

Industrial Restructuring and Related Labour Issues in Korea

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I Introduction

In recent years, the world economy, and especially the industrially advanced capitalist economies, have been experiencing an historically significant process of restructuring in which microelectronics technology has played a key role. This new technology has changed the economies of scale both in mass and specialist production, enabling manufacturers to reach the break-even point with a smaller number of products. At the same time, it has also given rise to what has been called 'economies of scope', in that its high flexibility has made it possible to introduce a previously unknown variety of products in large production runs. Moreover, by decreasing the proportion of direct labour costs in total business cost, automation erodes the advantage of low labour cost and makes possible the manufacture of formerly labour-intensive goods in developed countries [Rada 1980].

The application of information technology to organisation is likely to reinforce the management, marketing and coordination superiority of developed countries by increasing efficiency and lowering the cost of recording, processing and retrieving information. Microelectronic technology encourages further industrial and service concentration, as well as vertical integration. Consequently, changes in market structure can be observed in many sectors and many resources are being utilised more efficiently.

It is crucial for the international competitiveness of the developing countries, therefore, that they should choose the new technology efficiently and diffuse it effectively. Since new technology fundamentally changes the existing labour process, this could raise many employment problems, for example with regard to job opportunities, skill demand, work content, culture, organisation and industrial relations. This short contribution focuses on some labour issues that may arise from the extensive introduction of microelectronics technology into Korean industry, and concludes with some briefly stated policy alternatives.

II Restructuring in the Korean Economy: Transition to Knowledge-Intensive Industries

The Korean economy is expected to undergo considerable structural changes in the next decade. China, with much lower labour costs, is emerging as a formidable competitor in traditional labour-intensive industries. Likewise, competition from other developing countries, both NICs and the latecomers, is expected to intensify. In the face of this rapidly changing international economic environment, continuous advancement and adjustment of the industrial structure, based on changing international comparative advantage, will take place in Korea during the coming decades.

Extensive application of technological innovation is indispensable to this, especially if exports are to continue growing. According to the Development Plan, the machinery, electronics, and automobile industries are projected to grow at an annual rate of 10.3, 14.3 and 15.1 per cent respectively, between 1982 and 2000. This is far above the average growth rate of the overall manufacturing sector (8.2 per cent) during the same period. On the other hand, the importance of textiles, iron and steel and other industries (garment, food processing, etc.) will decline. The textile industry, for example, which used to be Korea's leading export industry, is expected to grow at a rate of only 4.7 per cent per year between 1981 and 2000, well below the average growth rate of the overall manufacturing sector.

If Korea chooses to concentrate on knowledge-intensive industries for international competitiveness, it is unlikely that it will be able to avoid employment problems arising from the extensive use and application of microelectronics and computer technology, or more specifically, micro-computer technology. So far in Korea, this has not been a major issue, due to the fact that rapid economic growth over the past 25 years has provided an expanding labour market and sufficient opportunity for the labour force to be transferred from old jobs to new ones. This change has predominantly taken place within individual enterprises. However, in view of inevitable changes in industrial structure that are foreseen in the next decade, Korea will face the problem of interaction between technological innovation and employment.

III Impact of New Technology on Labour Demand

(a) Skill Polarisation and Employment Segmentation

In many cases the transition to systems-based technologies involves changes in the nature of work and a reduction in the skill component in work. Activating the small-batch potential of new technology and operating a flexible, trust-based work organisation requires a highly and broadly skilled workforce, as shown by many Japanese firms. In these firms, microelectronics, associated with automated manufacture, has resulted in a reduction in certain job skills such as machining, and an increase in other skills, such as programmers and maintenance technicians. New, high-level electronics and software skills have been required, while some craft skills have been made largely redundant. Overall there has been a great deal of craft deskilling, with an increased requirement for on-the-job training. It has also imposed the need for management to acquire higher level technical skills. All this has led to a decrease in direct labour and an increase in indirect labour.

Additionally, the introduction of microelectronics may lead to a polarisation in employment between semi-skilled operatives on the one hand and highly skilled technical staff on the other, with a disappearance of employment for skilled manual workers.

(b) Expected Changes in Korea's Labour Market

In the absence of comprehensive retraining schemes and effective labour market adjustment systems the adoption of microelectronics devices is likely to increase the mis-match between skills and job opportunities. Because of this, and because of their employment-displacing effect, growing objections from both workers and management might significantly slow down the rate of adoption of new technologies.

There will be considerable changes in skill demand, reflecting the expected rapid industrial restructuring of the Korean economy in the next decade. Reflecting rapid change in industrial structure in Korea, the occupational demand for manpower is also expected to change considerably. Professional, technical and managerial manpower is expected to show greater demand growth than any other occupational category. Within that category, the demand for multidisciplinary engineers will increase most rapidly. Even within production jobs, the growth of manpower demand will be very uneven across different skill categories. For example, demand for machine and equipment operators, electronic and electrical workers and transportation equipment operators is expected to rise at a faster than average rate.

Thus, it is unlikely that Korea will be in a position to fully utilise microelectronics unless there is a well developed skills-and-employment adjustment infrastructure. The problem is whether the current education and manpower training institutions in Korea are efficient, flexible, and effective enough to meet those changes in skill requirement with adequate speed.

(c) Quality of Education

In this regard, a special emphasis should be directed to the colleges of science and engineering. It is those colleges that will play an increasingly important role in providing well-trained engineers and scientists. To be more specific, the enrolment quota of science and engineering students should be raised, while simultaneous improvements are made in the quality of education in science and technical fields. Also, more attention will have to be paid to multidisciplinary training, with mechatronics substituting for mechanical and electrical engineering. The level of higher educational achievement in Korea has already reached that of major developed countries. The number of college students per thousand population was 25 in Korea in 1984, higher than Japan and West Germany. Therefore, the problem in higher education in Korea during the coming decade will be one of quality rather than quantity.

Additionally, policy should focus on how to develop a close and direct link between the changes in manpower demand of the economy and the changes in manpower supply of educational institutions. Also the content of education will be an issue, with the need to make it more relevant and responsive to the rapidly changing skill requirements of the economy.

(d) Rationalisation of Vocational Training Systems

The traditionally passive role played by the private sector in vocational training will be one of the major constraints on skill formation in the coming decades in Korea. At least in terms of quantity, private vocational training has played an important role in Korea during the last decade. In 1974, a special law for vocational training was enacted: over 40 per cent were trained through private institutes, and private vocational training was mostly carried out by private enterprise at the factories in the form of in-plant training. In terms of quality, however, the impact of the law remains a real concern. Many private enterprises have organised in-plant training purely to comply with the law, so that the programmes do not reflect the changing skill needs of their own business.

It is the private enterprises that know best what skills they really need and what to do about the skill shortages they face. In a world of rapidly changing technology and competition, it is private enterprises that enjoy easy access to first-hand information on

these changes. Therefore, the excessive government zeal which tends to undermine the private sector's own efforts to develop manpower should be diminished, and private initiatives in skill development should be stimulated instead. On the other hand, intervention by public authorities is likely to be required in the training field, in areas not covered by the educational system, apprenticeship schemes, and training provided by firms and by other institutions. Public authorities in most industrialised countries provide at least some, and in many cases a wide variety of schemes for training the young and for retraining older workers.

If the business environment continues to become more competitive in the future, then the rationalisation of personnel management — including skill development at the firm level — will require greater voluntary investment in skill development by the private sector. It will also need to promote a sense of security in the work-force which will lead to good industrial relations and a positive attitude towards technological change.

(e) Modernisation of Employment Service Systems

Currently, both public and private employment service activities in Korea are too poorly organised and underdeveloped to play a significant role in the job matching process. The absence of a general unemployment insurance scheme and the high cost of obtaining labour market information inevitably increase the frequency of so-called on-the-job search activities in Korea. The high level of on-the-job search activities is one of the reasons why the average labour turnover rate is relatively high. This causes efficiency losses and discourages firms from offering job training or fostering attitudes of career advancement. Thus, an effort to modernise the various employment service programmes in order to improve the job matching process will be required to reduce on-the-job search activities and frictional unemployment.

But, ultimately, Korea has to establish a general unemployment insurance scheme in the near future in order to resolve the skill mismatch and employment segmentation caused by rapid industrial restructuring. This scheme should embrace not only the job matching process but also the retraining programmes for labour which has been displaced.

IV New Forms of Work Organisation

(a) Needs for Organisational Change

In Taylorist and Fordist systems, workers are seen as thoughtless commodities and exchangeable parts; their job is to follow orders and the dictates of the machine rather than to exercise any initiative or creativity [Kaplinsky 1988]. But the current pattern of technical innovation is aimed at enhancing productivity, flexibility and quality. In order to match this technological innovation, work organisation should

be designed to be more meaningful. Increasing automation can cause restructuring of authority and control relationships in the organisation. Thus the appropriate organisational locus of effective human control of the productive process is a key issue in policy design.

In Korea, workers are well trained for a traditional hierarchical and passive culture, and management has become accustomed to enjoying its prerogatives. Particularly in the early stage of economic development there was an authoritarian labour-management relations policy. However, it seems clear that this authoritarian and paternalistic culture will face additional stress in Korea in the coming decade. The recent labour demonstrations show that labour's demands are not only for wage increases, but also for union autonomy, fair labour practices and liberalisation of management's authoritarian style. It is in the labour process itself that fundamental changes are needed during the introduction of new technologies in Korea. The productivity gains in the developed countries have come from the adoption of new work-practices and organisational changes, rather than from the purchase of expensive imported equipment [Hoffman 1989].

(b) New Technology and Work Organisation

Work organisation is closely linked with technology, just as technology conditions, and is in turn conditioned by, the design and the variety of products. Microelectronic circuitry can be used for rationalisation inside the traditional mass production paradigm to save labour and to reinforce and extend the separation of conception and execution. But it can also be used for flexibly specialised small-batch production, with its high versatility making it possible to produce customised quality goods at a lower price.

Depending on whether new technology is used for further automation of mass production or for flexible manufacturing, it tends to be associated with very different forms of work organisation. Exploitation of the new technical potential for flexibility seems to be enhanced by a form of work organisation in which retooling and maintenance is to a significant extent delegated to machine operators. Thus technical change has raised questions on the traditional differentiation between production and maintenance functions and between direct and indirect work, and the distinction between what have traditionally been termed blue collar and white collar workers appears to be breaking down, with an increasing blurring of the borderlines.

(c) Socio-technical Systems

The development of new socio-technical systems is related not just to product strategies but also to industrial relations, and in fact work organisation

seems to constitute an important mediating factor between the two. A flexible socio-technical system of work — with a decentralised and intelligent, non-Taylorist work organisation matching an advanced flexible technology — is an important precondition for the efficient manufacturing of customised quality goods. It also increases satisfaction at work and two-way communication, removing some of the causes of the discontent with traditional factory organisation, and thus contributes to high motivation of workers and cooperative relations between management and the workforce.

Moreover, to the extent that a non-Taylorist work organisation is a trade union objective in its own right, it may be imposed on management by a strong union in the independent pursuit of worker interests, and this may then leave management no alternative but to search for a product strategy for which an intelligent work organisation is an asset rather than a liability. Additionally, the introduction of work teams as semi-autonomous groups with delegated responsibilities for the flow of production and the allocation of tasks have been very successful in reducing worker discontent, which previously resulted in high turnover and unsatisfactory product quality. All this is evidenced in the Swedish motor industry. Also, a flexible work organisation with broad job descriptions and multi-tasking is well suited to accommodating change in an internal labour market, as demonstrated by the Japanese system.

V Industrial Restructuring and Cooperative Industrial Relations

(a) Throes of Transition to Modern Industrial Relations

Spurred by the government's democratic reform, a series of violent labour uprisings swept over Korea in the autumn of 1987 and the spring of 1988. The average number of labour strikes in Korea in 1987 was over ten times that of the previous year. This recent surge of unrest raises serious issues for the Korean economy. The key issues for the continuation of Korea's economic development are how to improve labour relations and how to increase productivity. During the period of rapid technical innovation, labour-management cooperation is most important for the efficient implementation and effective diffusion of new technology. Industrial restructuring using new technologies would create many problems if existing industrial relations were maintained. Without the cooperative and voluntary participation of workers, it is difficult to make a successful transition.

(b) New technology and trade unions

The stance of unions toward new technology constitutes a very important aspect of industrial

relations. But equally important are other factors, such as the impact of new technology on the unions themselves and on the attitude of labour towards unions, and the impact on the relationships between various groups in the workforce or company. None of these groups is necessarily defined in terms of union membership.

The attitudes of specific unions towards technological change reflects experience in their industries. Thus attitudes tend to be positive in expanding industries, irrespective of the extent of the technological change being introduced. Union attitudes also tend to reflect the perceived attitudes of management towards employees. Positive management attitudes are met with reasonable and generally cooperative union attitudes; negative management attitudes engender hostility and protectionism. Unions rarely oppose technological change, provided satisfactory adjustments are negotiated in respect of adversely affected workers. Their position is typically defensive and reactive, and rarely anticipatory. This is a problem, since reactive bargaining usually takes place under the pressure of ongoing developments.

New technology also acts to the benefit of some groups and to the detriment of others. This creates potential areas of conflict within the workforce. The groups in conflict can involve those working with the new and the old technologies, different skill levels, different crafts or specialisation and different functions. The cause of the conflict is usually relative status and earnings or, more directly, the fact that job enlargement and improvement for one group may occur at the expense of another group.

Therefore, it is necessary for trade unions and workers to have access to all possible information at the earliest possible time prior to the introduction of new technology. This may give them the chance to anticipate and prepare for change. Most of all, it is important that trade unions should be involved in planning from the start, and at all levels of policy making. Also, particularly in Korea, government functions have to be curtailed from intervening prematurely in labour-management relations and influencing and controlling labour union affairs. The government function should be strengthened in such fields as providing a fair and just legal framework in which both parties interact freely and autonomously, based on more equal bargaining power.

VI Summary and Conclusion

In my judgement, industries and countries which opt for short-term job protection by resisting new technology will suffer greater job loss in the long-term through lack of international competitiveness. The Korean economy is undergoing very rapid industrial structural change toward a technology- and capital-

intensive mature economy. These new technologies might necessitate a fundamental change in the traditional labour process and in the structure of the labour force. Thus, without considering proper counter measures at the firm and government level to maintain manpower supply and to modernise industrial and labour relations before, during and after change, long-term economic growth prospects may be retarded in the future. As Korean industry becomes more advanced, workers' voluntary cooperation could play a more important role in productivity enhancement and implementation of changes, and at the same time workers' neglect or

uncooperative attitude could seriously damage Korea's competitiveness. In other words, the social cost of industrial unrest will tend to rise substantially as the industrial structure becomes more sophisticated and capital-intensive.

The future success of industrial restructuring in Korea will to a great extent depend on whether the government and industry recognise and resolve the socioeconomic problems which accompany the new technology and can succeed in coopting the unions and workers as reliable and responsible social partners for the implementation of change.