

Foreign Labor Developments



International experiences with technological change

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Most industrial nations are concerned with the impact of microelectronics and technological change on the work force. In many instances, reports from national commissions, such as the Canadian Task Force on Microelectronics and Employment and the Swedish Computer Commission, have attempted to identify and address problems that can arise when new technology is introduced. These reports often lead to legislative solutions to the problems of new technology that are consistent with the larger role played by government in many countries in shaping the conditions at the workplace and the role of labor and management.

In countries with collective bargaining systems similar to the United States, there is evidence of growing reliance on some governmental mechanisms. For example, the Canadian Task Force on Microelectronics and Employment suggested the establishment of mandatory labor-management technology committees in all places of employment with more than 50 employees. These committees would "deal with issues such as training, retraining, redundancy, work-sharing, productivity improvements, and other matters related to technological change at the workplace."¹ A review of the pattern in most industrial nations reveals varying blends of governmental legislation and collectively bargained labor-management agreements.²

This reflects not only the tendency to involve government in labor-management relations, but also the relative size of the unionized labor force and the power of labor political parties. The percentage of the labor force which is unionized varies considerably among industrialized nations: United States, 22 percent; France, 28 percent; Japan, 33 percent; Germany, 42 percent; United Kingdom, 55 percent; Australia, 56 percent; Belgium, 79 percent; and Sweden, 83 percent.³ Most of these nations have a labor party which tends to wed collective bargaining strategies to political and legislative agendas. For example, the Swedish Labor Feder-

ation, through the Social Democratic Party, has been successful in gaining governmental approval for legislative changes concerning job security, labor market policies (including advance notification and government subsidies to assure full employment), worker representation on corporate boards, joint consultation between management and labor (co-determination), empowering workers to improve work environments, and the establishment of wage earner funds to give workers gradual ownership and economic influence in the enterprise.⁴

There are many variations in the relative importance of collective bargaining versus legislative approaches, but even in England, Canada, or Australia, where there are strong traditions of deferral to bargaining, in recent years, the government has been active on issues of worker participation and technology.⁵

Adversarial relations

England. Concern with technology was already well developed in England in the 1970's, prior to the resurgence of interest in the United States. Primarily, union-initiated proposed technology agreements with employers dealt with the basic questions of advance notification, job security, training and retraining, worker involvement in technological change, and design and implementation. However, "while unions in Britain have generally recognized the need to extend the scope of collective bargaining in order to influence the introduction of new technology, few have succeeded in achieving this end."⁶ The reason for this lies largely in the tension over the short-term strategy of worker involvement in planning. In 1982, a group at the University of Aston examined a large number of English technology agreements and collective bargaining contracts; they concluded that, "To date, it is the defensive/reaction strategy that has predominated."⁷

Compounding the problem today are the troubled economic situation in Britain and the deterioration of labor relations in that country. High unemployment and bitter labor-management disputes overshadow cooperative developments and the substantial number of successfully negotiated agreements which provide for joint efforts and worker involvement in the change process. While the language in many of the agreements is suggestive of what should be implemented, such agreements will work best in a full

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employment economy and one in which the spirit of cooperation prevails—features both lacking in England today.

Australia. The Australian situation has paralleled that in many other industrial countries. In 1980, the government established the Committee of Inquiry into Technological Change in Australia. The committee made proposals to reform aspects of Australia's industrial relations system in such a way as to provide incentives for unions and employees to cooperate with employers in the introduction of technological change. However, the reality since has failed to see these fully materialize. The overall picture is characterized by leading industrial relations analysts in Australia:

... although governments, employees and unions have agreed about the need to introduce technological change without causing undue social and economic hardship, this consensus appears to have had little impact on the manner in which changes have been implemented. The majority of employers have introduced new technology without consulting their employees in advance; most unions have been ill-equipped or unprepared to assume a more assertive or interventionist role; and industrial tribunals, by and large, have been unwilling to interfere with managerial rights or prerogatives in this field. These factors have exacerbated conflict in the workplace as, in many cases, traditional patterns of work have been upset, wage relativities have been disturbed and job security has been decreased.⁸

As in the case of England, Australia has had a number of negotiated technology agreements on the primary issues of job security, work organization, work environment, and methods of work involvement. The Australian Council of Trade Unions, just as the Trades Union Congress in England, has passed official statements on technology, disseminated model contract clauses for unions, and conducted technology training for its membership. Nevertheless, the conclusion stated above illustrates the reason for the gap between the ideal and actual practice.

Canada. The U.S. industrial relations system shares some features with those of England, Australia, and Canada. These are traditions which have created a decentralized union structure with a large number of separate unions and individual negotiating situations. It is a system dependent on free collective bargaining with modest governmental intervention outside broad framework laws, and an ideology which tends to emphasize traditional managerial prerogatives and conflicts of interest between management and labor. Canada's experience is especially relevant for the United States because of geographical proximity, the role of U.S. firms in the Canadian economy, and the linked bargaining across the border (international unions in this country typically include Canadian affiliates).

Provincial laws on work environment have been patterned, in part, after Scandinavian models. For example, joint labor-management health and safety committees were mandatory in Saskatchewan in the 1970's, during which a climate of worker participation was cultivated.

In the Canadian Postal Service, where labor relations have been erratic in recent years, the following agreement over technological change notification was negotiated:

... the Employer agrees to notify the Union as far as possible in advance of his intention and to update the information provided as new developments arise and modifications are made ... the Employer shall provide the Union, at least 120 days before the introduction of a technological change, with a detailed description of the project it intends to carry out, disclosing all foreseeable effects and repercussions on employees.⁹

A 1-year minimum advance notice currently is specified in the contract negotiated by Saskatchewan Telephone and Communication Workers of Canada, with a range of other time periods given in various contracts. Following notice by the employer to the union, the next step defines the role the union and workers will take in decisions affecting technological change. Many contracts spell out the establishment of joint labor-management committees to consult, plan, and execute programs of technological change, including issues of relocation and retraining of workers. Recently, the National Association of Broadcasting Corporation agreed that, "No employee who has completed his probationary period as of the date of execution of this Agreement will be laid off or suffer a reduction in salary during the term of this Agreement because of the introduction of new or modified equipment and/or associated changes in methods of operation."¹⁰

Involvement of the work force in the design and implementation of new technology has been a significant part of the Canadian labor relations scene in recent years, especially in the case of office automation and video display terminals (VDT's). The Canadian Union of Public Employees and the United Way of the Lower Mainland, British Columbia, have a contract which stipulates:

The selection and installation of equipment shall be done in consultation with the affected employees. The installation shall also involve consultation directed towards assuring that all 'ergonomic' factors are dealt with satisfactorily.¹¹

The Newspaper Guild Local 115 and Suburban Press, Ltd., have a memorandum of agreement which states that "If an employee has been operating a VDT in the final two hours of a shift, the employee shall not be required to operate a VDT less than 30 minutes before leaving the plant."¹² Other provisions in this agreement deal with inspecting each VDT for radiation emissions. Several Canadian labor agreements, including those which cover the Newspaper Guild and Communications Workers, specify that women workers during pregnancy may have the option of being rotated onto a non-VDT job. This last provision is controversial because scientific data have not conclusively demonstrated danger during pregnancy caused by working on a VDT. However, the concern has been pushed by workers and some of the Canadian unions who have won such agreements from employers. An equivalent level of concern exists in the United States and a similar provision for pregnant women is being pursued in some contract negotiations.

European Community: joint efforts

There are considerable variations in the pattern of labor relations abroad. Nations in the European Community have agreed to some coordinated policies which have influenced various aspects of cooperation, including sharing corporate economic data with the workers, and worker and union involvement in work organization decisionmaking. As of 1984, the European Community is “. . . examining with both sides of industry the best way and at what level to introduce basic principles on the information and consultation of workers affected by the introduction of new technologies, while taking account of practices and procedures already applied in the Member States.”¹³

In the past, many European unions have been more aggressive than those in the United States; this is particularly true for the issues of advance notification, joint participation in workplace design and the introduction of new technology, protection of jobs and programs for relocation, retraining, and other means of cushioning the effects of job loss.¹⁴ At the same time, the industrial relations climate in much of Europe has been supportive of some participative and joint labor-management approaches to addressing issues of technological change. Both management and labor have generally agreed that the new technology offers an excellent opportunity for work redesign so as to eliminate boredom and monotony and facilitate the creation of semi-autonomous work groups with greater worker influence. “The technology-optimistic attitude, which was distinctive of the years of prosperity up through the sixties, could be found in all European countries; technology was unequivocally seen as a, and often the most important, remedy for securing full employment and greater welfare for union members.”¹⁵ The economic crisis of the later 1970’s and early 1980’s has altered some of the earlier optimistic viewpoints and a more recent opinion suggests that, “There is considerable evidence that automation has outpaced the ability of managements and trade unions to control, much less to optimize, its [technology’s] implications for quality of work life, at least for very large numbers of enterprises.”¹⁶

A recent OECD study revealed: “A common theme of many of the reports is that new technology can yield great benefits. The question, who receives the benefits and who carries the burden of the costs?”¹⁷ The report then presents as a possible model the Norwegian Data Agreement which provides for workers affected by the new information technology to be informed and consulted.

Historically cooperative relations

Norway and Sweden. The Norwegian developments are seen as an integration of the legislative approach to improve the work environment and the negotiation process involving unions and employers to implement particular means whereby workers and their representatives have authentic

influence over the introduction of new technology and work organization.¹⁸ Parts of Section 12 of the 1977 Norwegian Work Environment Act are very informative:

- *General requirements.* Technology, organization of the work, working hours and wage systems shall be set up so that the employees are not exposed to undesirable physical or mental strain and so that their possibilities of displaying caution and observing safety measures are not impaired.

Conditions shall be arranged so that employees are afforded reasonable opportunity for professional and personal development through their work.

- *Arrangements of work.* The individual employee’s opportunity for self-determination and professional responsibility shall be taken into consideration when planning and arranging the work. Efforts shall be made to avoid undiversified, repetitive work and work that is governed by machine or conveyor belt in such a manner that the employees themselves are prevented from varying the speed of the work. Otherwise efforts shall be made to arrange the work so as to provide possibilities for variation and for contact with others, for connection between individual job assignments, and for employees to keep themselves informed about production requirements and results.
- *Control and planning systems.* The employees and their elected union representatives shall be kept informed about the systems employed for planning and effecting the work and about planned changes in such systems. They shall be given the training necessary to enable them to learn these systems, and they shall take part in planning them.¹⁹

What this language specifies is an obligatory information-sharing process whereby workers cooperate with management in advance of the introduction of significant changes in technology, work organization, and job design. It is predicated on research which indicates that a cooperative approach will indeed continuously improve the work environment. It is a perspective which has had a good deal of impact on the thinking of practitioners and policymakers throughout the world.²⁰

It would be a mistake to judge the Norwegian or Swedish approaches as being unqualified successes; however, they are interesting models of how the issues of work organization, technology, and labor-management relations have been addressed. In the Norwegian case, the broad Work Environment Act obliges employers to consult with workers and their representatives and sets up a joint approach to planning. In Norway, with more than a decade of experience, professional computer and technology experts serve as consultants for large unions who are planning a better working environment and actively and competently engage with management in such work-systems development.²¹ In Scan-

dinavia, the unions have endorsed the new technologies, but they have actively worked on their own research and development with the aid of outside experts. For example, the Nordic Graphic Arts Workers Union Confederation has been designing a model high tech work environment, using microelectronic graphic arts equipment and computer-aided design. With consultants from the Swedish Center for Working Life and others, they have worked out the best situation from a worker viewpoint, while satisfying managerial and organizational goals of cost effectiveness and productivity.²² In other instances, Swedish unions, under the 1976 Co-determination Act, have gained an employer commitment to actively involve workers in the planning of new technology systems. For postal social insurance office workers, it was clear from the beginning of the work system design that their concerns, which included the quality of service to the clients with whom they interacted, would be taken into account.²³

In a 1979 agreement, the Swedish postal workers used the introduction of new technology and work reorganization as a means of improving the work environment. Approximately 4,700 women work in the central post office in Stockholm, and the technological and operational changes initially proposed threatened between 500 and 600 jobs. The union and management agreed on the goals of improved working environment, improved content of work, preserved level of employment, and development of new products and improved service to clients.²⁴

In 1982, an "Agreement of Efficiency and Participation" was signed by the Swedish employers' federation (SAF) and the blue-collar (LO) and white-collar (PTK) union federations. It recognized the need for efficiency and productivity if Swedish enterprise was to be more competitive in the international markets; it also detailed some of the means of implementing technological change to achieve these goals. The paragraph dealing with technical development states:

Item 1. General direction. The parties are agreed that day-to-day as well as more far-reaching technical modernization offers many opportunities that must be taken to enable the company to survive, achieve success and therefore also safeguard jobs and employment. Capital expenditure makes it possible to improve productivity as well as creating opportunities to introduce new production systems, utilize modern technology, develop the expertise and skills of employees, and thereby increase the competitiveness of company.

Item 2. Stimulating work. In the event of technical change, a sound job content shall be the goal, together with opportunities for the employees to increase their skills and accept responsibility for their work. The knowledge of the employees should be stimulated together with their ability to cooperate with and have contact with their colleagues.

Item 3. Major changes. When technical change that involves major changes for the employees is being planned, the trade union organizations shall participate. Such participation shall take place in accordance with the provisions in [sections 7 and 8].

The employer shall describe the considerations underlying the new technology, and the technical, financial/economic, work environmental, and employment consequences that can be foreseen and possibly make proposals for appointing project groups.

Item 4. Training information. It is important that the employees are given opportunities for further development of their vocational expertise and skills. The company shall make available as early as possible training for the new jobs that technical change will involve. Such training shall be provided at the expense of the company and on unchanged pay and employment conditions.

According to the authors of the document, "LO, SAF, and PTK are in agreement about the need for increased knowledge and responsibility and the need to support those affected by technological change."²⁵

A number of work redesign experiments were initiated in Norway and in Sweden in the late 1960's and early 1970's. Many of these cases have been widely discussed. What is more critical is to see what *post hoc* assessments tell about the patterns of cooperative labor-management relations as applied to changing technology and the workplace. A leading analysis by the Swedish Employers' Federation concludes:

If we glance quickly at the significant developments of the 1970's, we are struck by the fact that a large part of the evolution of our thinking regarding work organization and job content has arisen in connection with technological changes. In many cases, new organizational principles have scored genuine breakthroughs only when ways have been found to change material flows, machine grouping, work environments and design of factories.

An important explanation of why the demand for better jobs could have such a large concrete effect on production methods in the 1970's is that it is only recently that new demands for job satisfaction and job content could be met with demonstrably superior technical measures. And *it is only when practitioners out in the factories can be involved in these questions that technology can be changed in such a way as to provide new types of work organization and job content* (emphasis added).²⁶

The Swedish process is designed to mutually benefit all parties. Swedish workers and unions have supported the application of the most advanced technology; in fact, Sweden leads the world in *per capita* use of robots today.²⁷ The system has allowed employers to increase efficiency and productivity, and thus helped maintain their competitive role in such world market industries as auto production and finished steel products. Employees have been involved in planning changes in the work environment and have considerable job security and a range of training programs, including those negotiated with employers.

In both Norway and Sweden, broad framework laws, passed by the Federal Government and then subject to local agreement or implementation, have served as the major device for engaging a cooperative approach to technological change by labor and management. Both parties have accepted the desirability of new technology and have decided

that solving problems in the work environment and designing and implementing the best system require joint efforts. The differences between Scandinavian and U.S. positions on technology and labor relations are considerable. These distinctions are influenced by the size of the public sector, proportion of the labor force organized into unions, and governmental policies and programs. With particular regard to Sweden, a leading American trade union researcher states:

... one of the distinguishing features is the breadth and depth of the activities in Sweden, involving trade unions, employers and governmental agencies. In the U.S., only the unions have shown consistent interest in the human problems associated with workplace technological change . . . the main lessons Americans can learn, are related to the *values* underlying the experiments and the many accomplishments of the Swedish approach. Chief among them appears to be a real concern for the welfare of individuals, which naturally extends to the workplace and the quality of work performed there. Jobs not only must provide a decent income, but also should be responsible and intellectually satisfying, to the greatest extent possible; if new technologies bring major changes, then adequate training must be provided; and above all, representatives of affected employees might be actively involved in all stages of the process of change, from initial planning through final implementation and evaluation.²⁸

Japan. U.S. industries have surveyed the Japanese system of industrial relations, productivity, and quality control circles. One analyst has concluded that it is a system of “. . . predecision joint consultation to solve the problems of manpower and employment due to drastic technological changes, developed around 1960, and . . . built up to become a basic part of the later Japanese industrial relations. . . . This practice often takes the place of collective bargaining in Japanese industry.”²⁹

One rare example of a formal technology agreement is that between the Nissan Motor Co. and the Nissan Motor Workers' Union. All 3,000 workers at Nissan's Zama plant participated in quality circles at the time robots were intro-

duced in the 1970's and early 1980's, but the technology agreement only came into being in 1983. However, it does contain a clause which states, “in introducing new technology, the Company shall inform the Union in advance of the introduction of the program, possible effects on union members and proposals of countermeasures against such effects, and hold prior consultations with the Union.” Also, “The Company shall neither dismiss nor layoff union members for reasons of the introduction of new technology.”³⁰ Additional provisions address new technology in relation to safety and health, education and training programs, and necessary reassignments and job changes. What is critical is the transition from an earlier joint labor-management consultative agreement (1955) to this new technology agreement which specifically stipulates that the company will provide advance notification, job security, retraining, and the like. Whether this is the beginning of a new pattern in Japanese labor relations remains to be seen.

IN SUMMARY, most other industrial nations have shown greater interest and concern regarding new technology in recent years than has the United States. Unions in those countries have also acquired considerable experience in working out technology agreements and negotiating successfully in various industries.

In countries with a history of cooperation in labor-management relationships, there seems to be a more institutionalized joint approach to dealing with technological change than in those nations, such as the United States, with a tradition of more adversarial labor relations. Technological considerations have been identified in some countries as a critical factor in legislation mandating joint labor-management approaches at the workplace. Whether in the form of work environment legislation or codetermination laws, such regulations nearly always provide for consultation and participation by workers and their representatives in planning and executing technological and organizational design. □

—FOOTNOTES—

¹ Harish Jain, “Task force encourages diffusion of microelectronics in Canada,” *Monthly Labor Review*, October 1983, p. 26.

² See “Work Organization and the Introduction of New Technology: A Survey of Legislative and Collective Agreements in Industrialized Countries,” in *Automation, Work Organization and Occupational Stress* (Washington, International Labor Organization, 1984).

³ These data are for the year 1978 and are from a U.S. Department of Labor report cited in Ira Magaziner and Robert Reich, *Minding America's Business* (New York, Vintage Press, 1983), p. 146.

⁴ This is outlined in Sandra Albrecht and Steven Deutsch, “The Challenge of Economic Democracy—The Case of Sweden,” *Economic and Industrial Democracy*, August 1983, pp. 287–320.

⁵ A useful review is given in Everett Kassalow, “Industrial Democracy and Collective Bargaining: A Comparative View,” *Labour and Society*, September 1982, pp. 209–29. See also, Greg Bamber, “Microchips and Industrial Relations,” *Industrial Relations Journal*, November–December

1980, pp. 7–19; and Russell Lansbury and Edward Davis, eds., *Technology, Work and Industrial Relations* (Melbourne, Longman Cheshire, 1984).

⁶ Greg Bamber and Russell Lansbury, “Labor-Management Relations and Technological Change: Some International Comparisons Between Australia and Britain,” *Labor Law Journal*, August 1983, p. 522.

⁷ Robin Williams and others, “Technology Agreements: Consensus, Control and Technical Change in the Workplace,” in *Information Society: For Richer, For Poorer* (European Economic Community, Amsterdam, North-Holland, 1982), p. 260.

⁸ Russell Lansbury and Edward Davis, “Technological Change and Industrial Relations in Australia,” in Lansbury and Davis, *Technology, Work and Industrial Relations*, p. 3.

⁹ Canadian Labour Congress, *Tech Change: A Handbook for Negotiators* (Ottawa, Canadian Labour Congress, 1984), p. 10.

¹⁰ Susan Attenborough, *Microtechnology* (Ottawa, National Union of Provincial Government Employees, 1982), p. 36.

¹¹ Canadian Labour Congress, *Tech Change*, p. 24.

¹² Canadian Labour Congress, *Tech Change*, p. 27.

¹³ European Communities, *Workers' Rights in Industry* (Brussels, European Economic Community, 1984), p. 10.

¹⁴ An overview is presented in Steven Deutsch, "Unions and Technological Change: International Perspectives," in Donald Kennedy and others, eds., *Labor and Technology* (University Park, Pennsylvania State University, Department of Labor Studies, 1982). Also see Steve Early and Matt Witt, "How European unions cope with new technology," *Monthly Labor Review*, September 1982, pp. 36-38, and John Evans, *Technology and Collective Bargaining* (Brussels, European Trade Union Institute, 1985).

¹⁵ Anders Hingel, "A Promethean Change of Industrial Relations: A Comparative Study of Western European Unions and Technological Developments," in Malcolm Warner, ed., *Microprocessors, Manpower, and Society* (New York, St. Martin's Press, 1984), p. 256.

¹⁶ Joseph Thurman, "New Technology and Work Designs: Implications for Worker Attitudes and Industrial Relations," in *Changing Perceptions of Work in Industrial Countries: Their Effects on and Implications for Industrial Relations* (Geneva, International Institute for Labour Studies, 1983), pp. 188-89.

¹⁷ Organization for Economic Cooperation and Development, *Microelectronics, Robots and Jobs* (Washington, OECD Publications Center, 1982), p. 111.

¹⁸ Steven Deutsch, "Work Environment Reform and Industrial Democracy," *Work and Occupations*, May 1981, pp. 180-94; and Bjorn Gustavsen and Gerry Hunnius, *New Patterns of Work Reform* (Oslo, University of Oslo Press, 1981).

¹⁹ *Act Relating to Worker Protection and Working Environment* (Oslo, Directorate of Labour Inspection, 1977), pp. 5-6.

²⁰ *New Technologies: The Impact on Employment and the Working Environment* (Geneva, International Labor Organization, 1983). Also enlightening on this issue is Alfred Hassencamp and Hans-Jurgen Bieneck, "Technical and Organizational Changes and Design of Working Conditions

in the Federal Republic of Germany," *Labour and Society*, January-March 1983, pp. 39-56.

²¹ Arne Pape and Jostein Fjalstad, "Research on Social Aspects of Computerization and Democratization of Working Life," in P. Samet, ed., *Proceedings of the European Conference on Applied Information Technology of the International Federation for Information Processing (EURO IFIP)* (Amsterdam, North-Holland, 1979); and Max Elden and others, *Good Technology Is Not Enough: Automation and Work Design in Norway* (Trondheim, Institute for Social Science Research in Industry, 1982).

²² This project (known as the Utopia Project) and a larger approach is reviewed in *Training Technology and Products Viewed from the Quality of Work Perspective* (Stockholm, Swedish Center for Working Life, 1981).

²³ Some of these approaches are described in Bo Goranzon, *Job Design and Automation in Sweden* (Stockholm, Swedish Center for Working Life, 1982).

²⁴ "Local Collective Agreement on the Development of a New Production-System at the Postgiro," Stockholm, 1979, Section 2.

²⁵ Swedish Trade Union Confederation (LO), *Computers on Human Terms* (Stockholm, Swedish Trade Union Confederation, October 1983), p. 4.

²⁶ Stefan Aguren and Jan Edgren, *New Factories: Job Design Through Factory Planning in Sweden* (Stockholm, Swedish Employers' Federation, 1980), p. 104.

²⁷ Bengt Abrahamsson, *Computer Technology and Industrial Relations: The Case of Sweden and Norway* (Rome, Olivetti Foundation, forthcoming), p. 44, citing 1984 research by the Swedish Institute for Social Research.

²⁸ Dennis Chamot, "Labor and Technological Change in Sweden," *Working Life in Sweden*, No. 29 (New York, Swedish Information Service, February 1985), p. 6.

²⁹ Akihiro Ishikawa, "Microelectronics and Japanese Industrial Relations," in Warner, *Microprocessors*, p. 355.

³⁰ *Agreement Concerning the Introduction of New Technology*, Nissan Motor Co. and Nissan Motor Workers' Union, Mar. 1, 1983.