CHAPTER 12

Corporate Restructuring and Employment Flexibility

The long boom of fordism during the 1950s and 1960s was a period of sustained growth during which time multinational corporations (MNCs) emerged as a dominating controlling influence of the global economy. In contrast, since the early 1970s, the global economy has been volatile and many corporations have experienced profound restructuring of technology, production, organization, markets, location and employment (Townsend 1981; Taylor and Thrift 1982; de Smidt and Wever 1990). While these changes are complex, there is a broad consensus that a basic theme of corporate restructuring is a search for 'flexibilities' of one kind or another, as the global economy shifts, in Freeman and Perez's (1988) terms, from the fordist mass production techno-economic paradigm to the information technology (ICT) techno-economic paradigm (chapter 2). Yet, the meaning and implications of flexibility are controversial. Thus, flexibility is expressed in terms of the characteristics of machines, factories, firms and of society as a whole (Gertler 1988, 1992); it can refer to a variety of organizational, market, technological and employment characteristics (Sayer 1989; Schoenberger 1987) and societal shifts towards flexibility can be seen as a benign (Piore and Sable 1989) or as an exploitative process (Harvey 1989). In practice, corporations have considerable discretion in integrating the various facets of their operations that are in some ways 'flexible.'

In this chapter, corporate restructuring is examined from the perspective of the search for employment flexibility. The chapter is in three main parts. The first section notes various dimensions of corporate restructuring and then gives particular consideration to employment by comparatively reviewing fordist with more flexible labour markets. The second and third parts of the chapter relate different types of
geographical strategy, specifically new location strategies and in situ change strategies, with different types of employment flexibility, specifically between core and peripheral work forces.

CORPORATE DIMENSIONS OF RESTRUCTURING

Globally, the winds of economic change gathered momentum during the 1970s. Energy crises, inflation and high interest rates increased costs significantly. New technologies, particularly those developed in micro-electronics, transformed production structures across the industrial spectrum, as computer assisted design (CAD), computer assisted manufacturing (CAM) and numerically controlled (NC) machines became critical measures to assess the innovativeness of factories, firms and regions (Ewers and Wettman 1980; Oakey, Thwaites and Nash 1982; Rees, Biggs and Oakey 1984; Thwaites 1983). Enabled by these technologies firms sought to create new products for markets which were becoming more volatile, differentiated and competitive as American MNCs were challenged by European and even more so by Japanese firms. Gradually, it also became apparent that the strength of the Japanese challenge was not based on temporary advantages of low labour costs or unusually hard working and loyal labour but was more deeply rooted in the nature of production organization (Fruin 1992).

For western economies and firms, declining competitiveness signs were publicly expressed in the form of large scale lay-offs. Moreover, these layoffs were massive and permanent, frequently occurring within the context of factory closure, rationalization and modernization (Massey and Meegan 1982). Permanent lay-offs affected core as well as peripheral regions and were especially pronounced after the mid-1970s in the US and the UK (Bluestone and Harrison 1982; Townsend 1981), although they occurred elsewhere as well (Fuchs and Schamp 1990; de Smidt 1990). In the UK, for example, between 1976 and 1981 British Steel reduced jobs by 67,000, British Leyland by 38,500 (cars) and
Courtaulds (textiles) by 24,700 (Townsend 1981: 74) while ICI, the giant chemicals firm, reduced its world wide work force between 1974 and 1980 by 57, 800 including 44, 700 in the UK (Clarke 1982: 99). Moreover, the recession in the early 1990s signaled another round of job losses. By the mid-1990s, downsizing had biten deeply in North America and Europe (and had touched Japan) and the downsizing had been dominated by planning system firms. No corporation in North American and Europe seemed immune. General Motors (GM), for example, experienced a considerable buffeting from the winds of change whITh took a substantial toll on its employment. Thus, between 1980 and 1995, GM reduced its net global work force by over 200, 000 people and its actual lay-offs, bearing in mind it built several new factories, were greater still. Even so, GM still lost over $16 billion in 1991 and 1992, indITating the problem of competitiveness remained.

In recessionary situations of declining market performance and competitiveness, firms have traditionally sought to reduce costs, especially labour costs (Frederiksson and Lindmark 1979). The scale, extent and permanence of recent job losses implemented by so many major corporations, however, have typically been part of wider restructuring processes. The nature of these restructuring processes can be summarized by reference to the fordist firm, as the 'ideal' type in the fordist techno-economic paradigm. Thus, in the fordist firm, specialized managers do the 'thinking' and a unionized workforce does the 'operating' while production utilizes dedicated machines to manufacture standardized items in order to exploit economies of scale (Marshall and Tucker 1992; Storper and Scott 1992). In the more competitive economy of the ICT techno-economic paradigm, however, the fordist firm is considered uncompetitive for several reasons. In particular, fordist management is considered top heavy, bureaucratic and slow to respond to change; fordist workers are judged to be insufficiently versatile and self reliant to cope with a variety of new tasks, resulting in problems of labour productivity; and fordist technology is too specialized, sacrificing quality control for volume at a time when markets are demanding product innovation, differentiation and reliability.
The interrelated faces of restructuring

In recent decades, corporate restructuring designed to lower costs, enhance productivity and improve market positions has taken on multiple dimensions. While restructuring plans inevitably differ among corporations, several common themes and possibilities are emphasized in the industrial geography and related literature. These themes may be briefly identified in relation to labour, production and technology, organization and product-markets. First, with respect to labour, firms can immediately reduce costs by layoffs and can increase productivity by intensifying work practices, that is by maintaining existing functions and tasks with a smaller workforce (Massey and Meegan 1982). Over the longer run, firms may prefer to hire workforces who can be more easily hired and fired. Alternatively, or in a complimentary way, firms can increase labour productivity by automation and providing workers with more sophisticated capital equipment and/or by increasing the skills of the work force (Patchell and Hayter 1995).

Second, in the context of production and technology, firms can close down facilities completely or rationalize operations in which either capacity or functions or both are reduced. Alternatively, or in conjunction with selective closure and rationalization, existing facilities may be modernized, in whole or in part, and/or firms may chose to introduce new technologies, including CAD-CAM, at new locations. Third, with respect to organization, large integrated firms can restructure operations by (selective) vertical disintegration by contracting out, or outsourcing, functions previously conducted internally (Scott 1986). Vertical disintegration may be motivated by desires to gain (indirect) access to cheaper supplies of labour. Alternatively, vertical disintegration may be an attempt by firms to specialize on core activities to which it can give more focused attention and to gain access to equally specialized and focused suppliers. At the same time, vertical disintegration is by no means an inevitable consequence of restructuring and
it should be recognized that large corporations can combine elements of both vertical integration and disintegration. In addition, firms can buy and sell parts of their operations and engage in joint ventures and strategic alliances. Another organizational implication of restructuring is the creation of flatter decision making structures to the extent that more flexible labour needs fewer managers and greater specialization allows thinner managerial layers.

Fourth, the ultimate purpose of corporate restructuring is the definition of profitable market roles (Hayter 1986a; Peck and Townsend 1984). From this perspective, a general theme of corporate restructuring is to shift towards more valuable, design intensive, higher quality products and towards higher income market areas. Such a shift typically involves a commitment to R&D, quality control and servicing so that competitiveness is not simply based on cost and price. For many UK manufacturing corporations in the 1970s and 1980s, for example, restructuring emphasized both adding value and shifting from former Commonwealth markets to EC markets (Hayter 1986a). Similarly, for many lumber firms in coastal British Columbia, restructuring in the 1980s and 1990s has involved a shift from mass production a limited range of low value commodities for the US housing market to a wider range of products for the Japanese market (Edgington and Hayter 1995; Grass and Hayter 1989). If the value added shift is a general theme of corporate restructuring, it is not an universal response, however. Some high quality producers, for example, have sought to establish production of medium quality products to their marketing mix in order to realize economies of scale. Moreover, even in high income locations, opportunities for low cost operations exist.

The relative importance of the various dimensions of restructuring, how they are relate to one another and how they evolve over time vary considerably from corporation to corporation, even within the same region and industry. Corporations develop different restructuring plans and some firms inevitably make mistakes (Schoenberger 1994). Moreover, restructuring plans are often implemented under the exigency of financial
crisis, even for large corporations, and the immediate solutions undertaken to resolve financial threats to survival in turn shape subsequent restructuring plans.

Whether successful or not, corporate restructuring is typically has many faces. Case studies which have detailed the comprehensive nature of the restructuring process by large MNCs include IBM in Europe (Kelley and Keeble, 1990), ICI (Clarke 1982), Fletcher Challenge (LeHeron 1990), Philips (de Smidt 1990), three UK firms (Peck and Townsend 1984) and an unnamed Asian based firm (Clark 1992). GM, Ford and IBM, each of which reduced their global work forces by at least 200,000 are probably the largest scale examples of corporate restructuring of the 1980s and 1990s. Indeed, the context for the search for employment flexibility is provided by a) complex, multi-faceted restructuring processes and b) by massive employment downsizing by major corporations.

Core firms and segmented labour

Ideas about labour market segmentation or dualism were developed in the 1950s and 1960s as a critique of conventional or neoclassical economic thinking (Morris 1988; Hayter and Barnes 1992). While neoclassical theory interprets labour, including the hiring, mobility and firing of labour in terms of laws of demand and supply, dual labour or segmentation market theory argues that the rules and conditions governing groups of workers vary according to the segment they occupy. The principles underlying forms of segmentation are dynamic (Clarke 1982; Gordon, Edwards and Reich 1982) while at any particular time there are considerable variations from place to place (Peck 1993a and 1993b). Taylorism or scientific management, for example, which became incorporated within fordist firms itself began to emerge around the beginning of the 20th century, for example, to replace more idiosyncratic forms of work organization based on the power of managers and foremen. In the 1980s, at different speeds and along different lines, the
Fordist-Taylorist principles of labour market segmentation are now threatened by more flexible ones.

**Labour markets in the fordist firm** - Fordist labour markets are an expression of the idea of a dual economy, particularly as developed by Averitt (1968) and Galbraith (1952; 1967) in the context of the US economy in the 1950s and 1960s (chapter 2). In particular, the dual economy is organized by a dominant fordist sector comprising a few large capital-intensive, oligopolistic firms that engage in mass production and serve relatively stable markets, and a competitive sector made up of many small firms primarily supplying small, fluctuating markets. Kerr (1954) and Doeringer and Piore (1971) elaborated the idea of economic dualism by suggesting the complementary thesis of the dual labour market. Kerr (1954) spoke of 'balkanized' labour markets and Doeringer and Piore of 'segmented' labour markets.

According to Doeringer and Piore, there are two main labour market segments, primary and secondary, which in turn correspond to the fordist and competitive sectors (Figure 12.1).

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**Figure 12.1**

Labour Segmentation under Fordism

<table>
<thead>
<tr>
<th>Primary Segment</th>
<th>Secondary Segment</th>
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<tbody>
<tr>
<td>independent primary segment</td>
<td>largely non-union 'peripheral' workers</td>
</tr>
<tr>
<td>white collar</td>
<td>highly diverse labour markets governed by market forces (and modified by paternalism, primary segment spill-over effects)</td>
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</tbody>
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- R&D
- Head Office
- Factory A
- Factory B

Source: Based on Hayter and Barnes 1992
In broad terms, the primary segment is characterized by “.....high wages, good working conditions, employment stability, chances of advancement, equity, and due process in the administration of work rules”. Doeringer and Piore (1971) further subdivide the primary, or fordist, segment into a primary independent segment (management, research and development workers) and a primary subordinate or dependent segment (production workers, tradespeople, office workers). The former generally enjoy higher levels of remuneration, greater employment stability and better non-wage benefits than the latter. In contrast, jobs in the secondary segment tend to have “.....low wages and fringe benefits, poor conditions, high labour turnover. Little chance of advancement, and often arbitrary and capricious supervision” (Doeringer and Piore, 1971: 165). In comparison to the primary sector, workers in the secondary sector are more likely to be non-union, female and to belong to a visible minority. Moreover, workers in the secondary sector are hired and fired according to competitive conditions, that is, along the lines prescribed by neoclassical theory.

The primary segment, comprising the internal labour markets of large firms, are typically highly structured, including by formal agreements between management and unions governing working conditions and levels of remuneration of the blue collar workforce. Under fordism, labour markets are structured by two dominant principles: seniority and job demarcation (Lester 1967). Seniority imposes structure by limiting entry into the firm to the lowest grades and positions so that higher level vacancies have to be filled by internal (vertical) mobility according to the principle of seniority which begins to accumulate once workers have fulfilled any probationary period and are considered 'full time' (Lester 1967). Wage rates, promotion and layoffs are then regulated by seniority. Job demarcation provides structure by precisely defining the tasks of workers.

Under fordism, the principles of seniority and job demarcation offer significant advantages to both (fordist) management and unions. For unions, these principles address a central philosophical concern, namely the need to reduce competition among workers and the implications of such competition for degraded working conditions and declining levels of
remuneration. Thus, for unions seniority and job demarcation create order, stability and dignity in the workplace as each worker has clearly defined job roles and expectations. For management, seniority and demarcation have two main benefits. First, they encourage a stable work force as seniority, and the associated accumulating wages and non-wage benefits, progressively 'lock-in' workers to the firm while job roles are precisely demarcated. Second, job demarcation is the mirror image of Taylorism which emphasized narrowing jobs into the simplest possible tasks which could be repeated rapidly (and therefore efficiently). Moreover, under Taylorism the promotion of workers on the basis of seniority rather than merit is not a major problem as obedience and discipline are more important than intellect and initiative.

Given a mutual commitment to seniority and job demarcation, fordist labour relations are further structured by regular contract bargaining which in many industries occurred every two or three years (Holmes 1990). As part of job definitions, grievance procedures were negotiated to allow formal challenges to management decisions. Typically, as collective bargains became more complex with respect to wages, non-wage benefits and working conditions (Clark 1986).

The fordist collective bargains negotiated in the primary dependent segment typically occurred in industries, such as the auto industry, characterized by oligopolistic market structures in which a few, large firms invest in mass production technology and enjoy market power and product market stability (Hayter and Barnes 1992). In the case of the North American auto industry, the size and technological sophistication of their factories encouraged GM, Ford and Chrysler to establish increasingly well paid, secure work forces who in return provided stability and productivity. During the 1950s and 1960s, lay-offs of primary dependent workers were mainly temporary and organized according to seniority. Generally, the primary independent segment were untouched by recessionary conditions.

In contrast, Dorringer and Piore argued that labour markets in the secondary segment were largely non-unionized and that wage levels and employment stability were governed closely by market forces (Figure 12.1). Particularly in those segments populated by small firms operating in highly competitive markets jobs were relatively low paying and unstable, and
principles of seniority and job demarcation dependent on local circumstances, that is specific
arrangements between management and labour. Between the 'polar cases' of the unstable, low
waged industries of the secondary segment and the highly structured internal labour markets, for
example of the auto firms, the nature of labour markets varied. Even in the secondary segment,
forms of managerial paternalism were possible while part of the 'giant shadow' cast by the large
fordist firms of the primary segment over the small firms in the secondary segment involved
labour relations. Thus, in some cases, for example where small firms desired skilled, stable
labour, the standards set by collective bargains in the primary dependent segment established
goals for the secondary segment.

Labour segmentation in the flexible firm - The kind of labour segmentation process that
developed under fordism, especially in North America, depended on a set of conditions
peculiar to the 1950s and 1960s. Since the beginning of the 1970s, however, these
conditions even in North America have been threatened. Thus, product markets in the
core industries have become less stable, oligopolistic power diffused by international
competition, new technologies have required different employment levels and skills, and
labour's bargaining power has lessened. In this more competitive economy, the bases for
labour market segmentation began to change towards more 'flexible operating cultures' of
the kind pioneered by successful Japanese and German firms (chapter 11).

In response to recession, technical change and the market challenge posed by
foreign competition, Atkinson (1985; 1987) argued, in a UK context, that an increasing
number of firms were pursuing a policy of employment flexibility (Figure 12. 2). His
basic argument is that firms are seeking to develop flexible 'core' work forces and flexible
peripheral workforces in which the characteristics of flexibility differ in the two segments.
Thus, core workers are 'functionally flexible,' that is, highly skilled and able to perform
different functions as part of team work, responsible for decision making, committed to
developing further skills as needs arise and willing to accept benchmarking, that is to
study and if necessary incorporate the best practices developed by competitors. In contrast to fordism, core workforces in the flexible firm are not narrowly structured by job demarcation or by seniority.

If job demarcation is not eradicated, in the flexible firm job categories are far fewer and broadly described. The advancement of workers depends upon performance and the ability to perform tasks rather than solely by seniority. In addition, in some types of flexible firms at least, in contrast to fordist firms, workers are recognized as human resources capable of initiating productivity improvements and self-supervision. These workers are rewarded with high wages, non-wage benefits and employment stability.

In contrast, peripheral workers can be either numerically and/or financially flexible. Numerically flexible workers are hired as needed and they include part-time and temporary workers and 'permanent' workers whose hours can easily be varied by
adjustments in shifts, additions, contractions to overtime and by lay-off if necessary. In addition, numerically flexible workers may be employed directly by firms or indirectly through subcontracting. Financially flexibility is achieved by hiring workers traditionally associated with lower wages, such as females and are used on a part-time basis as needs arise within the firm or via subcontracting. Firms can also achieve financial flexibility by subcontracting high value work to suppliers comprising highly skilled workers and professionals who have expertise which firms want occasionally (Christopherson 1989).

In summary, Atkinson's (1985: 16) argument is that because firms "....have put a premium on achieving a workforce which can respond quickly, easily, and cheaply to unforeseen changes...." a new form of labour market segmentation has arisen between a functionally flexible core labour force, and a numerically/financially flexible peripheral one. Clearly, the characteristics of core workers in the flexible firm are fundamentally different from the characteristics of core workers in the fordist firm. Similarly, in the flexible firm, management is articulated with workers in a fundamentally different way from the fordist firm as supervision and worker discipline are replaced by co-management and initiative. In addition, flexible employment has significant implications for unions by its direct confrontation with the principles of seniority and job demarcation. Indeed, the general shift towards flexibility is associated with a general decline in the power of unions, most notably in the US and the UK. On the other hand, the characteristics of flexible workers in the periphery are similar to the characteristics of workers in the secondary segment of fordist. Moreover, in the flexible firm, established polyvalent skills and accumulating experience, perhaps reinforced by structured, unionized labour relations, provide barriers to ready movement of workers from the periphery to the core.

**Flexible labour and geographical strategies** - In order to create a flexible labour force, firms have two basic geographical strategies. The first strategy is the new location strategy in which a new, flexible labour bargain is created at a new location. The second
in situ strategy occurs at existing locations where firms seek to replace fordist with flexible labour relations. Simultaneously, firms, perhaps in conjunction with labour, must chose a particular flexibility option. Again, two polar strategies can be identified. The first strategy aims to emphasize the creation of core work forces based on principles of functional flexibility and the second emphasizes the creation of a peripheral workforce based on principles of numerical and financial flexibility. Each of these flexibility strategies may be associated with either a new location or an in situ geographical strategy.

Thus, the geographical implications of the transition from fordist to flexible employment may be explored in terms of four basic strategies: new locations with functional flexibility or with numerical/financial flexibility; in situ adjustments incorporating functional flexibility or numerical/financial flexibility. It does need to be reiterated that reality is more complex and behaviour in practice is not restricted to these theoretical categories. Reality is more complicated as firms can and do select different bundles of flexibility characteristics in their workforces at new and existing locations, often in the same region (Hayter and Barnes 1992; Morris 1988; Pinch et al 1989). Moreover, in practice, it is not easy to distinguish between different types of flexibility. Flexibility of any kind is designed to ensure that workers are always working so that flexibility can imply the simultaneous intensification of work practices and the development of multiple skills as workers perform various tasks. At the same time, the performance of multiple tasks does not automatically equate with multiple skills if the tasks involved are simple. The notion of skill is itself problematical.

NEW LOCATIONS AND FLEXIBLE WORKFORCES

New locations provide firms with significant bargaining advantages (chapter 7). For firms, it is easier to develop new labour relations in new locations. Such a strategy allows the firm to literally 'start again' and to avoid the difficulties of trying to change established
attitudes and contractual relations. This advantage applies whether the firm is seeking functionally flexible core workforces or numerically flexible peripheral workforces.

Perhaps the most significant experiments in labour relations in recent years have occurred in the auto industry at new locations. The most radical of these experiments are GM's Saturn plant in Tennessee and Volvo's short lived Uddevalla plant in south west Sweden (Figure 7.7). Toyota's recently built plant on Kyuyshu in southern Japan, its first plant in Japan built outside of its core region around Toyota Town, is another attempt to re-define labour relations. In each case, the firms emphasized the creation of new functionally flexible core workforces in the new plants in the hope that the new practices could then be transferred to existing operations.

**Creating core work forces in new locations: GM's Saturn plant**

GM's Saturn project at Spring Hill, Tennessee (Figure 6.4) originated in the recessionary crisis of the early 1980s as part of GM's corporate wide restructuring plans. In 1982 an internal study concluded that GM was unable to competitively manufacture a small car with existing work practices (Rubinstein, Bennett and Kochan 1993: 341). In December 1983, GM's senior management and the UAW created a study centre to initiate the Saturn project and subsequently, the "group of 99" was formed, comprising managers and union members representing wide ranging interests (Berggren and Rehder 1992: 194). The "group of 99" divided itself into work teams which traveled over two million miles and visited over 100 ('benchmark') companies to determine appropriate state of the art practices. Saturn's mandate was to manufacture a small car in the US that was a world leader in cost and quality and to become a source of 'know-how' for GM as a whole (Berggren and Rehder 1992: 195).
In practice, Saturn has become a significant innovation in the history of industrial relations in the US (Rubinstein, Bennett and Kochan 1993). Thus, Saturn was designed explicitly to depart from fordist work principles and to embrace the full implications of functional flexibility with a particular emphasis on the integration of traditionally distinct management - worker roles. At Saturn, union and management agreed to virtually eliminate job demarcation and supervisors in the traditional sense and to organize work in the form of teams, modules and decision rings (Table 12.1). In particular, self-directed teams of 6-15 members, which enjoy considerable authority and responsibility over day-to-day operations, are organized into modules which are in turn integrated into three Business Units. Management and labour are further integrated by the weekly meetings of several Decision Rings, for example, related to corporate long range planning, manufacturing at Spring Hill and labour relations issues. In addition, co-management features a "partnering programme" in which union members are partnered with managers in a growing number of functional areas including sales, service and marketing; finance; industrial engineering; quality assurance; health and safety; training; maintenance; product and process development; and corporate communications. According to Rubinstein et al. (1993:346) this partnering initiative "represents the most far-reaching innovation in the Saturn governance system" which in their view has taken labour's role in management further than any other organization in the US. They also point out that since the start up of the Saturn plant in 1990 further developments in co-management have occurred, notably "Problem Solving Circles" which are teams created to solve off-line problems.

The Saturn project is a major experiment in industrial relations developed in a new location. Saturn employs over 7,000, including about 5,300 AUW members. It is a 100% union operation in a non-union state. As of 1993, investment in Saturn amounted to about $5 billion, including product development costs. Whether Saturn will succeed
remains to be seen. From a sales and marketing point of view, Saturn's new automobile has clearly been a success.

Table 12.1

GM Saturn's Partnership Structure: Key Initiatives

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Comment</th>
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<tbody>
<tr>
<td>Work Teams</td>
<td>Self-directed teams of 6-15 members, elected leaders. Broadly shared authority over daily operations regarding matters related to: producing to budget, quality housekeeping, safety and health, maintenance, material and inventory control, training, job assignments, repairs, scrap control, vacation approvals, absenteeism, supplies, record keeping, personnel selection and hiring, work planning, and work scheduling.</td>
</tr>
<tr>
<td>Modules</td>
<td>Comprise teams interrelated by geography, product or technology. Modules have common 'partnered' advisors are integrated into three Business Units (Body Systems, Powertrain; and Vehicle Systems).</td>
</tr>
<tr>
<td>Decision Rings</td>
<td>Joint union-management groups which meet weekly. Important decision rings include the Strategic Action Council (long range planning and issues related to dealers, suppliers, and community etc.) and the Manufacturing Action Council (manufacturing issues at Spring Hill). Each Business Unit has a decision ring which are also organized at the module level.</td>
</tr>
<tr>
<td>Partnering</td>
<td>The one to one partnering between union members and 'middle' management providing for on-line co-management by the union (and replacing foremen, superintendents and their assistants).</td>
</tr>
<tr>
<td>Problem Resolution Circles</td>
<td>Labour-management committees to address 'off-line' problems.</td>
</tr>
</tbody>
</table>

Source: Based on Rubinstein, Bennett and Kochan 1993, especially pp. 342-5.

However, Saturn does have cost and productivity problems. Berggren and Rehder (1992: 195), for example, report that Saturn lost $700 million in 1992. Apparently, the operation is simply not as lean as rival Japanese factories and there are quality problems with suppliers, all of which are UAW operations and were chosen jointly by union and
management. In the meantime, Saturn offers to GM a highly valuable lesson in marketing
and in non-adversarial co-management.

*Saturn and Uddevalla compared* - In the mid-1980s, as GM was planning Its Saturn project, Volvo decided that within Sweden it both needed new, integrated auto assembly capacity and to restructure Its labour relations (Berrgren and Rehder 1992; Alvstam and Ellegard 1990). This decision necessarily took into account Volvo's existing operations which in Sweden principally comprise Torslanda, west of Gothenburg, where an assembly plant is integrated with a body shop and paint shop (Figure 7. 7). This plant was opened in 1964 and another assembly plant was opened in Kalmar in south-eastern Sweden in the early 1970s. Both these locations are supplied from other Volvo plants including Skövde (engines) and Köping (transmissions), as well as from a large number of subcontractors (Fredriksson and Lindmark 1979). As Alvstam and Ellegard (1990: 188) note, a new body shop, paint shop and assembly operation could have logically been added to the Kalmar site, at that time only an assembly operation, or at Olofström which had a press shop. In either case, new integrated facilities would have increased the efficiency of existing flows of components and processes within the Volvo system.

In practice, Volvo eschewed Its Kalmar and Olofström options in favour of a new location, specifically Uddevalla to the north of Gothenburg (Figure 7. 7). While there were several factors underlying this choice, including local development issues, as was the case with GM's choice of a Tennessee location, a critical factor underlying the choice of a new site reflected a desire "to develop new ideas of work organization" (Alvstam and Ellegard 1990: 189). Similar to GM's strategy at Saturn, Volvo management involved the union from the beginning of the planning of the new plant. At Its Uddevalla plant, Volvo's motivation was to replace the traditional, fordist system of assembly in which 'core' workers perform jobs narrowly demarcated according to short cycle, highly repetitive tasks, a system it employed at Its Torslanda plant, by more flexible 'core'
workers performing longer cycle and more varied tasks. Alvstam and Ellegard (1990: 193-4) offer several factors which encouraged Volvo to create more interesting, varied and responsible work experiences. In particular, Volvo was keen to offset the problems of increasing rates of turnover and accident rates associated with short cycle repetitive work, while offering jobs to Swedish youth who constitute a declining cohort in the Swedish population. Moreover, Volvo recognized that better educated youth would demand more challenging and varied work experiences and would not be attracted by narrowly defined 'blue collar' jobs.

The Uddevalla plant that opened in 1988 was a truly radical approach to work organization in the auto industry. While auto assemblers traditionally performed repetitive, specialized tasks lasting one to two minutes, at Uddevalla work cycles lasted one to four hours. The factory itself comprised six, separate product shops for assembly plus a material store, several areas for final test and completion and an administrative building (Alvstam and Ellegard 1990: 197). Each of the product shops comprised several small teams of (10) workers and each team assembled a complete car. Prior to the start up of the plant, in 1986 Volvo completed a training centre where workers were extensively trained in the building of actual cars; the general goal was to provide each worker with the knowledge to build one-quarter of the car. The training centre also played an important role in testing new techniques and new forms of organization. In theory, just four workers would be needed to build a car at Uddevalla although when the plant first began production workers were grouped into teams of ten. In addition to traditional type assembly work, each team was responsible for structuring and checking material and components before assembly, quality control, and making adjustments where necessary. Each team was also responsible for tasks previously performed by foremen and managers which not only included controlling their own work day but also involvement in longer term planning including with respect to such matters as
recruitment, budgeting and production technique (Alvstam and Ellegard 1990: 198). Almost half of the original work force were women.

In comparison with GM's Saturn venture, Volvo's Uddevalla plant represented a more radical 'humanistic' way of building cars at the factory floor level. The transition from very short to long work cycles, the novel approach to training, the breadth of the training of assembly workers emphasizing functional understanding and a holistic perspective and the plant's innovative ergonomic design and lay-out are the particularly noteworthy features of the Uddevalla experiment (Berggren and Rehder 1992: 195). If Volvo's redesign of the assembly process and of worker skills at Uddevalla was more profound that at Saturn, from a broader perspective GM's Saturn venture is more radical that Uddevalla. In particular, the integration of manufacturing processes with innovative product development, supplier relations, industrial relations and marketing has been more explicit and comprehensive at Saturn than at Uddevalla. GM is clearly committed to the Saturn project; despite large corporate losses in the early 1990s, which included losses at Saturn, the plant has continued to manufacture cars. In contrast, when Volvo suffered corporate losses, the Uddevalla plant was closed in 1993.

According to Berggren and Rehder (1992), the Uddevalla plant did not fail because of its pioneering forms of work organization. Indeed, they suggest, that in terms of productivity, quality, cost-effective technical solutions, cost savings related to health, lower tool and training costs and in reducing delivery times to customers, the Uddevalla plant recorded rapid improvement after 1990 which either met or surpassed the performance in the Torslanda plant. Rather they relate the closure of the Uddevalla plant to a substantial downtown in Volvo's markets, sluggishness in Volvo's pace of innovation, the failure of Volvo's senior management to fully embrace the Uddevalla experiment and, ultimately, to the power of vested management and union interests in the Torslanda plant. Thus, when Volvo felt it necessary to rationalize capacity, it was easier to close the newer
('least senior) and small Uddevalle plant than the bigger and older Torlsanda plant. At least for Volvo, any immediate reform of work organization will have to be in situ.

Peripheral work forces in new locations: the importance of women

It has been intimated since the 1960s that firms chose new locations, in part, to access a peripheral workforce, that is to workers who are passive, low waged, hard working and stable. To varying degrees, trends towards, suburbanization, non-metropolitan industrialization as well as off-shore leaps to poor countries have sought labour with these characteristics. To an important degree, hiring preferences in these contexts have implied a search for female workers and in some cases for child labour. In the very hey day of fordism, many firms gave emphasis to the hiring of what is now referred to as flexible, often female labour. Peripheral and exploited work forces have never been confined to females and core and privilaged labour markets are not confined to males. Even so, the process of industrialization marginalized women in relation to paid employment.

Traditionally, female labour has received lower wages than males, even for similar work, and firms widely believe that female labour is less likely to be unionized and easier to control than male labour. Indeed, the original dual market based labour segmentation theory suggested that women are over represented in the peripheral secondary sector (Figure 12.1) while the recent flexibility based labour market segments similarly argue that women play a proportionately bigger role in jobs that are considered numerically and financially flexible (Figure 12. 2). Across most sectors of advanced countries, for some time women have provided important shares of peripheral work forces (Christopherson 1989; Saso 1990). More recently, women have greatly expanded participation in the core work forces especially within the service sector but even in manufacturing as well. Within British Columbia's private sector, for example, in manufacturing, wholesaling and services, women professionals were the most rapidly growing segment between 1981 and
1986, even in industries experiencing employment decline, although their share of these jobs remain small (Hayter and Barnes 1992).

*married women and the suburban option* - Historically, World War 2 reminded many industrialized countries that women could perform the same tasks as men in a variety of industries with at least equal efficiency under extremely difficult circumstances (and for low wages). The war did not seem to change existing family values, particularly with respect to gender roles and relations, and women were comprehensively replaced by men in the manufacturing sector. Within 10 years or so, however, an increasing number of firms in 'light' industries, such as various branches of metal working and tool manufacture, began to seek out married as well as single women workers at a time when married women in growing numbers were looking to return to the job market. The 1950s and 1960s was a period of rapid growth and by contemporary standards extremely low unemployment rates in most advanced countries and firms often faced labour supply shortages. At the same time, factory skilled and low cost women were available, including married women who already had children and who were looking to supplement family incomes. Moreover, society's values still supported the ideal of a 'family wage' for male 'breadwinners,' that is a wage sufficient to maintain a family, so that women's wages were widely viewed as secondary, perhaps even temporary. Such values provided tacit support for firms to continue to pay low wages to married women as well as to unmarried women whose traditional roles in the workforce had been temporary. At that time, within families, arguments centered as much on whether women should work as on the question of pay.

Geographically, in many countries, including the US, the UK, Canada and Australia, one aspect of the suburbanization of manufacturing in the 1950s and 1960s included the matching of female labour demand with female labour supply, married and single. Such matching may or may not have been important location factors - for many
firms the move to the suburbs was motivated by land costs, land availability, building
design considerations, taxes, congestion in inner cities as well as by labour related
reasons. Nevertheless, to some extent it was at least assumed that by locating near
residences, married women could find jobs within walking distance or within a short
commute. Such assumptions were not necessarily validated in practice. One anecdotal
story in this regard is provided by a Sheffield based cutlery firm (Case B in Hayter and
Patchel 1994) which relocated in the 1950s to a site, by the Sheffield Wednesday football
ground, adjacent to new housing estates which the firm assumed would provide female
labour. Instead, most of its existing female labour force chose to commute across town, a
pattern which has remained in evidence.

In recent years, more rigorous attempts to investigate female labour markets in the
suburbs have been conducted within the context of the 'spatial entrapment hypothesis'
example, in the context of suburban areas in Massachusetts, suggest that women are
typically "entrapped" within peripheral labour markets and "spatially entrapped" within
distinctly female labour markets which in turn exist within a patriarchal capitalist society.
This hypothesis focuses on suburban-based, white, married women with children who
wish to work close to home in order to maintain domestic obligations as far as possible.
Such women, the hypothesis argues, are willing to forego high wages in favour of local,
but low income jobs in order to give more priority to domestic roles (England 1993).
This hypothesis predicts, for example, shorter journey to work distances for women,
especially married women, compared to men. Hanson and Pratt's (1991) study supports
this thesis and they further note that since most women (93%) found jobs after choosing a
residence in comparison to two-thirds of men, residential location decisions are primarily
affected by male choice of jobs. Hanson and Pratt also emphasize that variations in
female labour markets in terms of income, race and age attract different kinds of activities.
Manufacturing firms, for example, favoured the lower income suburb containing Puerto
Rican workers. In general, employers deliberately sought female labour markets by locating in particular areas, recruitment methods and by arranging job schedules more attractive to women than men, for example, by emphasizing the part-time and temporary nature of employment.

Other studies suggest a more complex view of suburban female labour markets than implied by the spatial entrapment hypothesis. Indeed, England (1993: 239) cautions strongly against a too literal interpretation of the hypothesis which she sees has 'an overgeneralization and over-simplification' (see also McLafferty and Preston 1991). England's investigation of journey to work distances in a suburb of Columbus, Ohio reveals only minor differences between males and females while she finds bigger differences between married and single women. Moreover, contrary to expectations (of the spatial entrapment hypothesis), married women with children have longer commutes than single women (England 1993: 232). Rather, she notes that the relationships between choice of residence, choice of work, marital status, number of children, age of children and family situations are extremely varied and that women (and men) have various ways of 'coping,' to use Dyck's (1989) term, with their various obligations, including journey to work. For firms, a suburban location, even if targeted towards women workers, may or may not mean that labour supply is restricted to that suburb (Hanson and Johnston 1985; McLafferty and Preston 1991; Villeneuve and Rose 1988). Similarly, if suburban women can work downtown or elsewhere in the metropolitan area, the large supplies of low wage immigrant (female and male) workforce that exists in many inner city areas is to varying degrees available to new plants in suburban locations (Scott 1988b).

singlewomen and the export processing zone option - The dispersal of manufacturing activities to peripheral regions and non-metropolitan areas within advanced countries and to low wage countries has frequently targeted female labour markets. Within advanced countries, job opportunities were often limited for women in rural areas and small
communities where availability, low wages and low levels of militancy among women have provided advantages to firms. Data on the gender structure of workforces were not often collected in earlier surveys although Townroe (1975: 54) notes that in one UK region females were more important in externally owned branch plants than in locally owned plants (see also Thwaites 1978) and Morgan and Sayer (1988) observe the tendency of electronics manufactures to hire females in assembly line operations. In the US, rural locations have provided manufacturing firms in various industries with large contingents of female workers (Schmenner 1982).

In developing countries the availability of female labour is even greater and the wages and non-wage benefits, if in existence, even lower. Indeed, in such countries, most obviously in export processing zones which provide tariff havens and low cost labour supplies for branch plants, the seeking out of female labour is particularly pronounced (Elson and Pearson 1981; Fernandez-Kelley 1989; Tiano 1994). For some observers, the shift towards more flexible forms of production inevitably imply continued growth in the female labour force (Standing 1989). In exporting processing zones in 11 different countries, for example, a survey by the International Labour Office (1988) found that the percentage of women employed never dropped below 60% and only two cases were below 74% (Table 12. 2). This level of female employment is significantly higher than national averages found outside the export processing zones and in general the women workers are young and single. In some instances, young single women have been specifically targeted and Nelson (1989: 14) says that some employers have fired women who married and others 'have actually awarded prizes to women who undergo sterilization, which is considered the sign of a dependable company employee.' Largely unprotected by unions, the rights of workers in export processing zones (and elsewhere in poor countries) are limited. Management's concern can be highly focused on immediate productivity. As Schoenberger (1988: 116) notes 'Management often provides pep pills
and amphetamine injections to keep the women awake and working; some of the women become addicts.'

Table 12.2

Female workers in Export-Processing Zones

<table>
<thead>
<tr>
<th>Country</th>
<th>% of women in EPZ industries</th>
<th>% of women in non-EPZ industries</th>
<th>% of women EPZ workers by age group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>60</td>
<td>49.3</td>
<td>85(20.30)</td>
</tr>
<tr>
<td>India</td>
<td>80</td>
<td>9.5</td>
<td>83(&lt;26)</td>
</tr>
<tr>
<td>Indonesia</td>
<td>90</td>
<td>47.9</td>
<td>83(&lt;26)</td>
</tr>
<tr>
<td>Korea</td>
<td>75</td>
<td>37.5</td>
<td>85(20-30)</td>
</tr>
<tr>
<td>Malaysia</td>
<td>85</td>
<td>32.9</td>
<td>(Average: 21.7)</td>
</tr>
<tr>
<td>Philippines</td>
<td>74</td>
<td>48.1</td>
<td>88(&lt;29)</td>
</tr>
<tr>
<td>Singapore</td>
<td>60</td>
<td>44.3</td>
<td>78(&lt;27)</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>88</td>
<td>17.1</td>
<td>83(&lt;26)</td>
</tr>
<tr>
<td>Mexico</td>
<td>77</td>
<td>24.5</td>
<td>78(&lt;27)</td>
</tr>
<tr>
<td>Jamaica</td>
<td>95</td>
<td>19.0</td>
<td>(Average: 20s)</td>
</tr>
<tr>
<td>Tunisia</td>
<td>90</td>
<td>48.1</td>
<td>70(&lt;25)</td>
</tr>
</tbody>
</table>

Source: Dicken 1992: 186
Note: Age group is in years

Moreover, with low opportunity costs and no union representation, the wages paid to workers in EPZs are extremely low. In the early 1990s, for example, a cutlery firm in the Shenzhen economic zone in China paid its workers, mostly women, 17 cents an hour (Hayter and Patchell 1994). A survey of Japanese owned maquilas in Mexico reported that in late 1991 average wages amounted to $1.10 - 1.25 per hour, about four times less than the US minimum wage, and the range was between 50 cents to $2.00 (Kenney and Florida 1994: 31). Kenney and Florida also note that the nonwage benefits are relatively small and varied from free bus services and cafeteria food to company sponsored parties.
While this study did not provide details on the extent of female employment, Florida and Kenney (1994: 34) observed that gender ratios varied considerably by plant and that distinct gender divisions of labour did exist; for example, while television cabinet manufacture was done almost entirely by men circuit board stuffing was done almost entirely by women (see Sklair 1989).

The workers hired by the Japanese maquilas represent classic types of numerical flexibility. Most production jobs, regardless of gender, are low skilled and routine and according to Kenney and Florida, there are few signs of training. They report that absenteeism and turnover rates are extremely high but since hiring and training costs are negligible workers are readily replaced. They conclude that in their maquilas 'Japanese firms are managing their operations in ways that resemble their usage of temporary and part-time workers in Japan' (Kenney and Florida 1994: 35).

Tapping child labour - Although illegal, in several countries there are large numbers of children working for extremely low wages. India is estimated to have the largest amount of child labour, the estimates varying from the low official count of 15. 5 million to between 50-100 million (Bramham 1996: D3). China has an estimated 5 million child workers and there are about 20 million children in Pakistan who work under a bonded system in which the children work to pay off loans made by their parents. Many of these children stitch carpets. Wages can be as low as $8 per month. Children who stitch soccer balls in the Sialkot region of north Pakistan, the world's principal source of hand stitched soccer balls, do better, receiving about $1.00-50 per hour (Lees and Hinde 1995: 6). Children begin work from the age of six and are paid on a piece work basis so that wages primarily depend on the number of balls stitched per day.

Children are undoubtedly employed for the most part directly employed by local organizations, including government agencies. Established MNCs, even if they have policies which ostensibly prevent use of child labour, do nevertheless tap into child
labour through subcontracting linkages. The soccer balls stitched in the Sialkot region, for example, are marketed by such well known firms as Mitre, Adidas and Reebock. Similarly, garment manufacturers in the US tap into cheap labour, including child labour, in Asia and several Pacific Islands. Although illegal and widely condemned as immoral, child labour is likely to remain for some. The children and their families need the money, no matter how paltry, and their nimble fingers literally offer physical flexibility which is in prized and which can perform in ways older fingers cannot. At the same time, in south Asia at least, child labour is a brake on adult wages and helps contribute towards already high levels of unemployment.

*Nike's off-shore leaps* - Nike, the sports footwear company, provides a good illustration of a company which has pursued a geographical strategy in pursuit of numerical and financially flexible labour primarily through subcontracting production to low wage regions (Donaghu and Barff 1990; see also Barff and Austen 1993; Barff 1995). The company originated as a US owned distributor of athletic shoes produced by a Japanese manufacturer, Japan then being a low wage region. Faced with a threat of takeover by Its Japanese supplier, in 1971 Nike began a partnership with a Japanese *sogo shosha* or trading company which arranged alternative lines of supply. In the meantime, Nike concentrated Its research and development in the US, at Beaverton, Oregon. Further battles over control, however, and rising costs in Japan, encouraged Nike to establish Its own partnerships in a variety of countries (Figure 12. 3). Most of the partnerships Nike has created have been on a contract basis although it did acquire its own factories in the US, the UK and Eire. During the 1980s, however, Nike divested these connections and in recent years virtually all of Nike's production has been subcontracted.
Most of Nike's subcontracting relationships are in southeast Asia and take on one of three forms (Figure 12.4). 'Developed partners' are the most sophisticated producers within the system, primarily located in Taiwan and South Korea, and manufacture the most recent, design intensive shoes while subcontracting the price sensitive components to other suppliers, including the 'developing sources', in even lower wage countries. Developed partners are exclusive to Nike which tries to ensure as even a flow of orders as possible.
The 'volume producers,' mainly based in South Korea, are non-exclusive to Nike and manufacture large quantities of standardized models. These suppliers experience considerable fluctuations in output. Finally, there are the developing sources in low wage countries, particularly Thailand, China and Indonesia which Nike is trying to develop on an exclusive basis, presumably initially by contracting out relatively small job lots of relatively low value components. The developed partners and developing sources are closely integrated through subcontracting arrangements and by Nike's 'expatriate programme' in which engineers from Beaverton spend time with suppliers to transfer skills and quality control concerns.

As a result Nike has developed a highly flexible system which seeks to promote stability among its most valued suppliers and actively promotes skill development while also minimizing labour costs while maintaining quality (Donaghu and Barff 1990; Barff and Austen 1993). Even the favoured suppliers are in relatively low wage locations,
however, and they, in turn, contract out the more standardized components to even more peripheral locations. Moreover, the developing sources provide a stream of alternative as well as complementary suppliers while the volume producers are turned on and off with demand. Herbert (1996) argues that Nike has organized an exploitative sweat shop system in which Nike constantly switches Its production in search of ever lower labour costs. He notes that sweat shops with Nike contracts in Indonesia pay $2.20 a day and the firm is currently contemplating Vietnam where labour costs are $30 a month. On the other hand, Nike does pay Michael Jordan $20 million for advertizing.

IN SITU CHANGE AND FLEXIBLE WORKFORCES

The development of various kinds of flexibilities at new locations has placed increasing pressure on established factories to adapt to similar labour bargains to the extent that the former are more productive, innovative and value oriented than the latter. The in situ search for employment flexibility is an inherently more difficult process than at new locations especially in unionized factories where fordist labour relations are entrenched in tradition and law. Nevertheless, geographical options are not always readily available and in all industries existing factories comprise immovable capital, inherited human know-how and may still offer appropriate location factors which encourage firms to re-negotiate labour bargains in place.

Not surprisingly, within established fordist contexts, such as the North American auto industry, the most radical changes towards functional flexibility have occurred at new locations, such as GM's Saturn plant and the new Japanese transplant locations. Changes towards more flexible work practices have been made at existing plants and at Nummi, the joint venture between GM and Toyota in Freemont, California, these changes have been far reaching in incorporating Japanese practice (Womack, et al 1990: 82-4).
However, although on an existing site, NUMMI occupied a factory that had previously been closed down by GM in 1982 and NUMMI's management were able to insist on a new contract with the union which, for example, fully accepted team work and only two job categories - assemblers and technicians. In other existing factories the shift towards flexibility has been more problematical (Holmes 1990).

Renegotiating core work forces in situ: MacMillan Bloedel in British Columbia

The British Columbia (BC) forest industry is a good example of a strongly fordist industry which has been struggling to shift towards more flexible operating cultures (Grass and Hayter 1989; Barnes, Hayter and Grass 1990; Barnes and Hayter 1993 and Hayter and Barnes 1992; Hayter, Grass and Barnes 1994). These struggles have largely occurred at existing sites and since the early 1980s MacMillan Bloedel (MB) has been the leader of the corporate unionized sector in pioneering new forms of work organization. The best known example is its Chemainus sawmill (Barnes and Hayter 1993), where (like NUMMI) changes in employment practice at this mill were facilitated by permanent closure of an existing mill and its replacement by an entirely new operation.

*The Chemainus sawmill* - In 1982, MB closed down its sawmill at Chemainus which employed 600-700 workers in 1980 but was obsolescent (Barnes, Hayter and Grass 1990; Barnes and Hayter 1992; Barnes and Hayter 1994). In contrast, at Chemainus, the old sawmill, was entirely torn down, and replaced on the same site, two years following closure, with a new mill which was quickly fully computerized and able to cut lumber precisely to a wide variety of dimensions, particularly for the Japanese market. From its start-up in 1985, the new mill has been fully committed to the principles of functional flexibility with its emphasis on team work, the development of multiple skills, pay for knowledge scheme, on-going training and close
management worker interaction. In addition, the apprenticeship programme has been re-introduced for trades occupations and profit sharing has been recently experimented. Bearing in mind its favoured tide water location and access to high quality logs the Chemainus sawmill has been consistently profitable and it is has operated without lay-off since its re-opening, including through the recession of 1991.

In the terms of Marshall and Tucker (1992), the Chemainus sawmill has successfully shifted from Taylorized mass production principles to flexibility principles based on the high performance strategy model. The union accepted the comprehensive introduction of functional flexibility principles and the Chemainus local operates according to a sub-agreement within the provincial wide master contract. Admittedly, in prior negotiations, management had the 'hammer' in that the old mill had been closed, all the workers laid-off and a clause in the master contract ties the firm to seniority only until two years following closure - that is, the firm had the discretion to hire whom it wanted when opening the new mill. Nevertheless, the Chemainus example, does demonstrate that functional flexibility can be readily incorporated within a union environment. Difficulties in developing flexibilities in existing mills arise, however, because customs and contractual relations are deeply embedded.

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The Powell River papermill - Among existing mills, bargaining over flexibility is conducted by mill management and union locals in specific communities. Such negotiations typically occur over extended periods of time, involving *quid pro quos* between management and union in which employment downsizing provides the context. A summary of the experience of MB's Powell River paper mill, which has been detailed elsewhere (Hayter and Holmes 1994; Hayter forthcoming), provides an illustration (Table 12.3).

Table 12.3

<table>
<thead>
<tr>
<th>Year</th>
<th>Salaried</th>
<th>Hourly</th>
<th>Relief</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1965</td>
<td>216</td>
<td>1730</td>
<td>130</td>
<td>2076</td>
</tr>
<tr>
<td>1966</td>
<td>242</td>
<td>1724</td>
<td>187</td>
<td>2153</td>
</tr>
<tr>
<td>1970</td>
<td>308</td>
<td>1915</td>
<td>246</td>
<td>2475</td>
</tr>
<tr>
<td>1973</td>
<td>325</td>
<td>2032</td>
<td>233</td>
<td>2596</td>
</tr>
<tr>
<td>1974</td>
<td>339</td>
<td>1948</td>
<td>240</td>
<td>2527</td>
</tr>
<tr>
<td>1980</td>
<td>330</td>
<td>1665</td>
<td>315</td>
<td>2310</td>
</tr>
<tr>
<td>1981</td>
<td>332</td>
<td>1720</td>
<td>283</td>
<td>2335</td>
</tr>
<tr>
<td>1982</td>
<td>271</td>
<td>1435</td>
<td>238</td>
<td>1944</td>
</tr>
<tr>
<td>1983</td>
<td>286</td>
<td>1393</td>
<td>286</td>
<td>1943</td>
</tr>
<tr>
<td>1984</td>
<td>265</td>
<td>1325</td>
<td>273</td>
<td>1863</td>
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<tr>
<td>1985</td>
<td>265</td>
<td>1290</td>
<td>272</td>
<td>1827</td>
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<tr>
<td>1986</td>
<td>265</td>
<td>1297</td>
<td>271</td>
<td>1833</td>
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<tr>
<td>1987</td>
<td>303</td>
<td>1328</td>
<td>268</td>
<td>1899</td>
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<tr>
<td>1988</td>
<td>306</td>
<td>1338</td>
<td>346</td>
<td>1990</td>
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<tr>
<td>1989</td>
<td>314</td>
<td>1349</td>
<td>303</td>
<td>1966</td>
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<td>1990</td>
<td>303</td>
<td>1318</td>
<td>285</td>
<td>1906</td>
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<tr>
<td>1991</td>
<td>270</td>
<td>1309</td>
<td>249</td>
<td>1828</td>
</tr>
<tr>
<td>1992</td>
<td>230</td>
<td>1065</td>
<td>205</td>
<td>1497</td>
</tr>
<tr>
<td>1993</td>
<td>204</td>
<td>860</td>
<td>233</td>
<td>1297</td>
</tr>
<tr>
<td>1994</td>
<td>182</td>
<td>857</td>
<td>235</td>
<td>1275</td>
</tr>
</tbody>
</table>

Source: Powell River Mill records.
NOTE: The data pertain to the situation in December 31st except in 1994 when the data are for January 31st.
Thus, in December 1973, the mill employed 2600 people, including 233 relief workers, all the hourly staff belong to one of two union locals. In December 1981 employment still amounted to 2335 but following recession by 1985 over 500 jobs had been lost and a fundamental turning point in employment conditions had been reached at the mill. For the first time in the mill's history, salaried personnel were affected as badly as the hourly workers and jobs had been permanently lost. While a number of jobs came back in the market boom of the late 1980s another 700 jobs were lost by 1994, most occurring following the recession of 1991. In January 31st, 1994 the mill's employment was down to 1275 jobs (including 235 relief) and, according to management estimates, which are believed by the union, employment will continue to decline in the near future until it stabilizes at a level of no more than 945 jobs, probably lower.

By 1994 employment levels were less than half of peak levels (and declining) but production capacity was still 80% of former levels (and may increase without any employment increment) and is higher value. The job loss, and the associated increase in labour productivity, clearly has been essential to maintain the competitiveness of the mill (Holmes and Hayter 1994). To a significant degree, the job loss can largely be explained by the effects of technological change and rationalization. To a much lesser, if not precisely known degree, the introduction of more flexible work arrangements has also become a factor since 1990 when the first set of flexibility concessions were agreed upon. Indeed, employment flexibility is considered vital to improving productivity, increasing skill and lowering costs and to ensuring that Powell River remains competitive with greenfield paper mills which are typically organized around highly flexible working cultures. At Powell River, flexibility has principally concerned modifying job demarcation lines among the trades and between trades and production line workers to speed up maintenance work completion times, flattening out the organizational structure of the mill to increase managerial efficiency, facilitating labour-management interaction notably by assigning more responsibility to labour, making entry requirements more rigorous to ensure that any new recruits are (mentally and physically) able and willing to be functionally flexible and through
contracting out. Job rotation and comprehensive reductions in job demarcation are also presently matters under discussion and work flexibility is very much an ongoing issue.

At an existing mill such as Powell River, this search for flexibility is inevitably a difficult and at times emotionally harrowing experience. In this regard, four summary points may be noted. First, in an existing union workplace, flexibility, regardless of the underlying model driving it, is bound to be contentious, not only because it demands previously 'hard fought' concessions from workers, but because flexibility strikes at the central principles of modern unions, namely job demarcation and seniority. For unions these principles serve to eliminate wage competition among workers, constrain managerial autonomy, provide security and discipline among workers and prevent arbitrary job intensification. Contracting out is also a potential threat to these values as well as to the lowering of employment standards. Thus, even forms of functional flexibility that stress enskilling and job satisfaction, along with productivity gains, raise legitimate concerns and any shift to flexibility demands difficult trade-offs for unions to make.

Second, flexibility concessions in unionized workplaces require formal negotiations between management and unions whether these concern individual jobs and workers or are across the board. At Powell River, for example, workplace flexibility has so far been negotiated in two agreements in 1991 and 1992 involving specific *quid pro quos*. Thus, following a wild cat strike in 1988 over a contracting out issue, a subsequent court action required the union to pay MB over $4 million. Instead, in 1991 the union agreed to flexibility concessions in lieu of the fine. In 1992, the union then agreed to a further set of flexibility concessions in return for an early retirement package. Since then, although they have tried, management has been unable to offer workers another acceptable *quid pro quo* in return for more flexibility.

Third, the negative effects of relentless downsizing on worker morale and trust (and potentially on productivity) will likely be reinforced and complicated by flexibility discussions, especially if protracted (which they are virtually bound to be). In the case of Powell River, the fact that agreement to be more flexible has not provided job security for the surviving workforce
has become a problem. Indeed, the mill's workers became embittered when shortly after the 1992 flexibility concessions another round of lay-offs occurred and the jobs the unions thought saved disappeared. For the unions, agreement to an early retirement package and increased job flexibility was traded for job security. For management, job flexibility was traded for early retirement with no implications for job security. Moreover, many workers are now interpreting the *quid pro quos* made regarding flexibility, although consistent with an adversarial approach, as a punitive 'hammer' held over their heads to extract concessions. It might also be noted that even among surviving workers at Powell River flexibility is seen as personally distressing because it creates job loss among friends.

Fourth, in an established Taylorized mass production workplace many managers and workers will not have the appropriate attitudes and skills (let alone formal qualifications) for a more flexible operating culture. Managers can be replaced but new staff require time to learn their new positions. At Powell River, for example, there is some evidence that new, more flexible managers are not highly regarded in terms of their knowledge about the mill and there are problems in implementing a flatter organizational structure.

A critical issue in the transition to flexibility is the question of training. In high performance strategies, emphasis on the development of the ‘core,’ stable and well paid worker will have polyvalent skills. A related them is that education and training is essential to help qualify people for ‘core’ jobs and that, in turn, ‘core’ jobs require an ongoing commitment to education and training. In the particular case of Powell River, labour flexibility - in particular the elimination of traditional job demarcation lines including with respect to management functions - is associated with this idea of the polyvalent worker. The production changes from a commodity producer to a higher value producer of a range of higher quality papers, and the associated technological changes involving extensive use of computers, further reinforce this association.

Yet, in an old mill like Powell River which is downsizing, the question of “skill formation” is a problematical one. The apprenticeship programme, as noted, has been a victim of
downsizing. The team concept in the wood room experienced problems because of difficulties in training everybody to the level necessary to practice job rotation. Extensive job bumping has disrupted traditional OJT. The lack of articulation between the new managers and the work force poses problems for effective, interactive learning. For the work force, commitment to ongoing training and education raises the spectre of ‘testing’. For senior management, training and education is costly and it takes people away from their jobs so that inevitably training is selective and a potential source of dismay for people not chosen. In the context of rapid downsizing who is to be trained? And, it might also be asked what about training for workers (and managers) who are laid-off, particularly those people who lack the skills required by society outside of the mill. Clearly, ‘training’ is not some ‘packaged’ option or magic wand that can be purchased or waved to move the mill from mass production to high performance strategies. Rather, training itself involves significant costs, uncertainties and negotiation.

Maintaining peripheral workforces In situ change

Even in high wage countries, it should not be automatically assumed that firms are generally pursuing value added strategies based around functionally flexible workforces. Indeed, the spirit of the rise of neoconservatism in the US and the UK, respectively associated with Reaganism and Thatcherism, as well as privatization and deregulation, is to provide individual firms with greater latitude in decision making. Many firms have translated this spirit to impose greater control over the workforce, cost cutting and a greater reliance on a peripherally flexible workforce. General economy wide increases in part-time and temporary workers in the US and the UK, for example, illustrate such a shift (Christopherson 1989). Certainly, in unionized environments, attempts to significantly degrade working conditions are likely to be strongly resisted. Yet, as noted, union power in manufacturing industries is in decline, notably in the US and the UK (Clark 1989; Martin, Sunley and Wills 1992). Indeed, the shift towards flexibility is both a cause and effect of the decline in union power (Hayter and Barnes 1992). Flexibility is a
cause of declining union power because through the threat of unemployment firms are able to introduce new flexible work practices that potentially undermine the ability of unions to control job task. An effect because once the power of unions is weakened other firms begin to introduce flexible practices.

In communities with weak or non-existent union traditions, and a history of poor working conditions, the possibilities for entrenching numerical and financial flexibility increase. For example, such a trend has characterized the Sheffield cutlery industry which over the past 25 years has declined drastically in the face of foreign competition from advanced and developing countries (Hayter 1985; Hayter 1986b; Hayter and Patchell 1994). The Sheffield cutlery industry was always characterized by low wages and poor working conditions and during present restructuring firms are emphasizing the pursuit of labour relations emphasizing numerical and financial flexibility. Thus, the most successful firm in the industry is a kitchen knife manufacturer which expanded its employment base from 160 to 500 between 1980 and 1989, was consistently profitable and won export awards (Case A in Hayter and Patchell 1994: 1434-36). Apart from a small core group of 30 male engineers and technicians, however, the firm pays relatively low wages and Its production workforce entirely comprises young non-union female workers who operate as many as six machines. Training is minimal and seasonal upsurges in demand are met by hiring casual female labour. That is, this firm combines the strictures of Taylorism, notably the separation of managers and workers, strong job demarcation of the latter and deskillling through automation, with non-union, numerical flexibility.

**Skill formation of (doubly) peripheral work forces**

In developing (peripheral and semi-peripheral) countries skill formation can occur and the conditions of a peripheral work force enhanced. Kenney and Florida (1994) stress that Japanese (maquila) branch plants in Mexico have hired workforces which are numerically flexible. Yet, even these plants are planning for wage increases. For example, they cite a company which paid
$1.00 an hour in October, 1991 was planning to increase wages to $1.25 an hour in December 1991 and anticipated wages of $2.50 by 1996. All Japanese managers felt wages were being driven up in Tijuana (Kenney and Florida 1994: 31). To some extent, such wage increases reflect increasing demand for labour. The wages are still low and the Japanese maquilas are not planning on formal off-the-job training, job rotation or working circles while unusually high levels of worker turnover obviously reduces on-the-job training (OJT). One possible way that peripheral work forces in peripheral countries can improve their employment conditions exists, however, is provided by Kioke and Inoke (1990).

**Enterprise specific skills** - In the context of Japanese branch plants in Asia, Kioke and Inoke (1990) emphasize the skill formation of workers over time through OJT to create what they term 'enterprise specific skills.' Thus enterprise specific skills are acquired by workers over time and bind firms and workers together according to the unique characteristics of these skills (Patchell and Hayter 1995: 344). From this perspective, increases in worker skill are defined in terms of increased in worker productivity using given machinery. According to Kioke and Inoke (1990), workers increase efficiency through improving intellectual capability to deal with both routine problems and more significant changes that occur on the shop floor (within the factory). In turn, the intellectual ability of workers is gained by the width (horizontal) and depth (vertical) of factory experience and OJT (Figure 12.5). As workers deal with increasing complexity through OJT they create enterprise specific skills.
Both of these abilities can be displayed separately and concurrently as workers switch amongst their range of usual or routine tasks (width or horizontal experience) and as they deal with unusual or difficult situations within each of those tasks (depth or vertical experience). For example, when the product mix changes the firm benefits if its employees have the horizontal skills necessary to adapt to the changes required on a production line. Workers display vertical or depth of experience by choosing and calibrating equipment that will allow those changes to be made faster and allow quality manufacture to proceed unhindered. Similarly width and depth of experience enables workers to be rotated to ensure the unimpeded operation of production when a preferred labour mix breaks down due to absenteeism or fluctuations in experience at some positions. In addition, the introduction of new products is enhanced if workers understand the logic of the production process and can assist in the changeover and calibration of machinery. Koike and Inoki claim that worker experience also proves valuable when the amount of production varies and when production methods are changed.

The ability to deal with problems is another major advantage that the skilled worker brings to their firm, and perhaps best exemplifies the intellectual depth that any worker can bring to the tasks they perform. Dealing with the inevitable problems that arise in production requires that a worker be able to detect the problem, diagnosis it and rectify the problem. Fixing major
problems may be out of a workers depth of abilities, but 'knowledge of the structures, functions, and mechanisms of equipment, products, and the production process itself' (Koike and Inoki, 1990: 9) will enable the worker to perform some maintenance and repair. Koike and Inoki also found workers' intellectual contributions to increase with automation.

The key to the improvement of workers' width and depth of job performance and their intellectual ability to deal with change is on-the-job training (OJT). The character of most of the tasks that a worker performs are indefinable. The worker learns the intricacies of the machines used, the characters or fellow workers, the interrelationships between people and machines, and the process of production in a hands on manner (Koike and Inoki 1990: 10). Workers learn different tasks in a step wise manner by; following an instructor, performing the task under supervision, working independently and then showing results to superiors, seeking assistance only when necessary, and when primary training is completed, continue to incrementally improve their skills by moving on to slightly more difficult tasks. The increase of the horizontal and vertical span of a worker's intellectual skills takes time, and OJT is a primarily an enterprise specific learning process. Off-the-job training can supplement OJT in an effective manner but theoretical instruction can not match the direct transmission of skill offered by the combination of theory and application in OJT. OJT requires an investment by the firm in sustained salary increases and promotion, and although cost is incurred by the slowdown of production as the worker develops skill in process, the development of intellectual enterprise specific skills (ESS) using OJT costs less and is more effective than taking workers away from production entirely for off-the-job-training.

In the context of a stable work force, even once unskilled workers can become more functionally flexible if provided with width and depth of experience. As Atkinson (1987) stresses, adaptability to change and the sustained reproducibility of that capability within the firm are the essential characteristics in creating core work forces. The cooperation necessary for learning skills that are often indefinable, however, need to be nurtured by appropriate institutional arrangements (Peck 1993a). Koike and Inoki emphasize the transmission of skill
within firms. Skill formation is also possible through cooperative learning between firms including between core firms and subcontractors (Patchell and Hayter 1995). Nike, for example, does not simply rely on its Asian network to reduce costs but has taken the time to ensure quality improvements in its first tier suppliers, especially its developing partners (Figure 12.5). In this way, core workforces can occur in the periphery.

CONCLUSION: THE ILLUSION OF THE SPATIAL DIVISION OF LABOUR

Since Hymer (1960) there has been increasing recognition that large corporations spatially sort out their internal labour markets to create distinct corporate locational hierarchies. However, the internal employment geographies of individual corporations can take on a variety of forms and are constantly subject to change within the context of a broader divisions of labour. Corporate restructuring can involve a search for numerical flexibility and this search can focus on inner cities, the suburbs, non-metropolitan areas and developing countries. Corporate restructuring can involve a search for functional flexibility which can also occur in geographically diverse circumstances. Japanese branch plants in Mexico seem to be reinforcing numerical flexibility, in parts of Asia, functional flexibility. Within Asia, Nike relies on different workforces with different types of flexibility characteristics.

If labour markets are examined from a local rather than a corporate perspective, the impacts of the shift towards flexibility on employment differentiation and variability is confirmed. Within the UK, for example, the nature and extent of shifts towards functional flexibility varies within and among regions (Morris 1988; Pinch et al 1989). Within Canada, studies of provinces, resource communities in general and individual resource communities reveal that employment flexibility is developing along different lines in the same place and between places (Hayter and Barnes 1992; Norcliffe 1994; Randal and Ironside 1996). In the US, in metropoles such as New York, labour markets are remarkably diverse; downtown sweatshops contrast with the suburban world scale R&D centres of firms such as IBM and International
Paper. That is, the precise forms of flexibility are finely variegated, varying geographically across region and nation, sectorally across industry type, and by market type and segment. The local economic consequences of flexibility are equally diverse. In some areas there is a burgeoning of high-paid, high skilled functionally flexible jobs; in other areas, well-paid semi-skilled occupations are replaced by low-paid, numerically flexible ones; in yet other areas, employment of all types are lost as firms move to practice flexibility elsewhere; and in still other areas there is a mix of these trends.

The spatial division of labour is therefore a problematical concept. Similarly, Arrighi and Drangel (1986) suggest that traditional categories of core and periphery (and semi-periphery) countries are now less valid as production is organized globally in increasingly complex ways. Using evidence from the garment and shoe industries, Gerreffi (1989, 1995), for example, emphasizes that the growth in international supply networks and production chains is leading to changing distributions for value added activity and the realization of profits that do not conform with these established categories. He argues that core-periphery distinctions are better applied to different nodes within specific geographically complex production systems and chains.