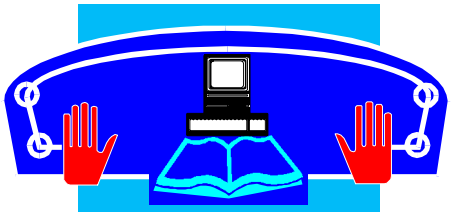

Success In The Works - A Profile Of Canada's Emerging Workforce
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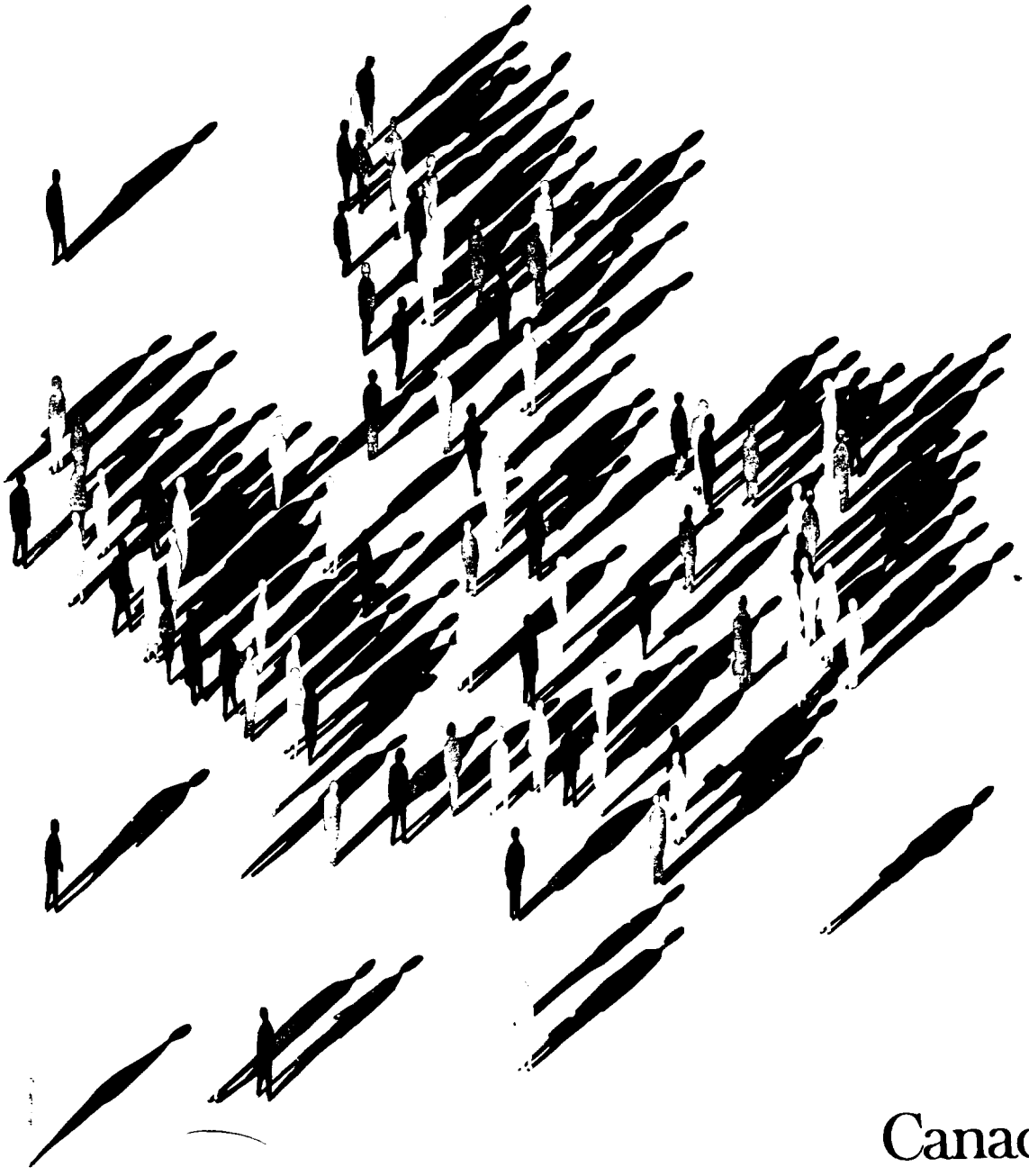
Success inthe Works

A Profile of Canada's Emerging Workforce



Success in the Works

A Profile of Canada's Emerging Workforce

Contents

The masculine gendre is used in a neutral sense and refers equally to females as to males

Introduction and Summary

Advanced industrial nations are learning that people drive economic growth—and that future growth will depend more than ever on a highly skilled, flexible labour force. This paper analyses the trends emerging in labour demand and supply in Canada, and the challenges these trends will pose in ensuring our labour force is adequately trained and prepared.

Canadian industry is making significant investments in technology, equipment and machinery. These capital investments are critical to any industry that wants to stay competitive in today's fast moving, global economy. But the human investment needed to benefit from technology—the investment in education, employee training and skills—is too often neglected. Efforts by the private sector, in particular, often fall short of the investment required.

Such an investment is essential to help workers and, in turn, their employers respond to new economic opportunities. Faced with intense competition in world markets, Canadian firms are developing new products and services, new methods of production, and new ways to improve productivity. These changes are transforming the kinds of jobs available to Canadians-calling for different and higher skills, and often a broader range of skills in all sectors of the economy.

At the same time, Canada's labour force is becoming older, and as a result less adaptable to change. Much of the natural flexibility enjoyed during the "baby boom" years will be lost, as fewer young people are available to enter the labour force. Young people who do look for jobs will need a higher level of basic and entry-level skills. And more than ever before, changes in the workplace must be absorbed by the existing workforce--by workers who have finished formal schooling, and settled into established work patterns. The demographic changes also mean that even greater effort is required to provide the opportunities to women, older workers, aboriginal peoples, visible minorities and the disabled to access skills and opportunities that will enable them to make a full and effective contribution to the labour market.

In short, the economy and the labour force appear to be developing along divergent paths, creating a potential gap between the flexibility and skills of workers, and the skills our economy will demand.

The following pages represent a first step towards a diagnosis of the challenges before us. Part I summarizes information available about how Canada's economy is changing, and how the jobs available to Canadians will change as a result. Part 2 examines key trends which are shaping the labour force, and which will determine the kinds of workers available to fill those jobs. Part 3 looks at how the two sets of data fit together, to identify the labour market problems which may emerge over the next 10 years.

1

Future Work: Labour Demand in a Changing Economy

Canada has enjoyed a strong recovery from the economic recession of the early 1980s. In fact, our recent performance in job creation is one of the strongest in the industrial world. Overall employment is expected to continue growing, at an annual rate of 1.5 per cent until the year 2000. Combined with slower growth in labour supply, discussed in Part 2 below, we should see as a long-term trend a gradual reduction of unemployment in Canada.

Growth, however, does not mean a return to pre-recession economic conditions. Canada's recovery, like that of other industrial nations, has been achieved in part by re-structuring the economy to meet changes in technology, market demands, and international competition. As these changes continue in the years to come, so will the need for re-structuring.

This section outlines the ways in which the new economic conditions affect the demand for skilled labour in Canada.

The Global Context

Canada's success as a trading nation has contributed greatly to our economic development. Our economic prosperity, and our standard of living, depend on how well we compete in the global economy. In the future, our efforts to stay competitive will determine both the number and the kinds of jobs available to Canadians.

Globalized production and the changing pattern of international trade serve to illustrate the nature of the competitive challenge. The value of world trade, measured in constant dollars, is now eight times greater than it was in 1960, as more countries engage in product specialization and the exchange of goods. Canada has maintained a four per cent share of total world exports, but the nature of Canadian exports has changed significantly. Resources accounted for 40 per cent of Canada's exports in 1963 but only 22 per cent in 1987.1 Within that context, Canada's transition from a resource—to a knowledge-based economy—is vital to gaining a competitive advantage linked to the flows of technology which lie behind traded goods and services.

For a long time Canada enjoyed a natural advantage in world markets because of its rich supply of natural resources. By supplying the world with raw materials, our forestry, agriculture. fishing and mining industries gave Canadians a very high standard of living.

But since the early 1980s our resource industries have faced increasing competition from other countries and a world surplus of many commodities. While Canada's resource heritage will always be important, it can no longer guarantee continued economic growth and prosperity.

Canada's foreign trade now relies heavily on the export of manufactured goods. This is not expected to change significantly in the medium term. But with growing competition from newly industrialized countries, many Canadian manufacturers are shifting production toward higher value-added, specialized and information-based products.

In addition to relative international costs of labour, technology is also playing havoc with traditional trading patterns and the "natural" advantages some countries have enjoyed. The technologies of production. transportation and communications are eliminating barriers of distance or national boundaries—allowing firms to respond rapidly to market demand around the world, and deliver a product faster than ever before.

What counts for Canada now are not natural advantages, but the "engineered" advantages we can create through technology, innovation and a skilled work force. The growth industries today are those which develop the people with skills to harness technology, create a high value-added product. and improve productivity. These are the industries which will determine economic growth for the future.

Canada's Productivity Record

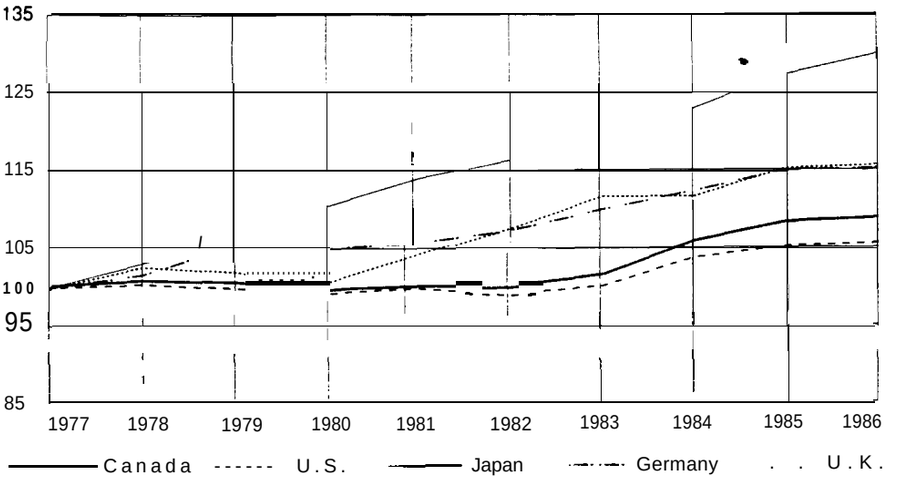
Productivity measures the value each employed person contributes to the economy through his or her labour. By enriching the skills of workers and harnessing technology, that value can be increased. This growth in output per worker is the key to continued increases in Canadian living standards.

Productivity growth rates indicate, in a general way, a nation's ability to compete in world markets, Canada enjoys a high level of labour productivity, second only to that of the United States, but we are losing ground to our competitors.

Japan, Germany, and the U. K., for example, have consistently increased productivity levels faster than Canada in recent years. Between 1977 and 1986, annual productivity growth in Germany and the U.K. was twice that in Canada; in Japan, productivity grew more than three times faster than in Canada.

Figure 1.1

Comparison of Productivity Trends, 1977-86



Index of real GDP per employed person (1 977= 100), using 1980 prices and US dollar exchange rates.

SOURCE. Index dewed from OECD (1988), *Historical Statistics*. 1960-7986

Canada is falling behind major competitors in productivity growth.

Productivity, Technology and Innovation

Our competitors are improving productivity through higher technology, product innovation. and enhanced training of their labour force. Here too Canada continues to lag behind many other countries.

A report by the Economic Council of Canada suggests that Canadian industry is now adopting new technologies, and more innovative manufacturing procedures, at an accelerating rate. Between 1980 and 1985, 76 per cent of Canadian firms introduced some form of automation in their factories, and 85 per cent of all companies surveyed expect to be using computer-based technology by 1990. The same companies estimate that 39 per cent of their employees will be using micro-electronics on the job by 1990, compared with only 16 per cent in 1985.[2] The companies that adopt (and adapt) new technologies are more efficient, more productive, and growing more quickly than their competitors.'

[f Canada is to hold its own in an era of global competition, it must embrace technological change more rapidly and successfully than ever before. But the extent to which technology is harnessed depends upon the skills and knowledge of the people who direct. operate and maintain it. In this context. technology, innovation and human resource development are the key determinants of productivity growth and social progress. The requisite human resource development involves investment principally in education and training, and an appropriate training system which will ensure the provision of relevant skills.

Technology in the Workplace

The emerging technologies which will dominate changes in the workplace through the 1990s and beyond have varying employment implications. While specific discrete innovations may have major impacts in one or two sectors of the economy, most observers agree that pervasive, generic technologies will have the greatest macro-economic effects, especially in the sphere of employment. information technology—the convergence of computer technology and related developments in telecommunications—has been identified as being by far the most widespread and influential in terms of its impact across all sectors of the economy.'

[n the resource sector. manufacturing and many service industries, there will be a shift towards more technically sophisticated equipment and more highly skilled employees. Companies which prosper will add higher value—that is, more skills and knowledge per dollar—into their products and services than their competitors. And they will adopt new production processes. such as flexible manufacturing, which allow shorter production runs with products customized to meet a client's individual requirements. These new production processes require workers to adapt to frequent changes in the tasks they are expected to perform.

Job Creation

In a recent report, the OECD concludes that "over the long run. increases in productivity may well continue hand in hand. as they have in the past, with increases in jobs and the standard of living."[5] Technology stimulates economic growth through greater productivity, higher incomes and increased demand for other goods and services. This in turn creates new kinds of jobs. usually demanding a different set of skills and often higher levels of skills.

Technology will render some jobs obsolete, and some workers will be displaced. But when this happens, the result is often an increased demand for workers in other occupations. A study by the Economic Council of Canada found that between 1971 and 1981, while growth in labour productivity due to investment resulted in a 10 per

cent decline in employment, this was more than offset by growth in final demand which increased employment by 39 per cent, a net gain of 29 per cent.' Even within individual firms, technology tends to increase, rather than decrease, the level of employment. Data collected by the Economic Council of Canada suggest that between 1980 and 1985. the number of jobs grew more rapidly in technologically intensive firms than in other firms.'

Skill Upgrading

To date, the impact of technology has been felt most widely by office workers through office automation. In the future, the impact will be more broadly based. Technology will change the skills required by employees in almost all occupations.

In some cases, workers will be required to upgrade existing skills. One study in Britain suggests that technological changes have already increased the skill requirements in 42 per cent of all manual labour occupations, and 55 per cent of all non-manual jobs.[8] Canadian workers can expect a similar increase in skill requirements as global competitiveness spurs the diffusion of new technology.

Manufacturing firms are expected to introduce process automation at an increasing rate. This means that production workers will need to develop basic functional skills such as improved literacy and numeracy to operate computer-based equipment. For example. machine operators are becoming less involved in "hands-on" production skills. and more involved in monitoring and controlling the production process using built-in electronic testing equipment.

The Canadian Automotive Industry Human Resource Task Force, in its 1986 report.' found that workers and managers in that industry need to master more skills than ever before. including skills not required of them in the past, to use these skills more frequently in the course of their daily work, and to adapt these skills more often to changing situations. Subsequent sector studies of the Canadian Automotive Repair and Service Industry, the Electrical and Electronics Manufacturing Industry, the Canadian Metal Mining Industry, and Canadian Municipalities all identified the critical need to upgrade. broaden and extend the skill base.[9] In these studies, many practical examples are given to illustrate the new skill and training-requirements. For example. many automotive companies believe that to implement statistical process control (SPC) technology effectively, they have to involve most of their workforce in using the system.[11] This means a massive effort to train everyone from plant managers to workers on the shop floor.

As this development becomes widespread, there are implications for educational requirements. In Japan. where process automation is widely used, an increasing portion of production jobs call for college graduates or, at a minimum, secondary school graduates with a sound knowledge of science and mathematics. After recruitment. companies spare no expense in training. By some estimates, roughly 20 per cent of a Japanese recruit's time in the first few years of employment is devoted to on-the-job training.[12]

Changing Skills

In many cases, workers will be required to develop a different set of skills, rather than becoming more proficient in skills they already possess. For example, when using computer-assisted engineering and design systems, design engineers do not need to become more proficient at the drafting board; they need to learn a new process for generating designs and blueprints. While the theoretical body of knowledge remains the same, the specific skills required to apply that knowledge are quite different.

In some specialized trades, workers will need frequent restraining to keep up with technical developments. developing new skills to replace those that are outdated. The state of "permanent revolution" that information technology introduces to products and processes requires a recurrent remolding and upgrading of knowledge and skills. This means frequent restraining over the course of a person's working life if he or she is to stay abreast of current basic job requirements.[13]

[n production machinery, for example, there is a shift away from pneumatic and electro-mechanical control systems towards electronic and micro-electronic systems. AS the older types of systems are replaced, repair and maintenance technicians need to develop a different technical competence, often involving new practical skills.

Multi-Skilling

Many workers will need not only different or upgraded skills, but a broader range of skills. The new computerized process technology makes it possible to organize and manage work in different ways, using flexible manufacturing techniques. Such techniques are increasingly important to help firms meet objectives regarding productivity, custom-designed production, and quality control. " They also demand multiple skills for a number of jobs as the boundaries between many traditional jobs are eliminated.

Production workers who once had narrowly defined responsibilities are becoming part of multi-skilled, self-managing production teams. Individual workers may be called upon to schedule production runs, conduct quality control inspections, set up and repair equipment. and more—depending on the specific need at the time. This approach calls for greater analytical, problem-solving, communication and interpersonal skills on the part of workers.

Sectoral Shifts in the Economy

Like other advanced industrialized countries, Canada's economy is increasingly dominated by the service sector, which accounts for the largest number of jobs. In 1971, for every person employed in primary goods production, there were two employed in manufacturing and seven employed in services. Today, there are 12 people in services and three in manufacturing for every one person employed in primary goods production.)' Moreover. since 1981, virtually all of the 1.25 million net new jobs created in the Canadian economy have been in the service sector.'" The expanding service sector will continue to be the main source of new jobs in the medium term. However. the diversity of the service sector in terms of growth and skill requirements creates major challenges for the matching of people with jobs.

There are two quite distinct aspects to this issue, related to the lower and higher skill segments of the service sector labour market.[17] One represents "traditional" service industries such as personal services and retail trade which are characterized by low productivity and low-paid employment. Today these jobs are filled largely by women and young people. Demographic and labour force participation trends

suggest that the supply of such workers will grow more slowly in the future and may not meet the expected increases in employment demand. Employers may be forced to improve the quality of employment (including better wages) to attract job applicants and keep turnover to a minimum. Human resource planning and development will be important as these services operate in increasingly competitive markets characterized by technological change.

At the other end of the spectrum, more highly skilled workers in managerial/professional/technical occupations will be required in the future in the "dynamic", high value-added service industries such as business and information services. These industries are oriented towards productivity growth and the adoption of new technologies.

The Relation Between Manufacturing and Services

The growth of the service sector does not mean that manufacturing is becoming less important. Rather, it is a reflection of the increased importance of services in the production process. A wide range of jobs in high-skilled services—such as financial services, marketing, and technical research—as well as jobs in construction and retail sales, depend directly on a healthy manufacturing sector. At the same time. these same services provide essential support for a productive manufacturing sector. As more goods-producing firms are contracting out specialized services, the service industries will continue to increase their share of output and employment. This development is also tending to raise the average skill level required in the service sector overall.[18]

As manufacturers develop more sophisticated, value-added products, they are including substantial service components as part of those products. For example, a servicing and training package is an integral part of the product offered by most large-scale computer manufacturers. This kind of high-skilled service is far different from the traditional view of service jobs as requiring generally unskilled labour.

Productivity and Services

Because services are so central to the economy, improved productivity in services will be essential to Canada's economic growth. However, overall labour productivity growth in the service sector has been weak in the 1980s relative to the goods sector. Output per hour in the service sector has advanced at an annual rate of only 0.4 per cent between 1981 and 1987, compared to 3.0 per cent in the goods sector[19].

In recent years. however, certain service industries have made significant improvement over their productivity growth rate of the 1970s. including transportation and storage, communications, and wholesale and retail trade. There is evidence that many other services will enjoy significant increases in productivity over the next few years. As they do, the types of skills service workers need will change.

For example. a recent U.S. study of the insurance industry found that while the number of life insurance policies increased by 49 per cent between 1970 and 1980, employment in the industry grew by only 10 per cent. Within the industry, there was a significant change in the distribution of jobs, and in the skills needed to perform those jobs effectively. Clerical jobs were often upgraded. as the tasks of data entry and analysis were combined using computers and communications networks. Between 1978 and 1981, professional and technical jobs grew almost 40 per cent faster than the average job growth in the industry, while managers and officers grew nearly 60 per cent faster.[20] Similar. if less dramatic, changes have occurred in the Canadian insurance industry,"

Services and Technology

In the drive for greater productivity, service industries are increasingly **taking advantage of sophisticated technologies. Many service industries have already invested as much** in technology and equipment as have manufacturing industries.[22] In fact many services have been, and will continue to be, the focus for some of the most intense technological innovation in Canada—especially communications and other utilities. finance, insurance, real estate and business services.

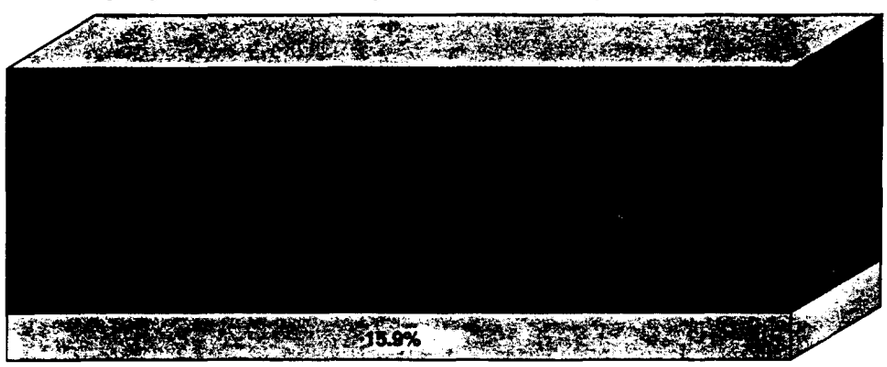
As the technological sophistication of this sector increases, the market for new and existing services will expand. Many of the newly emerging service jobs require skills and knowledge which were not even available 20 years ago.

The Role of Small and New Businesses

In recent years, new and expanding small businesses have been the most important sources of job creation—in all sectors and all provinces. Between 1978 and 1986, 75 per cent of net new jobs were created in firms with fewer than 20 employees.

Figure 1.2

Net Employment Growth by Business Size, 1978-86



SOURCE. Statistics Canada, Small Business and Special Surveys Division, (unpublished) 1989.

Between 1978 and 1986,75 per cent of net employment growth occurred in small business.

Small Business and Training

If small business is to continue to be innovative and capable of responding to its changing environment. it needs qualified personnel with flexible skills. Unfortunately, many small and new firms are undercapitalized, and are so pre-occupied with financial concerns that human resource planning and training get insufficient attention. As a result. productivity and profitability suffer from rapid staff turnover and inappropriate skills among employees.

At the 1988 conference of the International Council for Small Business, training was identified as a key issue facing smaller firms. Various experts focused on concerns such as labour shortages. staff training, education in entrepreneurship, and the importance of long-term human resource planning.

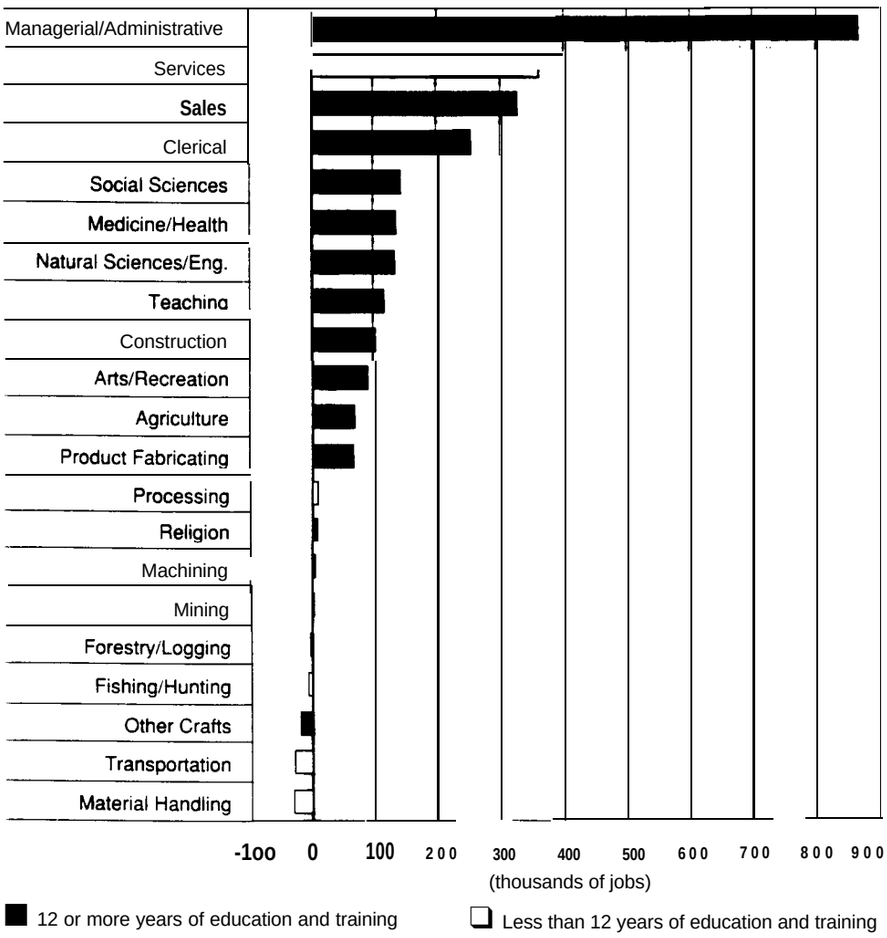
At present, smaller Canadian firms depend on a ready supply of skilled workers. In future they will be facing increasing competition for that skilled labour force as the expectations of all employers rise. To secure their profitability, smaller firms will need support for their own skills development activities. Because small business plays such a central role in Canada's economy as a whole, Canada's productivity growth will depend on how well these needs are addressed in the future.

The Changing Occupational Structure

All of these changes will result in significant shifts not only in the skill requirements within specific occupations. but in the mix of occupations available to Canadians.

Figure 1.3

The Changing Occupational Structure, 1986-2000



SOURCE Employment and Immigration Canada, 1989

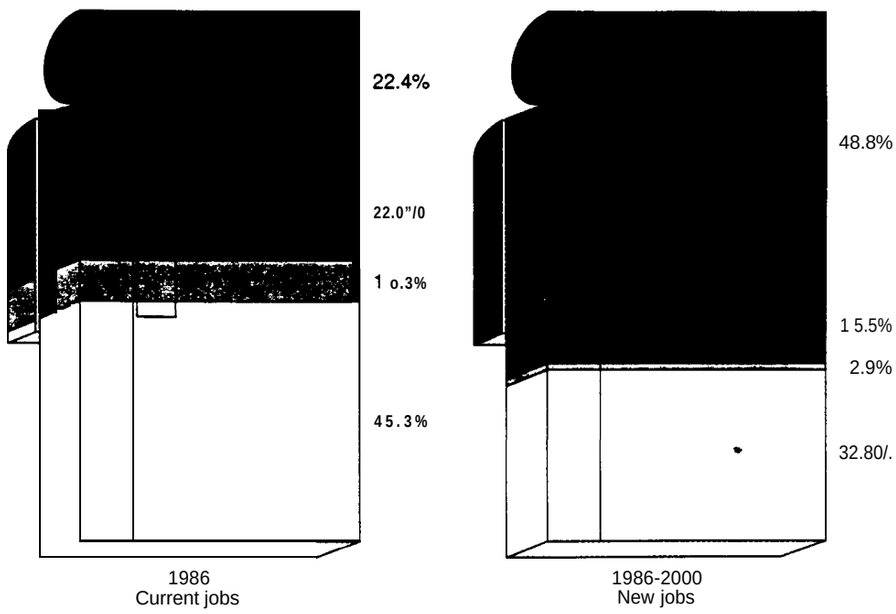
Predicting these shifts is difficult. given the complex interactions between market demand, growing international competition, and technological change. But the general direction of the occupational shifts, as shown above, is clear. Occupations which require lower levels of education and training will represent a declining share of employment growth. In fact. job losses will occur in five broad occupations which on average require less than secondary school education. The demand for highly skilled workers, especially in managerial and administrative occupations, will rise dramatically.

Rising Educational and Skill Requirements

Of all the jobs created between 1986 and the year 2000, 64 per cent will require more than 12 years of education and training; almost half of these new jobs will require more than l 7 years of education and training.[2,3]

Figure 1,4

Rising Skill Requirements



SOURCE. Employment and mmigration Canada, 1989

Many jobs of the future will require higher skill levels.

These projections are likely a conservative indication of future skill requirements. They reflect the shift in occupational mix but are based on the **assumption** that. within individual occupations, education and training requirements will not change between 1986 and 2000. When the types of skill shifts within occupations discussed earlier are taken into account. it is likely that the projections underestimate the increase in skill requirements.

Projected requirements show a marked contrast with the skill requirements of existing jobs. Currently 55 per cent of jobs require 12 or less years of education and training. This compares to only 36 per cent of the new jobs that will be created.

Occupational Change and Unemployment

Many of those who are displaced by the changing demand for some occupations will find it increasingly difficult to move into new jobs without restraining and education. Even today, after a period of strong employment growth, job losers—those who have been laid off—represent more than half the unemployed.

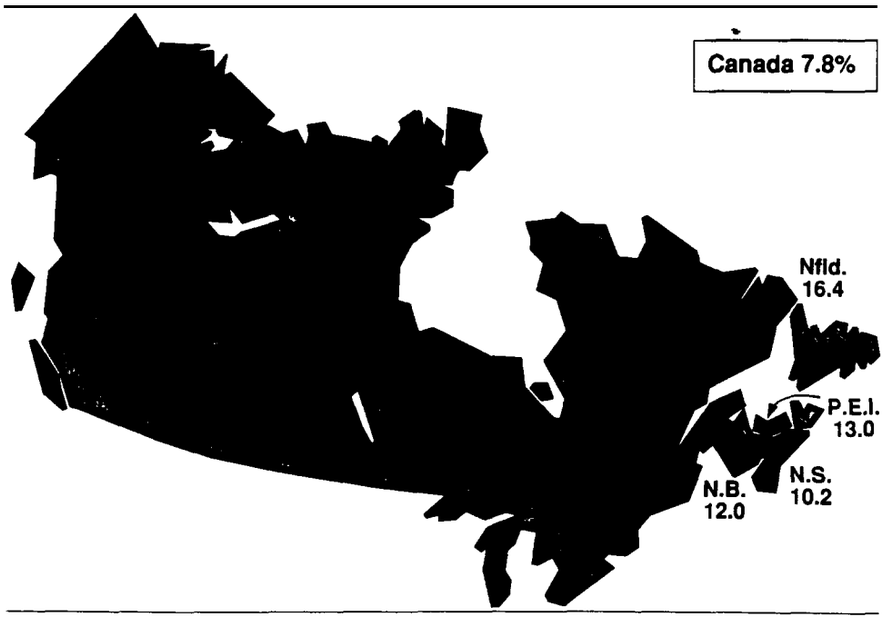
The workers who are most likely to be laid off are those in occupations where job growth is lowest—the jobs which require lower skills. in many cases, their options will be limited to extended unemployment, or jobs for which they lack the necessary skills. A recent Statistics Canada study indicated that the probability of permanent lay off was highest for those with lower levels of education, especially those who had not completed secondary school .24 Continuing education and training will play an increasingly central role in helping these workers adjust to change.

Regional Variation

The past six years of economic expansion have seen Canada's unemployment rate come down from more than 12 per cent to slightly below 8 per cent. National averages mask important differences in regional performance, however. Unemployment rates vary widely across the country; the annual average in 1988 ranged from 16.4 per cent in Newfoundland to just 5.0 per cent in Ontario. The disparity gap—the ratio of highest to lowest unemployment rates—has declined from 4.74 in 1961, to 3.72 in 1981, and to 3.28 in 1988.[25] Nevertheless, the gap is still large and the Atlantic provinces, Quebec and British Columbia continue to have significantly higher unemployment rates than the rest of Canada.

Figure 1.5

Unemployment Rates by Province, 1988



SOURCE. Statistics Canada, *Historical LabOur Force Statistics (1988)*

Disparities among the regions of Canada are linked to differences in regional industrial structure. The economies of the regions outside of central Canada depend heavily on resource commodities and products sold in the international market, such as paper, petroleum, fish. lumber and grain. These commodities are subject to wide and often unpredictable price movements that lead to fluctuating regional incomes. By contrast, the more diversified economies of central Canada exhibit steadier growth and are less susceptible to the boom-and-bust cycles associated with specific markets for raw materials.

It is also reasonably clear that a major part of the differences in regional earned income per capita can be attributed to the disparities in overall industry productivity. Five characteristics of economic activity in the low-income/high-unemploy merit regions stand out: small scale and relative labour intensity; a general lack of corporate agglomeration: low education and skill levels of the regional labour force; lags in the adoption of new technology; and high degrees of seasonality or cyclicality in demand.[26]

Diversification and a general strengthening of the economic base of the regional economies remains an objective of governments in Canada, The new federal economic development agencies located in Western and Atlantic Canada were established to encourage product, market and technology developments that would result in industry-wide productivity improvements and import replacements.

The reduction of disparities will largely be accomplished through the realization of the entrepreneurial aspirations of local residents in each region. The difference between fast and slow growing regions appears to lie in the rate of job creation in expansions and births of new firms. Results from a Canadian Dun and Bradstreet data base study showed that variations in job creation through births of new firms account for most of the observed regional differences in net job generation.[27]

Further growth opportunities for small firms are anticipated as flexible manufacturing technologies become more widespread. In a rapidly changing international economy in which product life cycles are shortening and increasing fluctuations exist in market demand, flexible manufacturing may be-essential to maintaining a competitive edge. The decentralized, small-business orientation of regional economies may prove to be an important incubator for the entrepreneurial firms best suited to make full use of flexible manufacturing.

Here also. information technology may provide opportunities to overcome regional disparities. The same developments that are eliminating the importance of distance in global competition will also be opening economic doors for the regions of Canada. The modern telecommunications infrastructure is particularly important, since it enables firms in remote and rural areas to have access to up-to-date information and to participate in networks hitherto confined to those in the major centres.[28] There is consequently great interest in policies designed to favour the type of infrastructure that could attract the newer types of industry and to ensure an adequate supply of skilled labour required. Education and training, in conjunction with plans for regional economic development, can help overcome some of the traditional disadvantages faced by some parts of Canada.

2

Future Workers: Labour Supply to the Year 2000

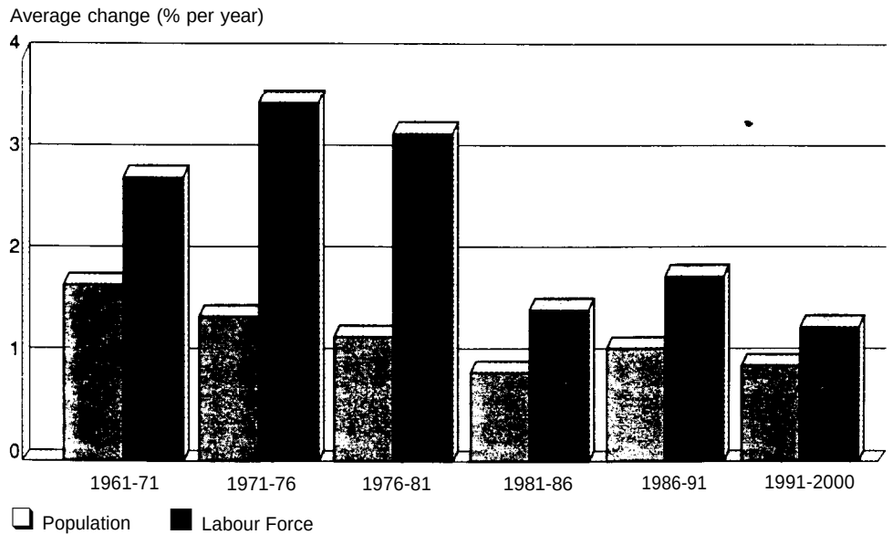
Many of the changes taking place in labour demand will be naturally absorbed by Canada's workforce through normal adjustment processes. Canada has always had a very dynamic labour market, with a constant flow of people moving in and out of the employed workforce and from one job to another. Typically each year about four million people out of a labour force of 13 million go through some form of job change, in response to seasonal and market demands and changing opportunities.

The natural ability of Canada's labour force to adapt to change will be affected by demographic shifts in the years ahead. The labour force as a whole will grow more slowly throughout the next decade. Two principal factors explain the slowing labour force growth. Low birth rates in the 1970s mean that the Canadian working age population will grow at less than 1.0 per cent per year. And the participation rate of women in the labour force will rise more slowly than the rapid increase in recent years,

The labour force will grow at an average rate of only 1.2 per cent over the 1990s. Only about 180,000 persons will join the labour force each year, compared to over 200,000 during the 1980s and over 300,000 during the 1970s, when the "baby boomers" were entering the labour force.

Figure 2.1

Population and Labour Force Growth, 1961-2000



SOURCE Statistics Canada, Census of Canada, *Historical Labour Force Statistics (1988),* and Employment and Immigration Canada, 1989,

The labour force will grow at a slower rate in the 1990s than in the previous two decades.

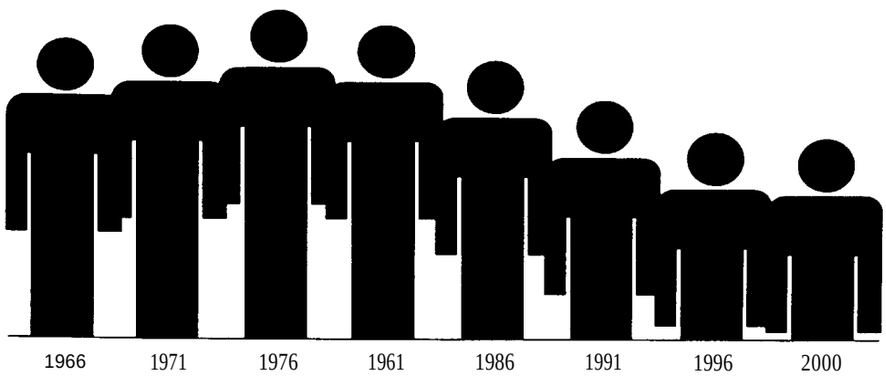
As a result, the pressures of adjustment will affect the existing workforce, especially middle-aged and older workers, more directly than in the past. Employers will be less able to rely on young workers fresh from school to meet their new skill requirements. Groups who now face constraints to their full contribution to the labour force—such as women, native people, and visible minorities—will need to be given greater opportunity to play an increasing role.

An Aging Labour Force

With slower population growth, young people aged 15-24 entering the labour force will make up a smaller portion of the available labour supply. Their share of the labour force fell from 26 per cent in 1971 to 22 per cent in 1986, and will fall even further to 17 per cent by the year 2000.

Figure 2.2

Youth Share of the Labour Force, 1966-2000



SOURCE: Statistics Canada, *Historical Labour Force Statistics*, (1988) and Employment and Immigration Canada. 1989.

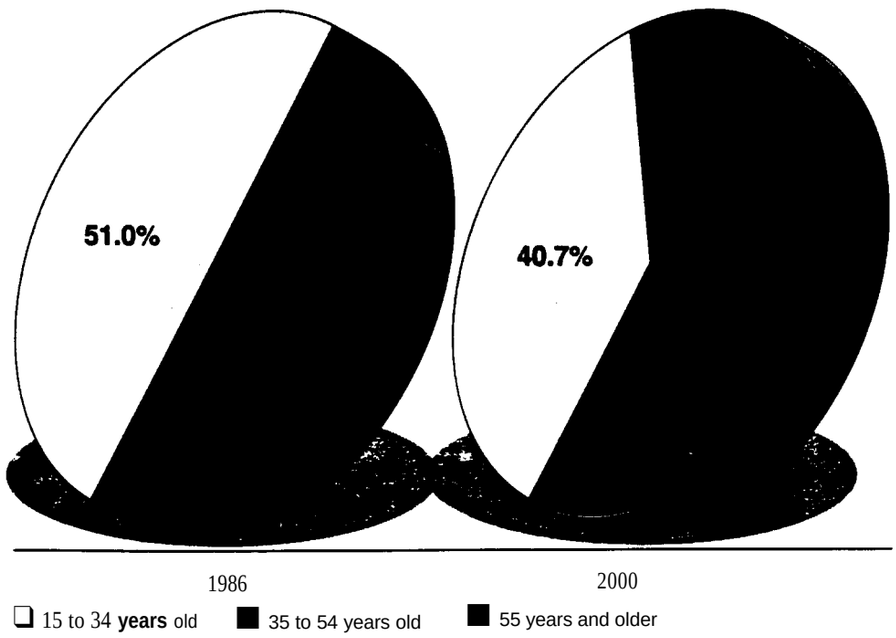
The proportion of youth in the workforce will decline throughout the 1990s.

Older Canadians will constitute an increasing proportion of the population and labour force in the next two decades. In 1986, about 49 per cent of the labour force was over the age of 34. By the year 2000, this figure will increase to almost 60 per cent of the labour force.

The implications of this significant demographic transition will continue to be felt for decades to come. Historically, Canadian workers have been highly mobile, creating substantial geographical flexibility in the labour force. But much of that mobility has been concentrated in particular groups — the combination of major immigration and internal migration flows from farming communities in the 1950s, and the entry of baby boomers in the 1960s and 1970s.[29] However, in the 1990s the entering group of young workers will be smaller, there will be less transition to urban employment from agriculture, and immigration will likely be relatively low by comparison to earlier times.

Figure 2.3

The Middle Aging of the Labour Force



SOURCE: Statistics Canada, *Labour Force Annual Averages, 19S1-1988.* Employment and Immigration Canada, 1989.

There will bean immediate need to retrain established workers to meet changing skill requirements.

In the past, a large and growing supply of young workers shielded many older workers from the effects of economic swings. During downturns in the economy, younger workers are the first to lose their jobs. They are less protected by seniority, and they have not established a firm attachment to the labour market. This focusing of recessionary impacts on young people was a matter of some considerable concern during the early part of this decade when youth unemployment reached 21.3 per cent, and would have been even higher if many young people had not chosen to postpone their working lives and stay in school. In the future, with a smaller proportion of youth in the Ia'hour force, the effects of economic adjustments will reach older workers more quickly, requiring them to demonstrate greater flexibility and adaptability than has been required of them in the past.

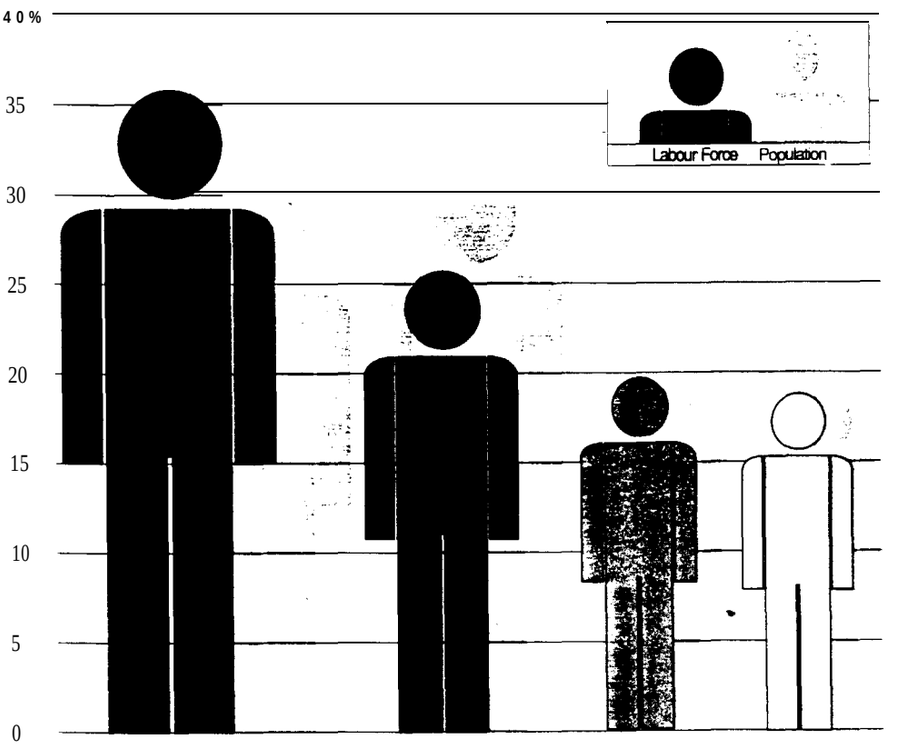
Young workers have also provided employers with a ready supply of new skills. During upturns in the economy, younger workers were always available to fill new jobs, such as the demand for computer programmers during the 1970s. They will not be so readily available in the future, again requiring that the existing labour force respond to future skill demands.

Access to Skill and Employment Equity

As the labour force grows older and more slowly, its composition will change in other ways. The group which has in the past been considered the core of the labour force, males aged 25-44, will represent a significantly smaller proportion of the labour force by the year 2000. As a result. it will become even more important to ensure that all Canadians who wish to participate in the world of work are given the opportunity to develop their skills and are supported in their efforts to make a full and effective contribution to the labour market.

Figure 2.4

Share of Labour Force and Population, 1986



■ Canadian born adult males (25 years and older)
■ Canadian born adult women (25 years and older)
❑ Canadian born youth (1 5-24 years)
•I Immigrants

SOURCE. Statistics Canada, 1986 Census *of* Canada

Employers must be encouraged to support groups, such as older workers. **women, aboriginal** peoples. visible minorities and the disabled. who have traditionally faced constraints in the economy. to participate more fully in the mainstream of the work force.

Older Workers

Employers will find it more difficult to fill entry-level positions with new graduates who are trained in emerging skills. To meet changing skill requirements in the workplace. an increasing number of established workers will need restraining and skill development. This will require a change in attitude on the part of some employers. and some older workers. who question whether restraining is a worthwhile corporate or personal investment.

Studies show that older workers are far less likely to change jobs, employers. or occupations than younger workers. A Statistics Canada survey found that in 1986, only five per cent of workers aged 45 to 54 changed occupations, compared to 20 per cent of workers aged 20 to 24.[30] Older workers have invested a great part of themselves in jobs and careers they expected to last a lifetime. In many cases. concerns about losing seniority represent another barrier to change.

Older workers are also less likely to move in search of a new job when they become unemployed. A Statistics Canada survey of workers suffering permanent job loss between 198 I and 1984 found that 20 per cent of individuals under the age of 35 moved to look for work. The proportion who moved dropped to l O per cent for those between 45 and 54 years of age and to 7 per cent among those 55 years of age and older.[31] The resistance to relocate is greatest for those who have families, where moving might affect a spouse-s employment and disrupt children's education. Because of financial commitments such as a home mortgage, older workers also have less flexibility than younger workers to take advantage of alternatives such as a return to full-time education.

The employment outlook for the next generation of older workers, those who are currently aged 35-44, is considerably better than for the present generation of older workers. Today older worker employment is concentrated in industry sectors with limited employment growth and vulnerable to economic restructuring with changing trade relations. Many declining industries, such as tobacco, ship-building, leather, and textiles and clothing, have a concentration of older workers because younger workers have already been laid off or were never recruited. The younger cohort is employed in industry sectors that will account for 75 per cent *of projected employment growth to 1995, in contrast to employment of the present older worker cohort (aged 45-64) in sectors with 28 per cent growth potential .32

Nonetheless. the labour force position of older workers today and in the future commands attention. Older workers have a greater tendency to long-term unemployment. worker discouragement and labour force withdrawal once unemployed. These concerns are supported by the employment statistics. Older workers represent 19 per cent of all unemployed but 30 per cent of long-term unemployed. Some 35 per cent of all unemployed older workers are long-term unemployed This does not take into account 13,000 discouraged older workers who are not in the labour force because they believe no work is available .3' Up to 40 per cent of older worker long-term unemployment is a result of displacement; that is, the loss of a permanent job as a result of industrial restructuring. As the structure of the economy evolves and the skills required by industry change and increase. older workers in particular will need assistance to adjust to the demands of the labour market.

Women

Today, women comprise 42 per cent of the labour force and projections are that women will account for over half the labour force in another 10 years, The importance of female workers in meeting the demands of the economy is evident; between 1981 and 1986. total employment rose by 534.300 with women accounting for 95 per cent of this increase.

Table 2.1

The Occupational Segregation of Women

Complete List of Female-Dominated Occupations	Partial List of Male-Dominated Occupations
Supervisors (Nursing)	**Electrical Engineers**
Nurses	**Civil Engineers**
Nursing Assistants	**Mechanical Engineers**
Dental Hygienists	**Police** Officers
Dietitians and Nutritionists	Industrial Mechanics
Supervisors (Secretaries and Typists)	Auto Mechanics
Secretaries	Construction Electrician
Typists, Clerk-Typists	Electrical Equipment Repair
Receptionists	Plumbers and Pipefitters
Telephone Operators	Carpenters
Cashiers and Tellers	Machinists
Sewing Machine Operators	Welders
Chambermaids	Farmers
Babysitters	Truck Drivers
Domestic Servants	Construction **Labourers**

SOURCE. Statistics Canada, Census 1986. special tabulations

These are only 15 occupations in which women represent more than 90% of the labour force. Men represent more than 90% of the labour force in 152 occupations.

Despite [heir sizable contribution to employment, women are not equally represented in all occupations. For example, 26 per cent of all female workers **are in** 15 occupations which generally pay low wages and where 90 per cent of the job holders are female. By comparison. there are 152 occupations which are 90 per cent male-dominated.[34] Regardless of occupation. in 1986, women employed full-time earned 66 cents for every dollar earned by men working full-time.[35] Further, there are no occupational categories where the average earnings of women exceed those of men.

Both the occupational segregation of women and the wage gap are indicative of the undervaluation of women's work—a situation which must be addressed to fully develop and utilize the talents and skills of half of the labour force. thereby ensuring economic growth and international competitiveness.This occupational segregation of women unnecessarily restricts the ability of the labour force to adjust to future demands. The recruitment of more women into non-traditional jobs will be essential.

There are indications that this is already happening in some fields. The female share of employment in male-dominated professions rose from I I.4 per cent in 1971 to 18.6 percent in 1981. and those aged under 35 accounted for over 60 percent of the increase.[39] This evidence suggests that women are making progress. however slowly, in their participation in male-dominated occupations, especially those requiring advanced education. Fifty-three per cent of community college and university graduates in 1986 were women.]' This graduation rate will likely persist. As it does. there will be an increasing number of skilled women with post-secondary education entering the labour force.

To increase the presence of women in occupations which are now male-dominated, greater opportunities for training and active recruitment practices may not suffice. Complementary measures to reduce impediments that have constituted barriers to full participation will also be required. This will involve greater employer recognition and action to permit women to pursue work and career opportunities on an equal footing with men.

Aboriginal Peoples

Aboriginal peoples have a relatively low labour force participation rate. Those who do seek work face substantial barriers and subsequently suffer extremely high levels of unemployment. In 1986. the unemployment rate for aboriginal peoples of all ages was 23 per cent: for aboriginal youth. the rate was 31.6 per cent. " At the same time. with a relatively high birth rate, the aboriginal population is. on average, young and represents an important human resource that has largely been undeveloped and underutilized.

Visible Minorities

While Canada is already a pluralistic society, shifts in immigration patterns will make it even more culturally diverse in nature. The percentage of visible minorities in the total population may approach 10 per cent over the next decade depending on the level of immigration. This compares with approximately 5.6 per cent in 1986. The proportion of visible minorities. who at present comprise 60 per cent of total immigrants to Canada. is anticipated to increase to 70 per cent by the turn of the century. and to constitute approximately half of the annual growth of the labour force.'" The skill levels of ethnic minorities vary greatly, but the proportion with higher-level qualifications is above average. AS a source of skilled or potentially skilled labour. visible minorities are important to Canada's economic growth.

Families

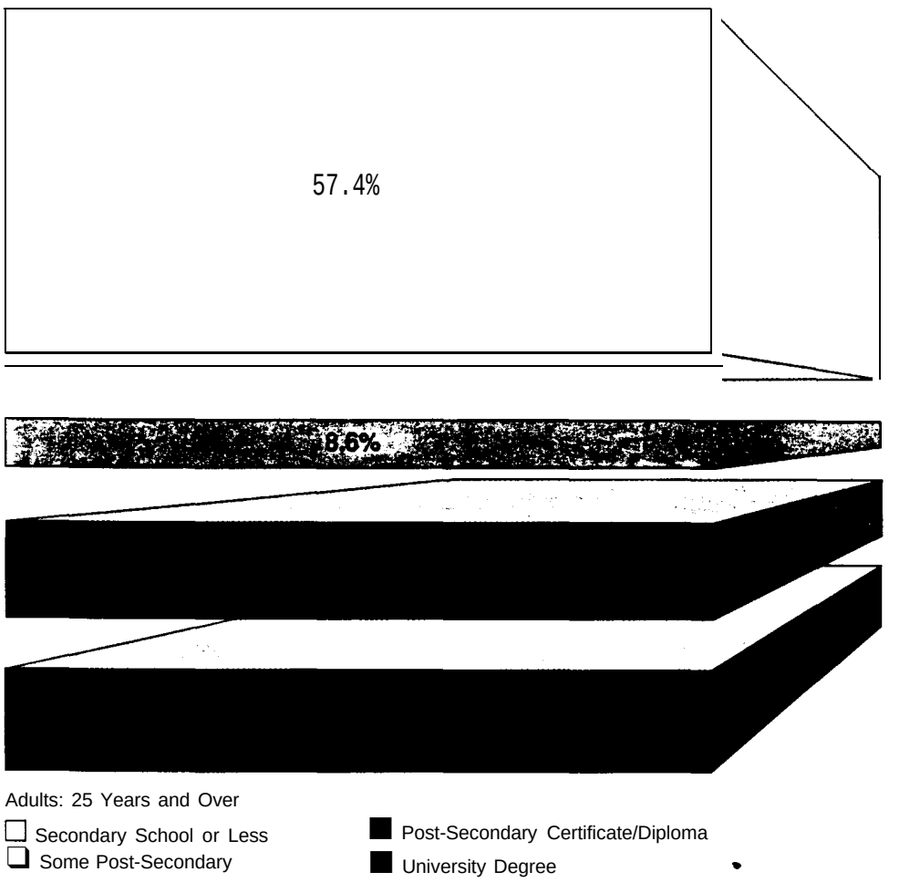
Today, both parents arc working in fully 65 per cent of two-parent families with children under six.[40] The daily challenge of combining work and family responsibilities must be supported by governments and employers alike, requiring increased flexibility and fairness in work and leave provisions. The availability of day care and of equitable alternative work arrangements. such as flexible and part-time employment and working out of the home. will help tap the full potential of Canadian men and women.

Education and Training

In general. Canada has a highly educated workforce compared to many other countries. The proportion of young people completing high school is increasing, and more people are continuing to seek higher levels of education, Nevertheless, the national secondary school drop-out rate hovers around 28 per cent which. while unacceptably high, has fallen from the more than 35 per cent level of the late I 970s."

Figure 2.5

Educational Attainment of Adult Labour Force, 1988



SOURCE Statistics Canada, *Labour Force Annual Averages, 7981-7988,*

However. workers beyond school age, who are already in the labour force. will still represent the largest portion of the labour force in the year 2000. Almost 60 per cent of these workers have no more than secondary school education.

Given the evidence of rising skill demands. this suggests that a large portion of the work force, now and in the future lacks the educational preparation and training for the majority of new jobs in the 1990s—unless their education is supplemented with substantial vocational training to acquire new skills.

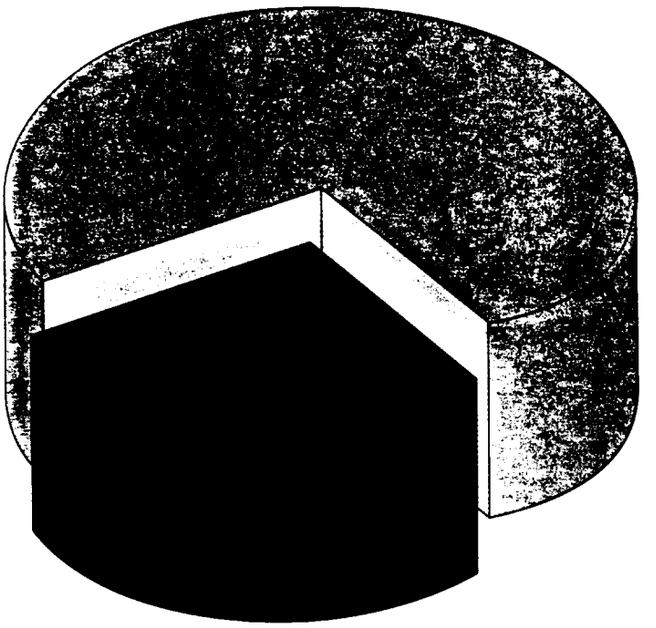
Basic Skills

There is evidence that many individuals do not have the basic skills required even for lower skilled jobs—skills such as the ability to read reasonably sophisticated material. write clearly, speak articulately, and understand basic arithmetic.

For example, a study prepared for Southam News in 1987 found that 24 per cent of adult Canadians are functionally illiterate. This means that about 4.5 million adults are unable to read and understand basic instructions or fill out standard forms." Such basic language skills are essential for most new jobs, and for learning more sophisticated skills through training and education.

Figure 2.6

Illiteracy in Canada



■ Percentage of Canadians who are functionally illiterate

SOURCE The Creative Research Group Ltd *Literacy in Canada. A Research Report,* (prepared for Southam News), 1987

Almost 25 per cent — or 4.5 million — of Canadians lack basic literacy skills, one-third of whom are secondary school graduates.

The lack of skills and education is a real barrier to re-employment. During 1988 about 1.1 million job seekers experienced difficulty in finding work as a result of a lack of skills. while 800.000 identified a lack of education as restricting their employ ability."

Private Sector Training

Canadian workers are well aware of the importance of training in today's economy. In a 1988 Decima survey, approximately 53 per cent of respondents said they would be willing to trade off higher wages for additional training."

The private sector is not now addressing the need for training. While governments provide basic and general education, employers are also responsible for skills development—particularly related to firm-specific or industry-specific skills. It is also in the interests of individual workers themselves to obtain additional skills for career advancement. A survey of adult training found that 11 per cent of adults participated insomeform ofcmployment-oriented education or training. Youth and well-educated individuals were more likely to be involved.'

Preliminary data from the 1987 Statistics Canada Survey of Human Resource Development and Training show that about 75 per cent of the firms surveyed did not provide any formal training for employ ees." Canadian firms invest much less in training than their counterparts in other countries. Employers spent about $1.4 billion or less than 0.3 per cent of Canada's Gross Domestic Product on training—less than one half of the United States on a per employee basis." Clearly, many Canadian employers have not recognized their responsibility for skills development, or the benefits that can accrue from an investment in training.

There is growing evidence that Canadian businesses are beginning to realize they must share the responsibility for increased training in the future." There are exemplary Canadian corporations, especially in high technology fields, that invest considerable time and money in the skills development of their workforce. IBM Canada. for example, spent about $36 million in 1986 on employee training—$3,000 for every one of its 12.000 employees. On any given day, approximately 500 of its employees are involved in some kind of ongoing education. Similarly, Bell-Northern Research now offers some 40.000 training days a year to an employee population of 6,300.'" These firms know that competing in the international marketplace means creating an advantage over competitors; for Canada. this means developing a skilled and knowledgeable labour force.

While large corporations such as IBM and BNR can see the rewards from making a substantial commitment to corporate education. it is more difficult for smaller companies to do so on an individual basis. Employers view training as an investment. The decision to devote time and money in training implies that an employer expects trainees to remain within the company to realize the benefits from that investment. Firms that do not train believe it to be too expensive, or they are concerned that their newly skilled workers might leave and therefore prefer to recruit workers with the requisite skills. When too many firms rely on someone else to do the training, however, it does not happen and skill shortages result.

Part of the solution is for firms to work together and pool their efforts and resources in training and skills development. The Canadian Chamber of Commerce is playing an important role in this regard by identifying and promoting opportunities for co-operative training initiatives in which smaller companies could maximize the effectiveness of such activities without jeopardizing their bottom line. Similarly, there are noteworthy examples of sectoral efforts such as the Automotive Industry Human Resources Task Force. Their report concluded that industry will require a massive coordinated training effort if it is to remain competitive. It also stressed that a significant commitment was required by governments and educational institutions.'"

3

Conclusion: Matching Supply with Demand

The Need for Flexibility

Global competitive pressures, technological changes and the re-structuring of Canada's economy will affect an increasing number of workers in the 1990s and beyond. At the same time. Canada's labour force could become less adaptable as it becomes older and grows more slowly. While many changes will still be absorbed through the natural adjustment of the labour market, governments, business and labour must address a number of emerging issues.

Canadian industry, and Canada's future prosperity, depends on a flexible work force capable of taking on new jobs. changing occupations. acquiring new knowledge. and developing new skills.

The skill requirements for most jobs are changing, and will likely continue to change on a regular basis. This means that many Canadian workers will need opportunities to upgrade their skills—to keep pace with technical developments and the use of more sophisticated technologies in their occupations.

But in many cases. upgrading existing skills will not be sufficient. In some instances, as in engineering design and drafting, entirely new skill sets have to be learned. While it will remain important for workers to maintain a core of specific occupational skills, multi-skilling—the ability to perform a broader range of skilled tasks—will become more prevalent.

As economic re-structuring continues. and the numbers of jobs in particular occupations grow at different rates, some Canadians will have to meet the challenge not only of changing jobs. but of changing occupations in mid-life. This may entail acquiring new knowledge and learning entirely different skills.

Today, workers can no longer expect to acquire one set of skills in their youth which will carry them throughout their working lives, The need to adapt to new skill demands on a regular basis will affect an increasing number of people. This means that workers must have strong basic skills which form the foundation for a lifetime of learning. And employers must provide them with opportunities to refresh existing skills or learn new ones.

Among adult workers. especially. there is a need to ensure attitudes conducive to change—a willingness to switch careers and, if necessary, consider relocation to take advantage of job opportunities. Employers too. will need to foster change by capitalizing on the significant experience and potential contributions of older workers. Moreover, they will need to create greater opportunities for those in the labour force who tire not able to reach their full potential and to support their employees" efforts to adapt.

A Potential Mismatch Between Jobs and Workers

A mismatch between the skills demanded by employers and those possessed by workers is a growing problem. cutting across all *sectors* of the economy. It may also take the form of specific and persistent skill shortages.

Part 2 indicated that skill requirements for the majority of new jobs will exceed the current education and training levels of many workers. Projections of the "skill index"—the ratio of skills in supply to skills in demand—provide further evidence of a general skills mismatch. A skill index of 1.0 represents a perfect match between available skills and jobs. *In* 1981, the Canadian skill index was slightly higher than 1.0 representing an excess of skilled labour. By the year 2000, under present conditions. a 15 per cent decline is forecasted. The index would fall below one, representing a general shortage of skills.[51]

A skills mismatch currently exists. Recent surveys indicate that employers are having difficulty finding adequately qualified and trained workers. The Canadian Federation of Independent Business found that 30 per cent of its member firms in 1985, cited a shortage of qualified labour as a problem. By late 1988, this percentage rose to 50 per cent.[52]

A survey of business conditions by Statistics Canada in 1988 showed that 14 per cent of Canadian manufacturers identified shortages of skilled labour as a problem impeding production. They considered this more important than other production difficulties such as shortages of working capital. unskilled labour or raw materials. This was the highest level found by the survey since January 1981 when 13 per cent of firms experienced skill shortages. By contrast, only 2 to 8 per cent of manufacturing firms cited the shortage of skilled labour as a problem in the intervening years between 1981 and 1988.

There is further corroborating evidence that manufacturing firms are facing significant skill shortages. A total of 36 per cent of those surveyed by the Canadian Manufacturers' Association in early 1988 expressed difficulty with finding skilled tradespeople.[53]

[n all three surveys—those of CFIB.CMA and Statistics Canada—the shortages were most severe in Central Canada. However. in each case there were provinces in both the Atlantic and Western Canadian regions which experienced difficulties in attracting skilled labour.

A Strategic Investment

The basic pattern emerging from the data, points to an increasing difficulty in bringing workers with the right skills to the right job at the right time. A national strategy to close that gap will have to focus on increasing the level of training and skills development. and maximizing opportunities for all members of the labour force.

Canadian industry needs skilled human resources *to* put technology to work, and achieve the higher productivity and global competitiveness on which continued economic prosperity depends. This is a priority issue for all Canadians—workers. employers. educational institutions, and governments at all levels.

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List of Tables and Figures

Tables

Figures