CHAPTER 17

Industrial Transformation and Jobs: Contemporary Dilemmas

From a long run perspective, industrial geographies are constantly shaped by the complex,

fifth Kondratieff, or the post-Second Industrial Divide or the Third Industrial Revolution, at

Table 17.1

Distribution of the World's Workforce, 1970-2000

Country of	Labor Force	Labor Force	Female	Labor Force	Labor Force

*Totals include some countries not listed in table. With respect to female share of total work force, for OECD 1985 data used and for developing regions 1987 data used.

Source: Johnston 1991: 117 and 119

Moreover, there is a widespread tendency for developing countries to invest in education and create an increasingly larger pool of workers who perceive better and more appropriate job prospects among OECD countries (Johnston 1991: 121-122). In the case of the US, many immigrant workers originate from the more rapidly growing NICs (Barnet and Cavanagh 1994: 299).

If there are more jobs globally now than ever before, however, there is also more unemployment. According to estimates provided by the International Labour Organization (ILO) for the early 1990s, more than 800 million people across the globe are unemployed or underemployed (Rifkin 1995: xv). Of this number, around 700 million are estimated to be in developing countries (Barnet and Cavanagh 1994: 294) where the growth in the working population is particularly rapid, along with its feminization as female participation rates continue to grow (Barnet and Cavanagh 1994: 294; Johnston 1991: 116)

Indeed, among the major OECD countries is it is clear that the scope of the jobs challenge has increased since 1970 (Table 17.2). Thus, all of the countries comprising the G7 witnessed significant increases in unemployment levels from 1983 to 1992 compared to two decades earlier (Eatwell 1996b: 3-5). The lowest rate of increase occurred in the US where unemployment rates in the latter period were 1.5 times greater than in the earlier period. The biggest increases occurred in France and Germany. As a result, the prevailing tendency for unemployment rates to be lower in Europe than in either the US or Canada in the 1950s and 1960s has been reversed since the early 1980s. Apart from Japan, however, unemployment rates are significantly higher than they were in the 1950s and 1960s. Even in Japan, unemployment has increased.

Table 17.2

Unemployment in the G7 Countries, 1964-73 and 1983-92

	1964-1973	1983-1992
US	4.46	6.69
Canada	4.23	9.64
UK	2.94	9.79
West Germany	0.79	6.03
France	2.23	9.70
Italy	5.48	10.13
Japan	1.22	2.71

Source: OECD

Moreover, there are few indications that unemployment, especially in Europe, will decline in the near future. Indeed, in Europe the situation in the 1990s seems to be worsening (Rifkin 1995: 199). Many countries have experienced double digit unemployment recently and in Germany unemployment in the early 1990s was around 4 million. In Spain, unemployment of close to 20% has been recorded. The US has managed to increase its overall work force faster than other OECD countries (Table 17.1) while reducing unemployment. In Canada, on the other hand, 1996 unemployment rates, continue to hover around 10%.

Throughout the OECD, including the US, there is concern for the quality of jobs being created and for the uncertain nature of changing work patterns (Christopherson 1989). Barnet and Cavanagh (1994: 293), for example, cite studies which suggest that half of the jobs created in the US between 1980 and 1987 were part-time or contracted out on a part-time basis, often involving women paid at lower wage levels. Kenney and Florida (1993: 271) estimate that part-time workers in general earn between 20-40% less than permanent employees for comparable

work. Part-time workers are also much less likely to have pension plans. Thus, even in the US where the aggregate size of the work force is increasing, there is concern that a growing share of jobs are relatively low paid and unstable. Similar fears have been expressed for Europe (Standing 1992). In addition, peripheral labour segments, traditionally dominated by minorities and women, are increasingly supplemented by white males, especially those with limited education and skill. Indeed, several authors have noted that income polarization is occurring in North America and Europe through various kinds of contracting out strategies in which core workers are replaced by financially flexible workers.

The scope of the job problems is in fact much greater outside of the OECD where job supply problems are compounded by low incomes and meagre support networks. In attempts to broaden opportunities and increase productivity, many developing countries have expanded education and training. As in the case of the OECD, especially given the cost and length of time involved, questions can be asked training and education for what? It may also be argued that better educated and skilled work forces in poor countries are still poorly paid and, bearing in mind that several east European countries already have 'surpluses' of skilled, educated labour pools, add to the competition for work and wage, especially as labour, as well as capital, is increasingly mobile.

Yet, knowledge is vital to the realization of human potential and, even if personal (and community) choices have become more complicated, there is a generally positive relationship between education, income levels and economic growth. Moreover, globally mobile labour can enhance productivity and help both sending and receiving countries (Johnstone 1991) and the search for employment flexibility need not be deleterious to worker and community welfare (Standing 1992; chapter 12). Needless to say, working out socially desirable employment policies will not be easy. One important reason relates to prevailing high levels of unemployment - especially when it is realized that there is no consensus as to why these high levels exist.

alternative explanations of high unemployment - According to the theory of techno-economic paradigms, and related Kondratieff cycle models, periods of deep recession and high unemployment facilitate the structural (the institutional and technological) changes necessary for employment expanding growth, especially for industrialized countries. As noted, globally jobs have been created (Table 17.1). In addition, among OECD countries, the US has been a leader in this regard and Japan's unemployment rates of the 1990s are less than half the rates of the US during the long boom of the 1950s and as low as European rates were then. Moreover, in contrast to previous techno-economic paradigms, industrialization is occurring on a much broader geographic scale.

At the same time, the structural nature of the unemployment problem (and the fragility of the growth that has occurred) raises questions as to why. The theory of techno-economic paradigms itself is organized around technological and institutional innovation and these two perspectives form the basis for competing theories of high levels of unemployment. In the best known argument, technology is seen as the prime culprit (Barnet and Cavanagh 1994; Rifkin 1995). From this perspective, the relationship between technology and employment in the present techno-economic paradigm is different from previous ones. Rather than creating new jobs, technology is seen as replacing the need for work. Rifkin (1995), for example, paints a relentless trend towards automation in which the future is captured by the workless factory and machines that think. Example after example is provided of machines replacing people, including in developing countries. Moreover, for Rifkin (1995: 141), the loss of industrial jobs will soon be followed by the 'last service worker' as the new information technologies replace the need for middle management and low skilled employees in a wide range of service occupations.

Eatwell (1996) offers a different explanation for high unemployment, especially among the OECD countries. He argues that 'Whatever technological changes may have done to the *composition* of employment, there is no evidence that the speed of technological change is behind the growth in unemployment throughout the G7' (Eatwell 1996: 5). He reasons that, if technology is replacing workers, productivity should be increasing. In fact, among all the G7

countries overall productivity growth and manufacturing productivity growth has been much less in the 1980s and 1990s than in the 1960s (Eatwell 1996: 6). The smallest declines have occurred in the US where manufacturing productivity was 3.1 per annum between 1964 and 1973 and 2.8 between 1983 and 1992. In the same time periods, the decline for West Germany was from 4.0 to 2.4 and that for Japan from 9.6 to 5.7. In both periods, overall productivity growth is less than for manufacturing.

Moreover, in his analysis, unemployment has not simply been caused by investment in developing countries - so far the G7 has tended to enjoy a trade balance with the faster growing NICs. Rather, Eatwell (1996: 9) argues is that the primary culprit for high unemployment lies in the slow down of demand. Thus, Eatwell notes that for all G7 countries the rate of growth of real GDP is less in the 1980s and 1990s than in the 1960s. In the US, for example, the annual rate of growth declined from 4.0 to 2.9 between the 1964-73 and 1983-92 periods. For Germany and Japan, the respective declines were from 4.5 to 2.9 and from 9.6 to 4.0. Real GDP growth also declined among developing countries.

In turn, Eatwell suggests that the persistence of the decline in demand into the 1990s stems from changes in the structure of international finance and related impacts on domestic policies. In particular, since the early 1970s, the elimination of fixed exchange rates and the de-regulation of financial markets has provided the basis for an explosion of short term capital movements which are purely speculative. Unfortunately, these movements have undermined the abilities of national governments to regulate the economy as financial speculators have more money to move around than most national governments have in reserve. Consequently, the preferences of the financial community have exercised an increasingly important influence on government policy and this interest has been more concerned with reducing government expenditures and controlling inflation than with maintaining full employment.

These differing interpretations of the unemployment problem lead to differing policy prescriptions. Those who stress the relentless march of technology stress ways of re-distributing available work and income among more people in more equitable ways. Eatwell, and others,

first and foremost, want to regulate the global financial system, notably by reducing what appear to be huge rewards for speculation, for example, by fixing exchange rates or taxing international financial transactions. The two sets of solutions are not necessarily incompatible. Thus, stabilizing the international financial system would permit long term thinking in which investments in physical assets would be given greater priority and allow national governments somewhat more leeway in formulating distinctive polices, including with respect to how to cope with respect to technological innovation and the implications of technology for employment.

industry and the environment - If policies can be introduced to stimulate global GDP and productivity increases, and/or if global demands can be increased by more equitable work and income distribution, then so would industrial output. Whether or not the manufacturing sector's direct employment share remains the same or declines, manufacturing processes need material inputs and energy to create material outputs. Industry has always made great demands on the environment and in the long term processes of creative destruction, environmental values have tended to be destroyed first and if possible re-created later. Indeed, environmental demands are closely associated with income levels and the pattern of industrialization. On a global basis, it is the rich industrial countries, rather than the poorer countries, that on a per capita (and absolute) basis consume vastly more energy and resources and discharge more unwanted pollutants into the air and waters of the world.

The destruction of environmental values by industry has led to major attempts to reduce environmental damage and to re-store environmental resources and amenity. These attempts have generally been more successful in the OECD countries. In contrast, the environmental record of industrialized (former) communist countries has generally been appalling. Moreover, in OECD countries shifts towards more environmentally conscious manufacturing processes are occurring and in the US, for example, Florida (forthcoming) provides systematic evidence in support of a positive relationship between 'high performance' organizations (see chapter 12) and their innovative strategies with respect to work organization, R&D and product development

with innovative strategies to pre-empt environmental problems. In this view, environment and economy are not inevitably part of a zero sum game but can be mutually reinforcing. Indeed, environmental industries themselves have become large scale job generators in some countries.

On the other hand, many developing countries, including the population giants of China and India, are seeking modern industry and modern technology and environmental impacts are often either ignored or dismissed as the hypocrisy of rich countries. Yet, it is not clear just how far industrialization can proceed without violating environmental limits, unless specific measures are undertaken. Industrialization and improvements in the standard of living, for example, need vast supplies of water. In India and China, which contain large populations in semi-arid areas, where is this water going to come from? Resolutions to these problems will require technological and institutional innovations to ensure environmental values are properly incorporated in financial accounting.

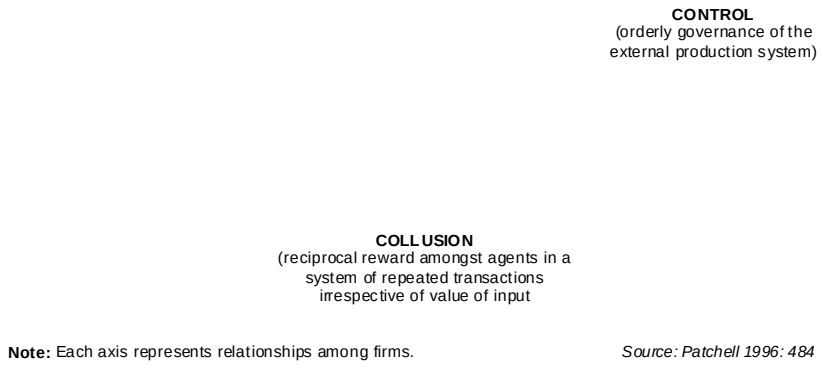
Industry and local development: turning the kaleidoscope?

Globalization, led by MNCs, incorporates powerful forces of standardization, long felt in branch plant economies (Levitt 1970), but in fact extending over the globe. Yet, the forces of localism are powerful too as the lives of the great majority of individuals for the great majority of time are spatially highly circumscribed around home and work (Hägerstrand 1970). Moreover, each locality approaches development problems and dilemmas from a different situation and with a different legacy. Patchell (1996) defines an institutional model of regional industrial change which explicitly incorporates the different ways regions around the world have organized themselves to resolve the problem of industrial transformation.

In Patchell's (1996) framework, region's regenerate economically through human

allow people within regions to mediate the tensions between cooperation, competition and control (and their opposites, respectively collusion, conflict and repression) in the creation of specialized, interdependent and hopefully efficient economies. People within regions develop forms of cooperation (or collusion), competition (or conflict) and control (or repression). Patchell uses the metaphor of the kaleidoscope to express the various choices regions make combining these three processes.

Figure 17.1
The Processes of Regional Industrial Evolution



Note: Each axis represents relationships among firms.

Source: Patchell 1996: 484

control or firms insist on extreme forms of independence thus reinforcing the status quo. In summary, the 'involutionary economy is a trap where short-range self interest cuts off firms and entrepreneurs from the information they need to develop...New and differentiated values are not created; rather, production of old products or services is simply parceled out to more hands' (Patchell 1996: 496).

Taylor 1996). Looking down the kaleidoscope, an emerging theme of crucial importance is the idea of regions (and therefore employees, families, firms, other organizations and production systems) as learning systems and how learning systems vary from place to place. Simply put, the places that comprehensively organize themselves for learning and innovation will increase their chances of meeting the goals of industrial transformation (Hayter 1996).