academy.

According to SATAWU representative training is divided along racial lines, although this is diminishing. It is interesting to note that PDH workers are still divided along racial lines when it comes to training or skill development. Webster sees this as the result of a historical process of segmentation of labour market, in which according to Cassim, the distribution of individual jobs, skills training and incomes has become dominated by the superficial characteristics of race (Webster, 1985, p: 195). At PDH, high rungs of labour market, in particular the crane driver jobs are dominated by whites, whereas blacks form the bulk of the lower end jobs like folk lift driver. Apartheid patterns in highly skilled jobs continue to reproduce themselves unaided by racist legislation and laws (Levy, 1992, p: 76). The skewed pool of expertise from which skilled personnel can be drawn is arguably imperative and need to be addressed.

The management representatives I interviewed at PDH, acknowledge that racial inequalities still exist and also confirm workers view that training offered is not adequately monitored. With regard to the Academy, the management says that indeed the Academy is failing to follow through after training. This is both the Academy and the management problem. Due to time constraints it becomes difficult for the Academy to even get workers because of work commitments and fear of disturbing work. It is difficult for the management to send workers to the Academy for refresher, retraining or continuous training that is supposed to be administered yearly. This is not happening because workers work in shifts and, as such, there is limited or no allocated time for retraining.

How does these affect productivity? To improve productivity and escape retraining, the management introduced the incentive scheme or bonuses for workers to reach a target of 18 containers an hour. According to Maller (1987, p: 8 cited in Mapadimeng 2000, p: 3) the incentive bonus scheme was found to be practiced and effective in most of the companies surveyed (52%) during the 1970's and 1980's. The main target of the bonus scheme was production workers. Mapadimeng (2000, p: 3) argues that through these schemes, management's aimed to instill motivation in workers, as they were excluded in the past and thus improve their productivity. Maller (1987) argues that this approach to productivity enhancement was used by management in an attempt to address wage questions by directly linking wages to productivity. At PDH however, incentives are used to escape training but to increase productivity as similar case to Maller's argument. Maller argues that "the bonus scheme was met with resistance and created negative perceptions amongst workers and trade unions, in whose view, the scheme only used to encourage corruption and favoritism and was often too low to effectively motivate workers" (in Mapadimeng, 2000, p: 3). In contrast to this, at PDH the bonus scheme led to increased productivity and was accepted by both workers and unions without resistance. According to workers they managed to reach the stipulated target of 18 containers an hour, but the management reneged to deliver on the bonus incentive scheme. Workers argue that they only received the bonus incentive once and this led to the decline in morale and work. This negates the claim that the key objective for management's introduction of incentive scheme was to reduce industrial conflict and secure the co – operation of workers and their unions on production issues. It has failed to generate trust between management and workers. What does this suggest?

Like Marx, Braverman believed that there is a fundamentally antagonistic and exploitative relationship between workers and management, at PDH this is prevalent. In order for management to maximize profit and extract maximum surplus value from workers, they had to control labour by means of money or as far as was practically possible. Does this suggest that money is the prime motivator to improve productivity? Or does this suggest that more training and financial rewards will lead to increased productivity?

Both workers and the union believe that training must lead to increased pay. This situation is called Reward - Effort according to Burawoy (1974, p: 30). Workers' efforts must lead to increased rewards. At PDH workers tend to reserve their knowledge, energy and buy time which lowers productivity (i.e.doing 16 containers an hour instead of 18 containers), where the management fails to reward them. The following analysis of working behaviour will be based on the assumption that when workers go for training, they do that in exchange for certain rewards of which the financial ones are the most important (Burawoy, 1974, p: 30). Workers argue that productivity will increase if their wages increase. On the assumption that skills training or more work must lead to more payment and the management ignores this, the workers will approach their work with the view to maintaining effort at level of 16 containers an hour rather than 18 containers an hour. PDH workers conserve their energy and buy time by causing work delays when changing of shifts and thus, controlling productivity. There is always a 30 minutes delay or a deliberate go slow at the change of shifts, with the result that the working time is almost automatically reduced to seven and half hours everyday. With regard to reward for effort, the management holds a different view. According to the management it is not the amount of work or training undertaken that must lead to more money, but it's accountability. Work is based on accountability not on money/rewards. Workers and the Union are not responsive to the demands or responsibilities set by the management. These demands and responsibilities entail that they should do 18 containers an hour at the same hourly rate payment. This has apparently always been an issue of dispute between employers and black unions whereby the former preferred to link wages to performance, and latter preferred wages to be link to standard of living (see Maller, 1987).

For management, the technology is so advanced that it can allow them to even do far better than 18 containers an hour. Workers argue that management is not accountable to them and this might be the cause of low productivity being experienced by PDH. With regard to this issue, Moodley (1994) states that PDH management lacks accountability and credibility. As a result of this, there seems to be no trust and common understanding between management and workers. In the absence of a joint effort by both the management and workers representatives in the conception and handling of wage and bonus issues, confrontation and distrust is likely to continue at PDH. A capitalist who does not plough back in the production process, in the form of further investment, is likely to be driven out of the market by more competitive and willing to pay contenders. Management, as representatives of capital, constantly attempts to pay out as little as possible for labour costs. Beside PDH's lack of financial incentives for workers, the existing tension between management and workers can be viewed as another major cause of low productivity. If the management lacks accountability, does this suggest that the Cosmos system and new equipment were introduced without consent and union participation?

According to the union representative (SATAWU) there was consultation before the introduction of the Cosmos system and agreements were made, signed and adhered to. This indicates that the union, together with the management, did not view new technology with any suspicion and as a result there was no resistance from the union. The introduction of technology has made PDH to be socially responsible. They have sought the support and co – operation of their workers, and their unions before introducing technology. According to Maharaj (1999, p: 106), "this entails the democratization of industrial relations change from highly adversarial relationship between labour and management to greater transparency and willingness to work together". Employees are informing the management about the social, financial and technical repercussions of these new forms of production. If tension between management and workers exist, something else and certainly not the introduction of technology is the main cause. It has already been pointed out that new technology impacts heavily on employment, skills training, working conditions, job satisfaction and safety. It is clear in this research that the cosmos system has eliminated some of the jobs for which training is provided through modules CC1 to CC5 and is now ensured through a hand made automated cosmos control system. Although the cosmos system has rendered other jobs redundant, PDH workers are adamant that no worker were retrenched, according to the

interview report by SATAWU union representative. Contrary to conventional notion, at PDH the opposite happened as the new Cosmos system created more jobs for workers. This notion seem to contradict Shaiken, Hodson & Parker's views that technological introduction more often than not tends to lead to retrenchment. According to the interview report with the management representatives, in the past, before the introduction of the Cosmos system there were 165 straddle drivers and today there are 269 straddle drivers and there is still a shortage. The Cosmos system did not serve the negative aspects, which centers around job destruction and employment displacement effects of new technology, instead it led to job creation and upgrading. The SATAWU reports and policy statements have no record of job loses. According to the union the 1997 signed technological agreement entails the statement that no worker must be retrenched as a result of technological innovation; technology must not control workers but make them active and give them control. This indicates how organized SATAWU is in influencing the outcomes of new technology.

With regard to the policy intervention Macun (cited in Mapadimeng, 2000, p: 8) argues: "improved efficiency and performance can be enhanced through policy interventions that bolster the institutional capacity of firms and provide incentives to those firms that are striving to achieve and are moving towards the goal of equity and efficiency, rather than policies that seek to simply reduce production costs". His argument concurs with PDH Skills Development Facilitator who argues that with the introduction of the Skills Development Act has changed management perceptions on training and workers. There is hope that through the introduction of the SDA overall productivity might increase. Two key government moves in the form of the RDP and Skill Development Act are said to have brought a tremendous change in the way the Academy operates. The RDP institutional reforms demanded that there should be a review of the functions of government departments / institutions, particularly those of importance to the government and RDP requirements (ANC policy framework, 1994). The RDP further states that the evaluation should identify whether the institutions / government departments are functioning properly or appropriately. Secondly, because of the introduction of the SDA. The two government initiates in the form of the RDP and in particular the SDA have changed the Academy and the way training is being offered. The SDA has changed Transnet Training Board (TTB) accreditation. Now the Academy had to fulfill the requirements stated in the Act and align itself to a Transport Education Training Authority (TETA). Due to the new requirements a lot of modules have changed or renewed

as a result of TETA and NQF requirements. Through this body workers can be accredited and their certificates and diplomas are accepted nationally. According to Cosatu report the system of 'modular accredited training' will allow workers to obtain 'general' skills so that they will be able to move both within and between industries with ease. This implies that PDH workers won't be confined to certain jobs with no scope for mobility. The level of competitiveness will increase in that I mean workers morale and qualification status will improve. At the same time NQF advocates, among other things, life – long learning, outcome based education, recognition of prior learning, empowerment of individual workers who can take control of their own learning and lives. Workers will be motivated to learn continuously on – the – job training and focusing on learning while actually performing the job.

PDH skills development facilitator argues that the focus of training has changed dramatically since the introduction of the Skills Development Act (SDA), which has seen the Academy and management beginning to attach value to skills training and development. The Act has brought in a new attitude to training and a new way of enforcing training. PDH is expected to pay levies as the Act requires and if they do not appoint a registered skill development facilitator they will loose the levy. As the Act stipulates, a workplace development plan need to be developed. These will put an end to confusion of randomly selecting workers for training just for the sake of it without coming up with a plan. Workers in the past did not know why they were sent for training, and when asked about it they would respond by saying 'the manager or supervisor has sent me'. Under this conditions training is likely to be ineffective and a waste of money.

Now the Act together with the changed Academy provides workers with the opportunity to understand the significance of training and to participate effectively. The workers participation in skills training was found to be the most effective mechanism in countries such as Germany, France, Austria and Sweden as well as countries in the Pacific Rim namely South Korea, Singapore, Taiwan, Hong Kong and Japan (see Maharaj, 1999). The experience of these countries showed that participation and consistent workers' involvement over long periods is essential for effective Human Resources Development (HRD). The SDA in a form of an Individual Development Plan (IDP) has caused training program to start with the felt needs of the trainees themselves. Workers see the IDP as a means of developing and re –

solving their own problems of skill deficiency. Its main focus is on workers, rather than things, and their involvement in sustainable development, through a process, which empowers and builds capacity (mirroring the learning process approach). IDP ensures maximum participation of workers and increased workers satisfaction. Participatory training method simply give ordinary workers the floor to participate in their own development. Workers will be able to act, plan and act effectively. According to Burkey (1993) participation is where people are empowered, in terms of capacity building and take lead and responsibility of their own development. In this spirit of workers participation, training needs are not identified by the Academy but by workers themselves. At the same time IDP serve as a learning tool for workers and it is life changing. Basically IDP transform development from an imposition to a rich learning experience. If workers are forced into a training program against their will, they may resent and sabotage it.

According to SATAWU this new system of training must help workers to improve their job status and skills. I argue that IDP is going to enable the marginilized workers and classes to gain sufficient, creative and transforming power of developing training to both meet their individual and the company needs. This interpretation reflects the process of breaking the monopoly of the management and empowering the marginilized through training. Bennell maintains, "that training serves a dual function (in Mji 1998, p: 16). Not only does it impact knowledge and skills but, equally important, it regulates access to certain jobs and occupations with major implication for increased productivity and industrial relations in general. The issuing of national or industrial certificates will support the movement across industries and regions in that, workers will be able to move from one industry to another. The impact of empowering workers through effective training that meet workers needs has been felt by the Port, in that PDH workers are no longer accredited with the Transnet Training Board, but accredited with the TETA and their certificates and diplomas will now be recognized nationally, argues the Skill Development Facilitator. Indeed PDH is playing a major role in education, developing and imparting relevant skills to workers.

According to the skill development facilitator a lot of training modules offered by the Academy needed to be renewed or changed as a result of TETA and NQF requirements. According to Burkey, this move is in line with the future requirements that for institutions to

be more of an educational and empowering process, in which workers and employers jointly identify problems and training needs, mobilize resources and assume responsibility themselves to plan, manage and control and assess the individual and collective action that themselves decide upon (Burkey, 1993, p: 205). One of TETA requirements is that an Education and Training Development Policy in line with workers' and PDH's needs should be developed. In response to this, PDH has forwarded the plan to the TETA. According to the Skill Development Facilitator, PDH is complying with the Act to the best of their ability. Right now Skills Development Facilitators are being trained and developed to make them effective and efficient. With regard to continuous skills training there is hope. The introduction and implementation of the Act has changed PDH job profile and deracializes work. It has managed to combat unfair discrimination and promotes employment equity and a fairly representative workforce.

The Act can be seen as a program designed to mobilize human resources and material, to eradicate apartheid's social and economic imbalances and build a new democratic and non- -racial society. Factors that exclude blacks from the labour market or relegated them to certain sectors and pervasive stereotypes of what constitutes black's work have been eradicated by the SDA. This confirms what an active labor market policy can do when introduced. An active labor policy is believed to be essential for organizations in creating a highly skilled and prosperous workforce, as well as in reducing labor market inequalities, and discrimination before and within the labor market (according to Maharaj, 1999, p: 68). According to Kraak (1994) active labor markets have the following important features:

- Continuous skill formation and lifelong learning, for all workers.

- Broad education and training to ensure maximum mobility of workers across differing employment sectors.

- The reduction of race, class and gender based labor market discrimination. Kraak views are in line with what the SDA strategy wants to achieve. In brief the Act want to improve the quality of workers lives and improve their skills continuously. To promote equity, ensure the workers mobility and meeting defined and articulated workers needs (Vhutsila, 2000, p: 9). At PDH jobs that were previously reserved for whites are now opened to all workers irrespective of race. For an example, there are 67 crane drivers of whom 46 are white and 21 are black (according to the interview with the Skill Development Facilitator)

In the past there were no black straddle drivers and fork – lift drivers. Today there are 258 black straddle drivers and 11 white straddle drivers.

Through the implementation of the SDA strategy a new labour market force is emerging although this is happening at an initial stages. This new move challenges the notion that the SA labour market is racially discriminated and calls for the new definition or explanation of the labour market segmentation theory. The research findings, contradicts what Vally (1997) posits about the SDS strategy. In his argument, "he says that skills training will be used by employers to internalize company norms and control workers". According to workers skills offered have changed their lives, afforded them an opportunity to raise their views. It has provided positive measures to redress the previous imbalances and disadvantages. It has led to the upgrading or upskilling of their skill level. This is in line with broader research findings (see for instance Gallie and White, 1993) that where there is training a clear upskilling tendency is evident. The upgrading of their skills has helped in their better understanding of work and led to increased confidence and motivation. The theory and practice has afforded them an opportunity to be able to apply what they have been taught. In other words the skills training offered by PDH Academy with the skill development officer and workers participation through the IDP has enabled the workers to improve performance and prepared them for a move into new jobs. Workers agree that there is correlation between skills training and technology in use. Through training they have control of their work and production and are able to change jobs and make career paths.

Training helps PDH workers to understand globalization, productivity team - work and competitiveness. We could see that PDH is serious about investing in workers. For example, one worker used to drive a forklift now drives a straddle carrier following training he received from the Academy. The good part of it is that his new job pay well compared to forklift driving. This move from the management point of view is multi – skilling, where one worker can be able to operate cranes, straddle carriers and forklifts. Union's reaction to multi - skilling is mixed, but positive. It argues that if training leads to multi - skilling in the same discipline as mentioned before it would be accepted unlike if it is across disciplines. This is so as the union does not want multi - skilling to be used mainly to cover for absenteeism and for exploitation of workers. For instance, where a straddle driver will be a driver, an administrator or a supervisor performing many jobs at the same pay. As a result of the SDA requirements, introduction of the Cosmos system and globalization workers are multi -

skilled, they are more confident and motivated than before, work is less boring, the workload has increased but the salary remains the same. This does not contradict the driver who was promoted from being a folk lift to a straddle driver. What workers are saying is that if you are a straddle driver and taken into training but not promoted, training must have financial gains in it whether promoted or not. To them training serves educational as well as financial purpose. They feel that training empower them socially and intellectually and are able to make better judgement although not promoted. Through training, workers posits that they have control over their working lives and production has increased.

At PDH, workers and the union have the view that there is worker control. Workers possess production control and PDH owns capital failure to increase workers wages will have negative effects on production. Workers will control production thus forcing the management to remunerate them. Writers like Burawoy (1974 & 1985), Littler (1990), Edward (1979), Friedman (1977) and many others have written extensively about labour market control. What these writers have found out is that technology increase both production and control of labour. What is very interesting in this research is that training and new technology has increased workers control over production. This challenges the view of a labour market theorist like Amsden(1989) who maintains that the introduction of technology results in increased control over labour or workers. This therefore lends support to Webster (1993)'s argument that in the actual production process, the management needs skills and experience to not only operate but also monitor the machines to ensure that they do not break up easily. Thus reducing management control over workers.

It was also discovered in this study that at PDH training, technology and wage increment are intertwined. The introduction of technology at PDH to minimize costs and to increase productivity was believed to be practically impossible instead, the opposite happened. Due to training workers demand more money. This demand PDH to come up with an integrated approach to skills training development, technology and increased remuneration. The move to increase workers wages after training would lead to improve efficiencies and present opportunities for increased productivity and international competitive. I believe that technological innovation, skilled personnel and wage increment together can yield maximum gains in improved productivity at PDH.

7. Conclusion

This study aimed to examine the skills question at PDH within the context of the new democratic political dispensation in South Africa and the increasing pressures exerted by globalization. In doing so particular consideration was given to technological changes and increased economic competition as part of globalization (see for instance Erwin and Harry, 2000 and Rosenau, 1980's views on globalization and its impact on national and global economies). Consideration was also given to the Skills Development Legislation introduced recently in South Africa to redress the skills shortages within the South African enterprises and enhance competitiveness. Thus PDH responses to these challenges and pressures were examined in the thesis.

What the study has found is that in response to these pressures, PDH has since the early 1990s started developing strategies to enhance competitiveness and overcome the skills shortage inherited from the previous political system and meet global economic challenges. Those strategies took the forms of the 1992 "Future View" Plan and later the "Port of Durban Development 2005" project. The actual implementation of the measures to address the issues and problems identified in these strategic plans took the form of Portnet Academy and the Cosmos Computer software system. The central objective was to achieve amongst others reduce congestion at the Port, improve the container loading and handling rates, productivity as well as to improve the skills levels in line with the new technological innovations at the Port.

It is however worth noting the resultant technological innovations had both negative and positive impacts. Technological innovation at PDH is praised for leading to improved economies of scales. The impact of the Cosmos system on work operation, on the organization of work and workers is so evident. Isaacs (1997) calls it the information revolution or the communication revolution. It is characterized by a shift from the use of mechanics and electro– mechanics to electronics and computerization. This has helped amongst other things to curb fraud, improve services, ensured safety and changed work operations.

Workers perceived that the introduction of the Cosmos system has improved their lives at work through the changes it has brought about. It has necessitated training for workers so that they could become multi skilled/multi tasked. This implies that management might be succeeding in training workers at the same time loosing workers control over to their side. The findings of this study demonstrate that the introduction of the Cosmos system has had both negative and positive impact on workers participation and control. This therefore has not only ceded control to workers over their own working lives, thus reducing management control, but has also led to improved efficiency in the Port's operations and increased competitiveness. This finding lends support to the views held by Hodson and Parker (1988) that technological innovation in the workplace leads to improved productivity and Webster (1993) that managerial control is never complete. This is so as management needs workers' skills and experience to oversee the machines. It thus challenges Braverman (in Amsden, 1989), Child (1984), Yarrow (1988), Shaiken (1988) and Ntuli's (2000) view that technology tends to reduce workers' control over the work process, increase the workers alienation and leads to unemployment. The findings of this study demonstrate that the introduction of the Cosmos system has actually led to increased employment (for instance, the number of drivers in charge of straddle carrier has increased from 169 to 229) and increased workers' control over their work.

In the light of the findings of the study the SDA has played a crucial role in transforming the workplace. The introduction of the SDA, technological revolution and globalization have ushered in a new milieu and terrain at PDH. It has transformed the historically racially segmented labour force at PDH as skills training was extended to all the workers and provided opportunities for upward labour mobility within the organisation. The findings of this study challenges the past view held by Langa (1987), Crankshaw (1997) and Webster (1985) that the South African labour market remain by and large racially segmented as the findings at PDH signify some trend of change.

Based on PDH achievement the SDA has the potential to eliminate forms of segmentation in the labour market and also eradicate forms of discrimination. In this way, argues Maharaj (1999), SDA can be said to be working toward realizing the broader goal of the nation, which is to improve the position of all disadvantaged and marginalized workers, who have suffered because of discrimination or neglect. The SDA strategy advanced by the present government

for the transformation of the labour market is re–ordering, shaping and molding the labour market, as seen at PDH. This then calls for the redefinition of the labour market theory, which is characterised by notions of labour market segmentation and labour control. As has been shown in the PDH case, distinctions between primary and secondary labour market are gradually disappearing.

While the SDA has had a somewhat transformative impact on PDH, there are however numerous constraints. The reality is that the majorities of PDH workers are, and still constrained by a number of factors such as illiteracy and lack of training. Black workers are still disadvantaged in terms of language and this could continue to exist. The implementation of the SDA is not an event but a process involving a consideration of many diverse factors like the past legacy and illiteracy rate. The future is promising for all PDH workers. In the near future language and productivity problems could disappear. To increase productivity, PDH needs to increase wages as an incentive factor, because according to the workers salary increment serve as a motivational factor. Should these constraints be effectively addressed, dynamic teamwork, multi–skilled, highly motivated workforce, responsible and responsive workers could characterize future PDH workforce.

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Appendix 1

:

Questions on Management and Workers representatives: their views on Technology and Skills needs

1. What has been the history of skills at the PDH?

....

....

2. Which skills are becoming more important in the light of today's challenges presented by globalisation? Please explain the reasons.

....

....

3. Which skills are becoming less important? Please explain.

....

....

4. What is the current situation of skills at PDH? Is it any different from the past 10 years?

....

....

5. Do you think / feel that the past i.e. the apartheid legacy has any impact on skills capacity in your organization (PDH)?

....

....

....

6. What do you think of Skill Development Act (SDA) and does it have any relevance to your organization? If it does or does not, please explain?

....

....

7..Does the SDA have any influence over the organization's skills plan/ policy? If so, how and what is that influence?

....

....

8. How will PDH and its workers benefit from the SDA, if at all?

....

....

9. What technology is being used and for what purpose?

....

....

10.Does the introduction of new technology impact on skills needs and performance? How and if not, why?

....

....

11.How long does it take for new technology to be introduced? (Th43 rate of technological innovations?).

....

....

12. What do workers feel about the impact of technology on their skills and ability to perform their work?

....

....

Questions on Global challenges

1. What are challenges if any. globalisation is posing to PDH?

....

....

2. What are PDH response to Global challenges? (Pertaining to skill & technological changes to meet challenges presented by ' Globalization' ?).

....

....

3. Is there any policy intervention?

....

....

4. Is it in line with the company vision?

....

....

5. How prepared is PDH to meet these global challenges? (Any measure underway to meet those challenges?).

....

6. Do you think that the measures to meet those challenges are effective? Please explain.

....

....

Portnet Academy: Operational, Functional and training management Questionnaire

1. When was the Academy first established?

....

2. What was the original purpose? Has it changes since then, if so why?

....

....

3. What skill training programmes do you have?

....

....

4. What are the worker's feeling about the programme/ what do they think of it?

....

....

5. How many workers are involved in the training programme?

....

....

6. How often are workers given training?

....

6.1. What is the length of (each) training?

....

6.2. What are its main objectives?

....

....

7. Do you think the programme is effective and why?

....

....

8. How do you measure and assess the impact of the programme?

....

....

9. What category of workers undergo training?

....

....

10. Who and what influences the training programme's content?

....

Appendix 2

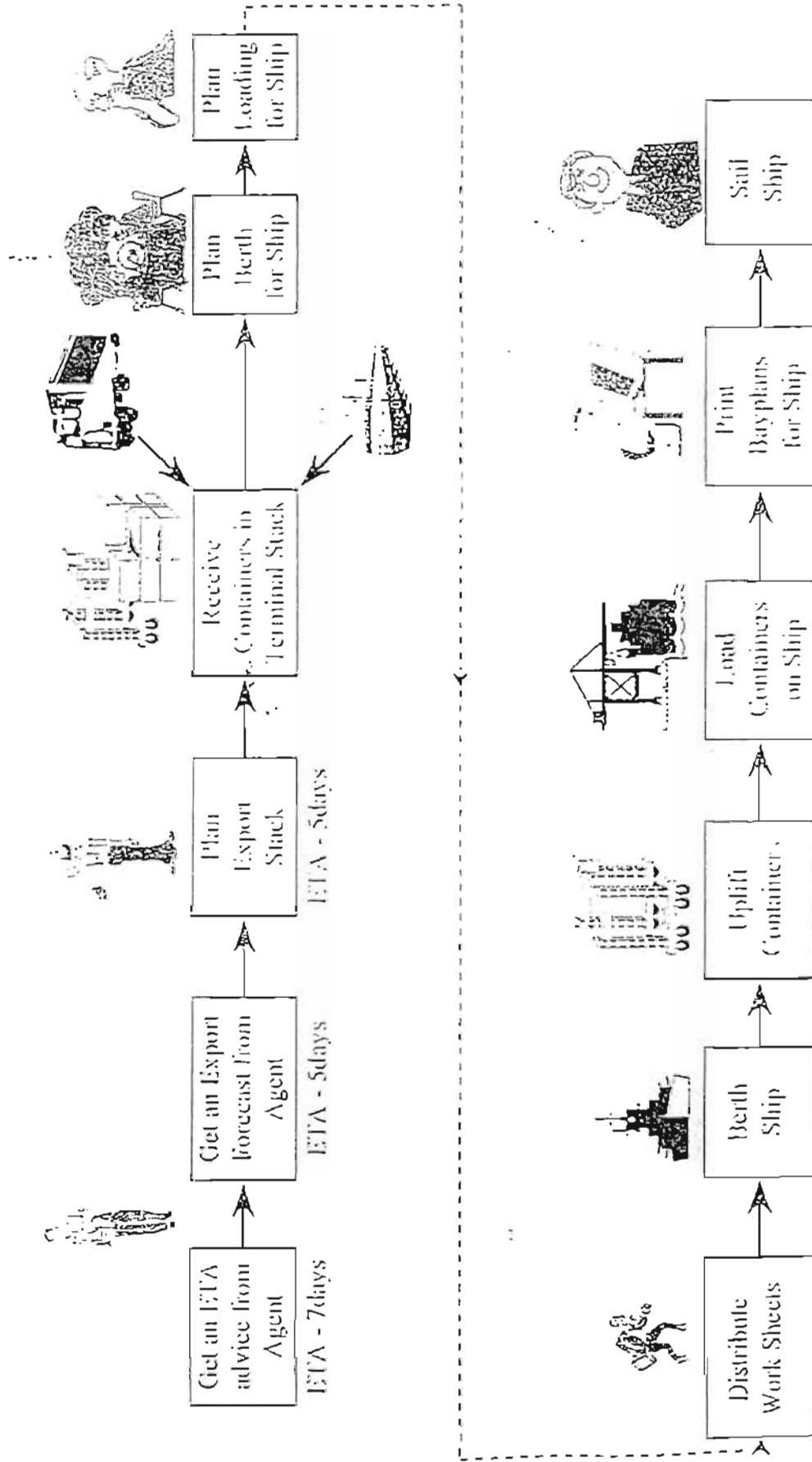**The 25 SETAS**

SETA1: Financial and Accounting Services
SETA2: Banking Sector Education and Training Authority
SETA3: Chemical Industries Education and Training Authority
SETA4: Clothing, Textiles, Footwear and Leather Sector Education and Training Authority
SETA5: Construction Education and Training Authority
SETA6: Diplomacy, Intelligence, Defense and Trade & Industry Sector Education and Training Authority
SETA7: Education, Training and Development Practices Sector Education and Training authority
SETA8: Energy Sector Education and Training Authority
SETA9: Food and Beverages Manufacturing Industry Sector Education and Training Authority
SETA10: Forestry Industries Sector Education and Training Authority
SETA11: Health and Welfare Sector Education and Training Authority
SETA12: Information Systems, Electronics and Telecommunication Technologies
SETA13: Insurance Sector Education and Training Authority
SETA14: Local Government, Water and Related Services Sector Education and Training Authority
SETA15: Media, Advertising, Publishing, printing and Packaging
SETA16: Mining Qualifications Authority
SETA17: Manufacturing, Engineering, and Related Services Education and Training Authority
SETA18: Police, Private Security, Legal and Correctional Services
SETA19: Primary Agriculture Education and Training Authority
SETA20: Public Service Education and Training Authority
SETA21: Secondary Agriculture Sector Education and Training Authority
SETA22: Service Sector Education and Training Authority
SETA23: Tourism and Hospitality Education and Training Authority
SETA24: Transport Education and Training Authority
SETA25: Wholesale & Retail Sector Education and Training Authority

The anticipated SETAs in 'Personal care and 'Sports, Arts, Culture and Entertainment' were not established because they were not financially viable.
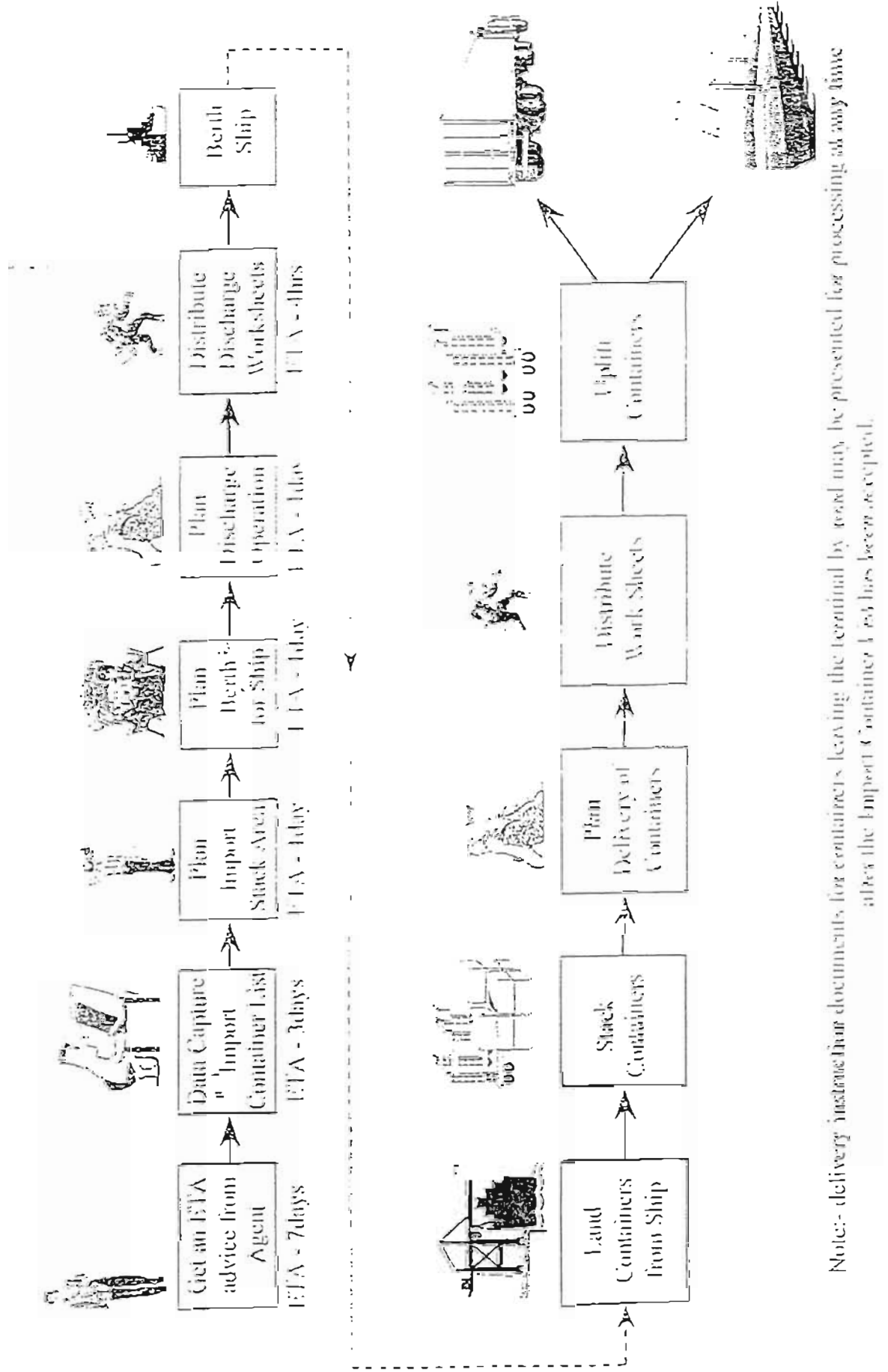
Appendix 3

EXPORT CONTAINER FLOW

Get an ETA advice from Agent	→	Get an Export Forecast from Agent	→	Plan Export Stack	→	Receive Containers in Terminal Stack	→	Plan Berth for Ship	→	Plan Loading for Ship
ETA - 7days		ETA - 5days		ETA - 5days					

| Distribute Work Sheets | → | Berth Ship | → | Uplift Containers | → | Load Containers on Ship | → | Print Bayplans for Ship | → | Sail Ship |

Note:- collection and shipping instructions for export containers can be presented at any time after the ETA has been accepted. Export containers will normally move into the terminal during a three day period prior to ship arrival.

Appendix 4

IMPORT CONTAINER FLOW

| Get an ETA advice from Agent | → | Data Capture "Import Container List" | → | Plan Import Stack Area | → | Plan Berth for Ship | → | Plan Discharge Operation | → | Distribute Discharge Worksheets | → | Berth Ship |
| ETA - 7days | | ETA - 3days | | ETA - 4day | | ETA - 2day | | ETA - 1day | | ETA - 4hrs | | |

| Land Containers from Ship | → | Stack Containers | → | Plan Delivery of Containers | → | Distribute Work Sheets | → | Uplift Containers |

Note:- delivery instruction documents for containers leaving the terminal by road may be presented for processing at any time after the Import Container List has been accepted.

Crane Sequence	Discharge																					
	Load																					
Workload	Discharge																					
	Load																					

Workload	Discharge																					
	Load																					
Crane Sequence	Discharge																					
	Load																					
Total moves		64		198		117	101	233		264		219	69	173								96

505	506	507					

Old Process

New Process

Road delivery

Agent		New Process	Old Process
DCT	Presents CTO to DCT if container not listed for rail to final destination on ICL	Process CTO's, action for road delivery. Pass CTO's to rail planner	No Change
	Plan loading of train	Rail planner accesses details of containers available for loading to that destination and selects containers to be loaded	Planner had to manually plan sequence of loading
		System autoplan, load operation optimizing extraction sequentially ex stack area	Paper worksheets prepared for use by operational staff
		Electronic work queue is made available to Traffic Dispatcher	Resources manually linked to task.
		Traffic Dispatcher links straddles, haulers and rail cranes to work queues and releases instruction	Verbal instructions to hauler driver where to collect containers
DCT	Load Train	Computer instructs haulers to proceed to load point, straddles to load haulers after arrival at load point and haulers to proceed to specified rail crane	Verbal instructions to straddle to get containers from stack and load trailer
		Checker at crane record details of containers as they are loaded on train and updates computer	Driver comes back to rail head and containers are manually tallied on to train
		On completion of loading a checker records actual container on train with wagon number and position on wagon to verify status	Verbal radio message to inside controller giving details of container numbers and rail wagon numbers.
			Computer updated with details of which containers on which rail wagons
		Rail planner confirms verified details are acceptable and closes train call in computer	No final check
DCT	Dispatch train	Computer transmits full details of wagon list + containers to Spoornet system	Spoornet and Portnet had common computer system at that time
		Rail planner arranges removal of train to shunt yard by rail	

Export Documentation Process			
Shipping Line	Accepts cargo booking from agent and issues Export Booking Reference to agent.		No change
Shipping Line	Issue release instruction for specific container type to empty storage park		No Change
C&F Agent	Processes CTO and presents to DCT	Data capture export booking details into computer. (CTO will be replaced by EDI receipt of booking reference from shipping line). Return CTO to agent if Road. Pass CTO to rail planner if rail after removing top copy for invoicing.	Data captured entire details of where empty container had to be picked up. Container had to be packed, details of which ship container was for and which port it was going to captured into computer. Full CTO back to agent if Road. Top copy taken for invoicing purposes if rail and remaining copies to rail planner.
Receipt by Road			
C&F Agent	Contracts trucker and hands him CTO		
Trucker	Collects container from empty park using export booking reference number. Takes container to be packed and moves to terminal.	Container number known for first time and endorsed on CTO	No Change
DCT	Process truck in gate with containers	Capture details of truck and containers using radio linked hand held computer.	Only container details captured at gate
DCT	Process documents at A Check	Link container numbers to individual export booking references. Computer reserves container position according to area and segregation rules specified by planner. Hand Truck Instruction Document to driver.	Driver presented copy of CTO. Details verified in computer against what was captured at booking. Computer printed card for driver with tower number and stack allocation as input by yard planner. This card handed to driver

DCT	Verify correct stowage of containers and close vessel call	Ship planner in the correct stowage from list plan returned from ship. Ship planner enters all information into ship's computer and closes ship call. Computer use notes the train and details of all customer loads dland sh charged by shipper are time set paper listings associated at time han not EDI communicates.	When ship is complete ship planner prints final copy of box plan for ship and final list of containers loaded on agent. No electronic tracking was possible so shipping lines had to capture all information from paper document into their computer system.
DCT	Pre advise ship agent of time of completion		No change
Shipping Line	Arrange sailing of ship with marine services		No change
Marine services	Sail Ship		No change

DCT	Plan loading of ship		
	Create loading orders for containers to be stowed by shipping line	Paper based stowage instructions provided	
	Input stowage instruction into ship planning & input into received via TDI	Manual input into ship planning tool	
	Run various planning iterations to obtain optimum balance between ship stability requirements and container shuffle moves in stack	No Change	
	Lock final stow sequence and forward copy of plan to shipping line co-ordinator for approval (TDI)		
	Stow approval sent; queries advise to Traffic Dispatcher	Paper work-sheets printed after planning complete	
	Co-ord operation of load bay plan and send instructions to operations and ship's command	Paper copies of bay plan, printed and faxed to shipping line for checking	
		After approval from Line paper worksheets issued to staff	

DCT	Load Ship		
	Traffic Dispatcher links resources to loading operation and releases work queues	Straddle drivers use copy of worksheets to select containers from stack	
	Computer instructs straddle carriers to uplift container in sea stack and deliver to designated cranes in sequence	Straddle driver reports each container by radio as he uplifts	
		Tower staff endorse on worksheet and update computer when there is time	
	Controller tallies containers on board ship using hand held radio data terminal	Controller at crane manually tallies containers using worksheet	
	Tallyman on board ship manually confirms actual stowage position for each container on bay plan	No Change	
	Bay plans returned to ship planner on completion of each section	No Change	

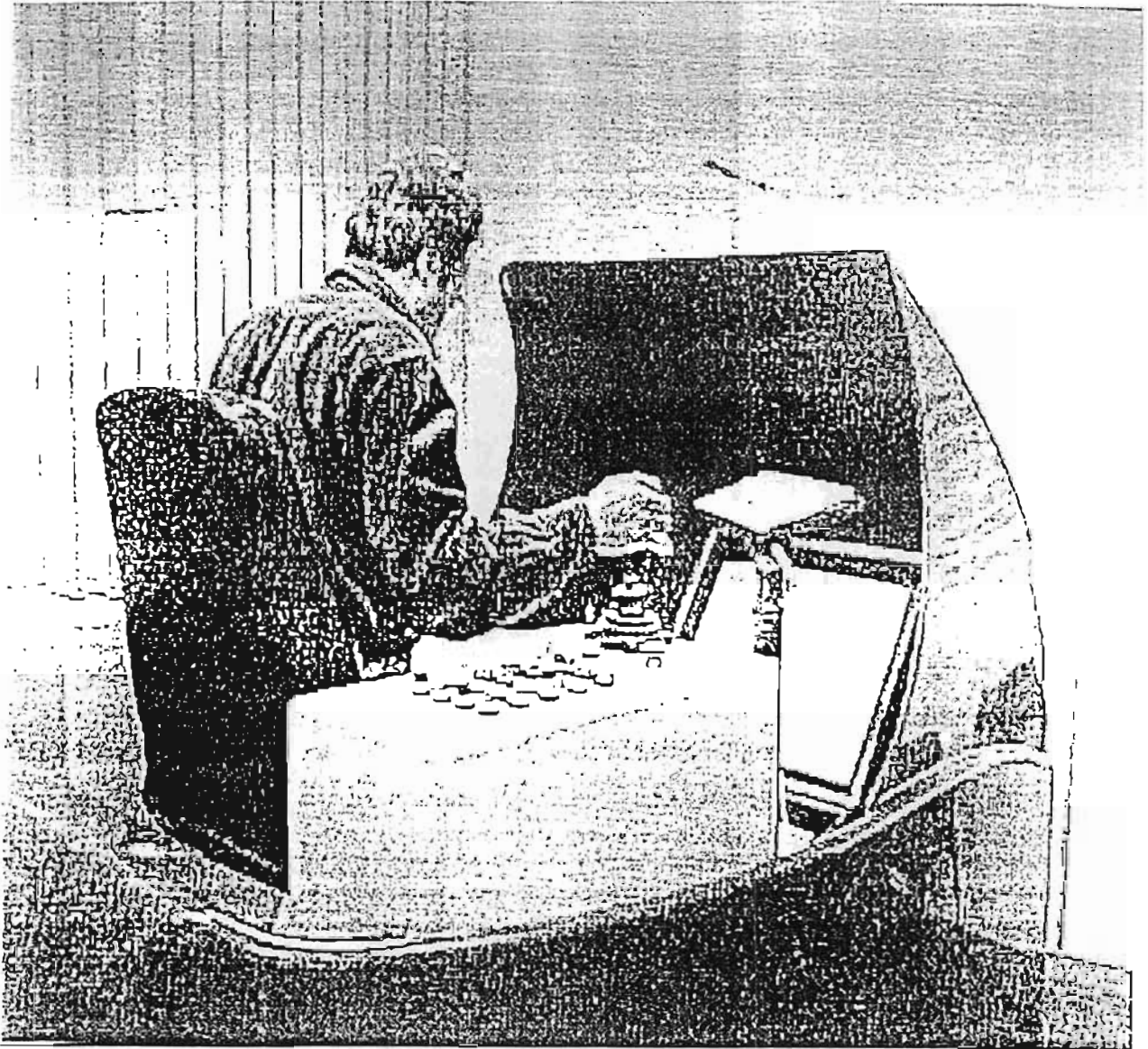|		
	all available export units on terminal and forward to shipping line stowage co-ordinator	Paper transfer on 1:1)1
Shipping Line	Confirm details of containers to be shipped and provides stowage instructions indicating specific sections of the ship to be used for each discharge port plus specific stowage positions for all reefer / hazardous / off standard containers.	Paper list checked and returned (impossible to check correctly in time allowed if many containers)

| DCT	Record details of containers on train in shunt yard	Checker with hand held data terminal walks train capturing container#, wagon# and position on wagon.	Checker withdraws all truck labels in shunt yard and creates a manual list of containers and rail wagons.
DCT	Plan off load of train	Rail planner extracts details of all containers on train, after computer has linked export booking details. Rail planner updates computer with storage stack instruction if no export information available. Computer autoplans train off load. Work queue made available to Traffic Dispatcher.	Rail Planner creates a dummy train in the computer and verifies that all containers have export instructions. Details of all containers to yard planner who must ensure sufficient space has been allocated for them. Rail planner prints discharge worksheet and tracking cards for each container with stack addresses.
DCT	Off load train	Traffic Dispatcher links resources to work queue and releases work queue Computer instructs haulers to move to crane Controller tallies containers off train on to hauler. Computer instructs hauler to move to correct off load transfer area Hauler announces arrival in transfer point to computer Computer instructs straddle to stack container as per export stacking area and rules input by Yard Planner Straddle carries out task and updates computer. Computer instructs hauler to move to another area for off load of 2nd container or back to rail crane.	Controller at rail manually tallies containers off train using worksheet and hands the correct tracking cards to the hauler driver. Hauler driver reports to tower with tracking cards Procedure after this is same as for stacking of export containers from road trucks. Hauler returns to rail crane
	Load Ship		
DCT	At stack closing (ETA-12hrs) extract details of	Paper transfer or EDI	Paper list supplied

|		Forward invoicing copy of CTO, with container number, to Portis.	No Change
Trucker	Proceed to off load point and report to controller.		Card with stack row handed to tower staff and sent to top floor after endorsing parking bay number.
DCT	Instruct truck to park in specified bay	Capture truck visit# and bay# in computer Computer verifies work to be done for that truck visit and issues instruction to nearest available straddle carrier. Straddle carrier executes move and updates computer	Tower top staff take card and instruct straddle to stack container Straddle stacks containder and radios position to tower Tower record position on card and update computer later. SERIOUS DELAYS IF ROW ALLOCATED IS FULL.
Trucker	Drive to exit gate		
DCT	Process truck out of gate	Data capture details of truck and any containers using hand held terminal Computer confirms details are correct Trucker referred to A Check if any discrepancy . Truck departs terminal.	No process out of gate recorded as truck is now empty.
	Rail Export move		
C & F Agent	Process documentation as above.	CTO's to rail planning	No Change
Spoornet	Load export containers at inland terminals	For containers loaded at Inland Customs bonded terminals only, interface details of export booking references per container and wagon numbers to COSMOS computer.	Spoornet and Portnet shared computer system previously
Spoornet	Advise arrival of export traffic in shunt yard	Phone call	No Change

Appendix 7

Driving Training.
All Courses given both in theory and practice

Folklift
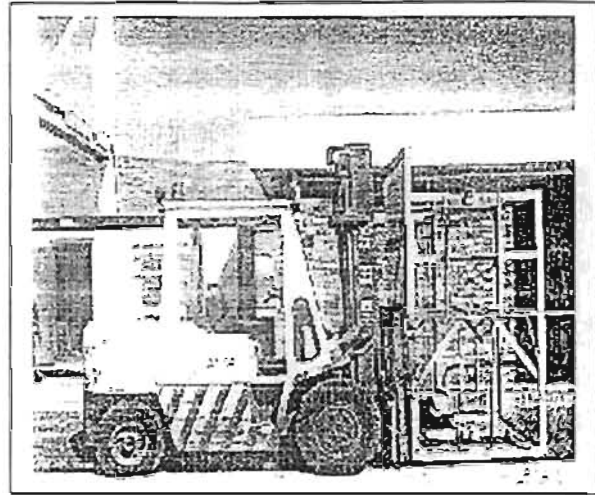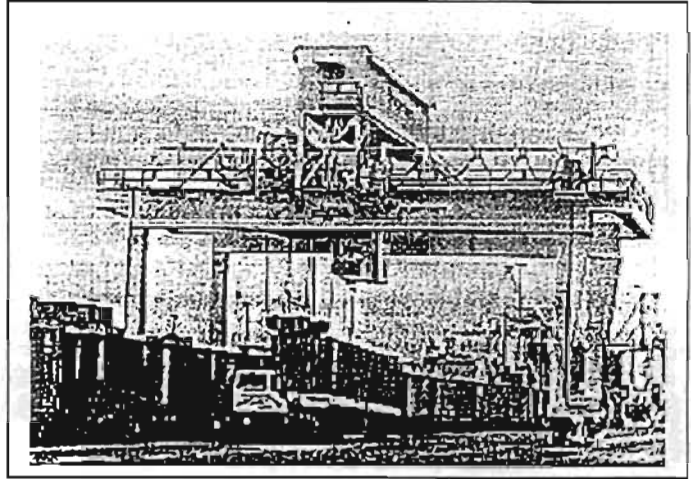

High Reach stacker
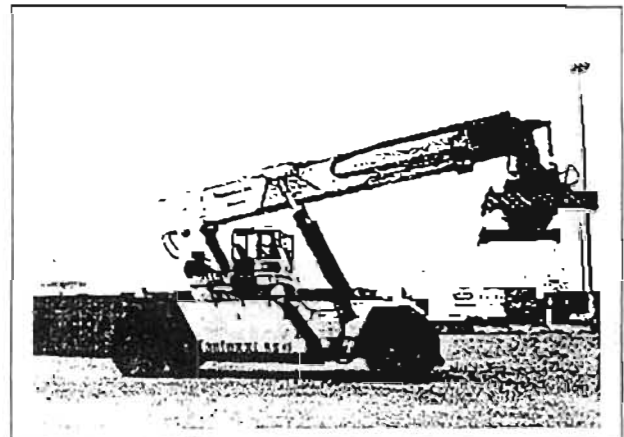
Pelican Sweeper

Appendix 8(b)

Road Rail Transfer Crane

Description

The road / rail transfer crane is designed to off load and load containers onto rail and road trucks.

Container Gantry Wharf Crane

Description

The container gantry wharf crane is designed to load and off load containers from ships and barges.