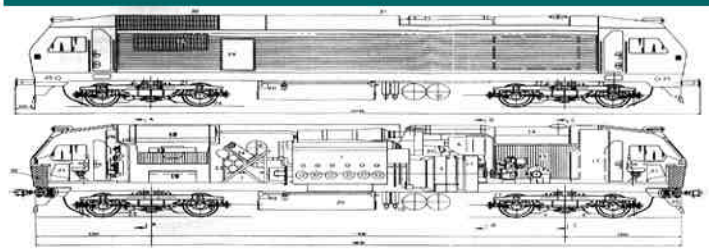

Workforce Profile of the Manufacturing Sector

March, 2004

Canadian Labour and Business Centre

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Workforce Profile of the Manufacturing Sector

Profile Summary

This workforce profile of the manufacturing sector provides an overview of current workforce demographics and lists a number of areas where action might be taken to address the critical human resource issues of retention recruitment and skills development. The profile draws upon two primary data sources, the 2003 Labour Force Survey and the 2001 Census of Canada.

Highlights

- Over the past five years, total employment in the manufacturing sector increased by about 288,000 workers (or 15%). However, this employment growth is not even across all age groups. The number of workers under 45 years increased by 7%, while the number of workers 45 year and over increased by 35% during this period.

- The "ageing" of Canada's total workforce continues, as seen in the rising percentage of older workers. The median age of retirement, however, appears to have stabilized in recent years. Since 1997, it has remained at roughly 61, but nonetheless well below what it was a decade ago.

- The age structure in the manufacturing sector closely mirrors national workforce averages. Thirty-six per cent of the workforce is currently 45 years and older, representing 823,000 workers. Within this group, 255,000 workers – 11% of the sector's workforce – are aged 55 and older. Given a median retirement age for the sector of 61 years, the age distribution implies that a large contingent of these 255,000 workers will leave the labour force over the next five years. Over the next 15-year period, employers may be looking at replacing over 400,000 workers.

- Seventy-two percent of "near-retirement workers" (persons aged 55 and over) are males. However, within all age groups including the youngest, males make up about seven of every ten workers.

- The level of formal educational attainment among the manufacturing workforce is increasing. Even over the relatively short time span of 1997 to 2003, the proportion of the workforce with a post-secondary certificate, diploma or degree has increased from 42% to 47%.

- Canada's reliance on immigration for labour force growth is also evident within the manufacturing sector. Census data show that the labour force within Manufacturing Industries increased by 125,335 between 1991 and 2001, with recent immigrants representing 166% of the sector's net labour force growth

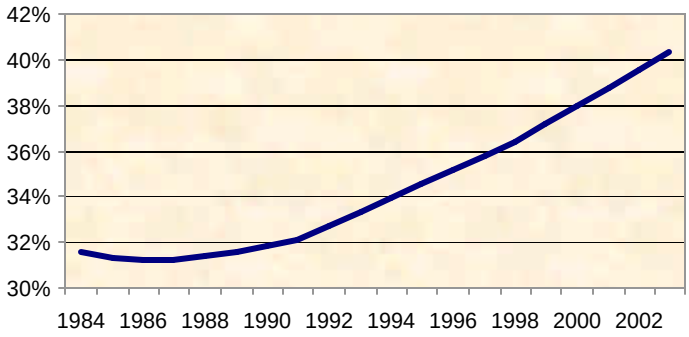
- The human resource challenges posed by workplace demographics, the continuing demand for skilled workers, and the growing reliance on immigration as a source of labour can be addressed through a variety of recruitment, retention and skills development strategies.

Workforce Profile of the Manufacturing Sector

Introduction - Canada's Ageing Workforce

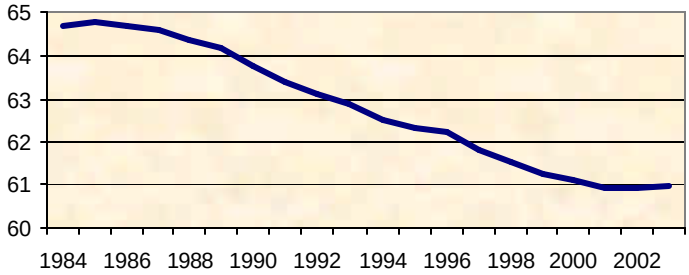
The Canadian population is "ageing" and so too is the workforce. In less than a decade, the first of the baby boom generation – born between 1946 and 1965 – will begin to reach retirement age. And with the median age of retirement currently around 61, what might mean "freedom" for the current generation of older workers could spell "trouble" for employers in the coming years.

Chart 1
Labour Force Participants Aged 45-64 as a Percentage of the Labour Force Aged 20-64



Source: Statistics Canada, Labour Force Historical Review 2003

Chart 2
Median Retirement Age* - Canada



Source: Statistics Canada, Labour Force Historical Review

As a result of these workforce demographics, there is a growing awareness and concern throughout all sectors of the economy about possible skill shortages and the need to foster skills development and learning among new labour market entrants as well as the existing workforce. Add to this demographic picture the growing level of international competition with developed countries and emerging low wage competitors, as well as the rapid pace of technological development and innovation, and it is no surprise that the issues of skill shortages and skills development have become paramount for many industry stakeholders and human resource planners.

Consider the following:

- As shown in Chart 1, the proportion of the Canadian working-age labour force aged 45-64 years has been increasing over the past fifteen years, from 32% in 1984 to 40% in 2003. During the same period, the median retirement age has followed a downward trend, going from 65 in 1984 to 61 in 2003 (Chart 2). Statistics Canada reports that the retiring baby boom generation will have a significant impact on the size of the labour market, particularly as relatively fewer young people will be entering it[1];

[1] Statistics Canada, The Changing Profile of Canada's Labour Force, Catalogue no. 96F0030XIE2001009.

- By 2030, natural population increase is expected to reach zero, meaning that from then on, immigration is projected to be the sole source of population growth[2]. Over the past decade, 70% of net labour force growth resulted from immigrants who landed in Canada during the 1990s. Within ten years, immigration is expected to account for all net labour force growth[3];

- The demand for skills is high and increasing. Between 1991 and 2001, management occupations and professional occupations requiring university, college or apprenticeship training accounted for 74 per cent of labour force growth[4];

- According to Statistics Canada's 1999 Workplace and Employee Survey (WES), almost one-half (48%) of Canadian business locations introduced some form of product or process innovation in that year. That figure rises to 67% among establishments with 20 or more employees[5]. Similarly, the Survey of Electronic Commerce and Technology found that between 2000 and 2002, more than 75% of private sector firms with 100 or more full-time employees acquired "significantly improved technologies.[6]"

- In a 2002 survey of business and labour leaders, the Canadian Labour and Business Centre found that 56% of labour leaders and 52% of managers described the shortage of skilled labour as a serious problem facing the economy and labour market[7]. The Canadian Manufacturers and Exporters' 2003-2004 Management Issues Survey found that the lack of qualified personnel was identified as one of the top three constraints on performance improvement[8].

Whether and to what extent skill shortages materialize in the future is a matter of some debate[9], depending upon numerous supply and demand conditions, and how these unfold within different sectors and occupations. There is general agreement however, that making the best use of existing skills and building on these through continuous learning and skills development is critically important in the "knowledge economy".

Issues central to the ageing workforce include how to best recruit new talent, retain the current workforce, and effectively transfer skills and knowledge from older, more experienced workers to the younger ones.

This workforce profile of the manufacturing sector provides an overview of current workplace demographics and discusses a number of areas where action might be taken to address the critical human resource and skills issues.

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[2] Statistics Canada, http://www.statcan.ca/english/kits/issues/charts/chart3.htm

[3] Ibid.
[4] Ibid.
[5] Leckie, Norm, Andre Leonard, Julie Turcotte and David Wallace. Employer and Employee Perspectives on Human Resource Practices, Ottawa: Statistics Canada and Human Resources Development Canada, 2001.
[6] Earl, Louise. An Historical Comparison of Technological Change, 1998-2000 and 2000-2002, in the Private and Public Ssectors. Ottawa, Statistics Canada. Catalogue no. 88F0006XIE – No.007.
[7] Canadian Labour and Business Centre, Viewpoints 2002: Skills and Skill Shortages, 2002. Available on the CLBC website: www.clbc.ca
[8] Canadian Manufacturers and Exporters, *Leveraging Success: 2003-2004 Management Issues Survey,* 2003.
[9] R.A. Malatest & Associates, The Aging Workforce and Human Resources Development Implications for Sector Councils. A Report prepared for the Alliance of Sector Councils, 2003.

Older Workers: Overview of Manufacturing in Relation to Other Sectors

One way to gauge the impact of an ageing workforce on future labour supply is to look at the proportion of older workers in the workforce and compare it to the typical age of workers at retirement. Among the employed population in Canada, 5.7 million workers are currently 45 years of age and older, representing 36% of the workforce (Table 1). Assuming that the median retirement age of 61 years remains unchanged, it means that one-half of this group – some 2.8 million workers – will likely be retiring over the next 15 years.

Table 1
The proportion of workers 45 years and older, as well as that of workers 55 years and older, showing median age at retirement, by industry sectors
Labour Force Survey, 2003 annual averages. Median retirement based on persons retiring between 1999 and 2003.

	Aged 45+		Aged 55+		Median Retirement
	%	(000's)	%	(000's)	Age
Agriculture	47%	161	25%	86	67
Educational Services	44%	467	14%	149	57
Public Administration	43%	354	12%	94	59
Utilities	45%	59	9%	12	57
Transportation and Warehousing	43%	329	14%	111	62
Health Care and Social Assistance	42%	700	14%	230	62
Natural Resources	36%	93	10%	27	60
Hunting and Fishing	41%	12	15%	4	
Finance, Insurance, Real Estate and Leasing	39%	365	14%	130	61
Other Services	37%	260	16%	114	64
Construction	36%	335	13%	124	64
Manufacturing	**36%**	**823**	**11%**	**255**	**61**
Professional, Scientific and Technical Services	35%	353	14%	139	64
Management, Administrative and Other Support	32%	196	13%	81	65
Trade	30%	742	11%	266	63
Information, Culture and Recreation	28%	199	9%	65	61
Accommodation and Food Services	21%	218	7%	76	63
All industries	**36%**	**5,666**	**12%**	**1,963**	**61**

The retirement picture in the manufacturing sector mirrors fairly closely the overall economy. In this sector, 36% of the workforce is currently 45 years and older, representing 823,000 workers. Within this group, 255,000 workers – 11% of the sector's workforce – are aged 55 and older. Given a median retirement age for the sector of 61 years, the age distribution implies that a large contingent of these 255,000 workers will leave the labour force over the next five years. Over the next 15-year period, employers may be looking at replacing over 400,000 workers.

Older Workers in the Manufacturing Sector

Table 2 shows the percentage of the manufacturing workforce aged 45 plus and 55 plus within various workforce characteristics, as well as the distribution of the 55 plus workforce by the same characteristics.

- The age profile of male and female workers in the manufacturing sector is nearly identical. Thirty-six percent of males and the same percentage of females are age 45 and over, and 11% of both groups are aged 55 and over. Because employment in the manufacturing sector is male dominated, it is not surprising that most near-retirement workers - 72% - are males. In fact, within all age groups, males make up about seven of every ten workers.
- Compared to other regions, manufacturing sector workers in Alberta, Manitoba and Saskatchewan are somewhat younger. In those provinces, about 30% of the workforce is

aged 45 and over, compared with 36-37% in other regions. The difference is due to the Prairie's relatively large percentage of manufacturing workers under 35 (38% in Alberta for example, compared with 31% in Ontario). However, the proportion of near-retirement workers (aged 55 and over) is about the same in the Prairies as in other regions (about 10%).

- Because the majority of employment in the manufacturing sector employment is located in Ontario (48%), it is not surprising that the majority of near-retirement manufacturing workers (49%) are also found in Ontario.

- The largest occupational group in manufacturing is machine operators and assemblers. Numbering just under one million, they make up 42% of the total manufacturing workforce. One out of ten machine operators and assemblers – 101,000 workers – are aged 55 and over. While fewer in number, workers in trades occupations – construction, electrical, machinists, mechanics, etc. – make up a significant share of employment in the sector (17% or 380,000 workers)[10]. About one in eight of these workers (13%) is aged 55 and over and nearing retirement.

- Excluding the self-employed, 33% of the sector's workforce is unionized or covered by a collective agreement. A relatively large percentage of unionized workers (42%) are aged 45 and over, while 12% are near-retirement age (55 and over). Rates of unionization vary considerably by age: 24% of workers aged 15-24 and 27% of those 25 to 34 are unionized, compared to 38% of workers aged 45 and over.

Table 3 Who are they? Where are they?
Older workers and near-retirees in the manufacturing sector, by selected characteristics
Labour Force Survey, 2003

		Proportion of workers				Distribution
		Aged 45+		Aged 55+		of 55+ by
		%	(000's)	%	(000's)	characteristics
Manufacturing		36%	823	11%	255	100%
Gender	Male	36%	587	11%	185	72%
	Female	36%	237	11%	70	28%
Region	Atlantic	37%	41	10%	11	4%
	Quebec	36%	230	11%	68	27%
	Ontario	37%	403	11%	125	49%
	MB SK	32%	31	10%	9	4%
	Alberta	30%	45	10%	15	6%
	BC	36%	74	12%	25	10%
Occupation	Managers	45%	86	15%	28	11%
	Natural sciences	38%	93	11%	27	11%
	Trades	26%	46	8%	14	5%
	Admin; clerical	40%	151	13%	49	19%
	Operators; assemblers	36%	344	11%	101	40%
	Labourers	27%	50	8%	15	6%
	Other occupations	34%	54	13%	21	8%
Union Status	Unionized	42%	299	12%	87	37%
	Not unionized	32%	470	10%	145	63%

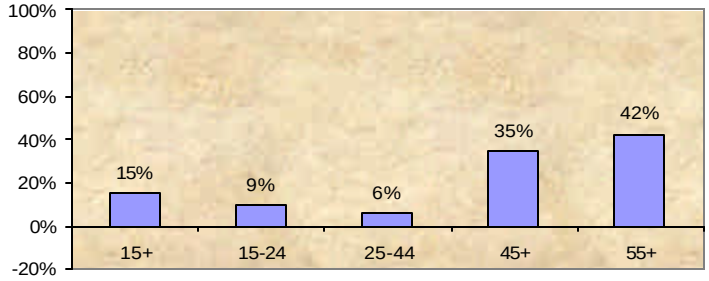
** Excludes self-employed.*

[10] Excludes contractors and supervisors in trades.

Employment Growth by Age Group

Between 1997 and 2003, overall employment in the manufacturing sector increased by 15% or 288,000 workers (Chart 3). Throughout this period, the number of younger workers under 45 years increased by 7%, while the number of older workers 45 years and over increased by 35%.

Chart 3
Percentage change in the number of paid employees by age group, Manufacturing Sector, 1997-2003



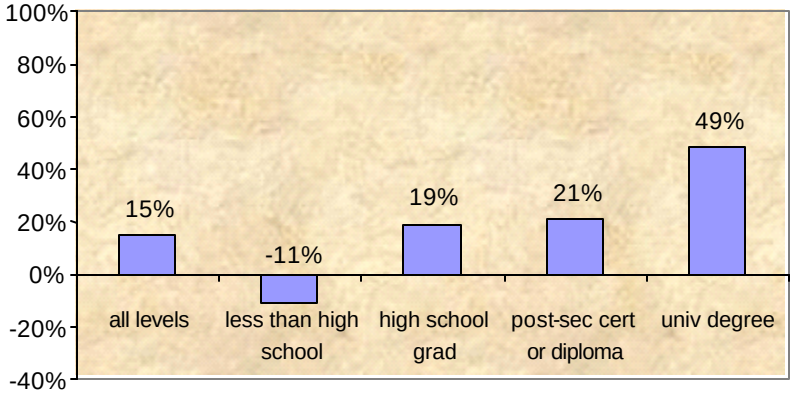
Source: Labour Force Survey, public use microdata files

Rising Education and Skill Requirements

The level of formal educational attainment among the manufacturing workforce is increasing. Even over the relatively short time span of 1997 to 2003, the proportion of the workforce with a post-secondary certificate, diploma or degree has increased from 42% to 47%. One reason for this increase is that retiring older workers are being replaced by younger cohorts with higher education. In 2003 for example, 34% of near-retirement workers aged 55 and over had not graduated from high school and only one in ten (9%) had a university degree. In contrast, only 12% of workers aged 25-34 had not graduated from high school and nearly one in five (19%) had a university degree. As older workers retire, they are replaced by younger cohorts where post-secondary qualifications are more commonly held.

This "ratcheting up" of education levels is evident among all age groups, not just new entrants into manufacturing. For example, today's older workers in manufacturing have higher levels of educational attainment that did older workers in the past, and tomorrow's older workers will have higher levels than today's. Consider for example, that in 2003, 39% of near-retirement workers (aged 55 and over) had some form of post-secondary credential. Just six years earlier, in 1997, that figure would have been 31%.

Chart 4
Percentage change in the number of paid employees by education level, Manufacturing Sector, 1997-2003



Source: Labour Force Survey, public use microdata files

Increases in the formal education level of the manufacturing sector workforce is in part a function of changes in the education of overall labour supply – that is, higher levels are now attained by the

Canadian population in general. However, there is also evidence of growing demand for occupations that typically require higher education and skill levels:

- The number of workers in natural and applied science occupations increased by 26% between 1997 and 2003. Within this group the proportion with post-secondary education increased from 81% to 86%.

- In contrast, the number of people employed as labourers, that is, occupations primarily concerned with manual tasks and assisting machine operators, *decreased* by 7% over the same period. Even within this group however, the proportion with post-secondary education increased from 22% to 24%.

As a result of the increased supply of and demand for higher formal education and skills, employment growth in the sector has been greatest among persons with post-secondary education. Chart 4 shows that while the number of paid employees within the manufacturing sector increased by 15% between 1997 and 2003, the number of paid employees with a university degree increased by 49% and the number with a post-secondary certificate or diploma by 21%.

A Growing Reliance on Immigration as Source of Labour and Skills

Throughout Canada's history, immigration has been an important if not critical part of Canada's labour supply. Results from the latest Census of Canada suggest that the last decade of the 20th century has been no exception. Between 1991 and 2001, 978,000 immigrants arrived in Canada during the decade and joined the country's workforce. These "recent" immigrants represent 70 percent of the decade's total labour force growth[11].

Canada's reliance on immigration for labour force growth is also evident within the manufacturing sector. Census data show that the labour force within Manufacturing Industries[12] increased by 125,335 between 1991 and 2001, with recent immigrants representing 166% of the sector's net labour force growth[13]. In the provinces of Quebec, Ontario and British Columbia, where a large percentage of immigrants settle, immigration has played an even bigger role as a source of labour and skills for manufacturing.

Immigrants account for about one out of five of Canada's total employed population, while recent immigrants – those arriving in Canada in 1991 or later, account for six per cent (Table 4). Within the manufacturing sector, immigrants represent an even greater share of the employed workforce:

- Overall, 27% of the employed manufacturing workforce are immigrants, and nearly one in ten (9.4%) are recent immigrant (arrived in Canada within the past 10 years).

- Certain sub-sectors within manufacturing – such as clothing manufacturing, computer and electronics manufacturing and furniture and related products manufacturing, have a very large share of their workforces comprised of immigrants. In the clothing manufacturing sector for example, more than one-half of the workforce is an immigrant and nearly one in four is a recent immigrant.

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[11] Canada's reliance on immigration for labour force growth is greater than – but not dissimilar to - that of the United States. Between 1990 and 2000, 50% of U.S. labour force growth was due to immigration. See *Immigrant Workers and the Great American Job Machine: The Contributions of New Foreign Immigration to National and Regional Labour Force Growth in the 1990s.* Andrew Sum, Neeta Fogg, Paul Harrington. Northeastern University, Center for Labor Market Studies.

[12] Due to the availability of data, the analysis of changes between 1991 and 2001 is based on the 1981 Standard Industry Classification System (SIC) rather than NAICS,

[13] Recent immigrants are considered part of the manufacturing sector labour force if they are 1) currently employed in the manufacturing sector, or 2) currently unemployed but with their previous job in the manufacturing sector.

While Canada's immigration system has several objectives, including family reunification and humanitarian commitment, it plays an important role in meeting the nation's human resource requirements. Because selection criteria favour better educated immigrants, a large proportion of those coming to Canada bring with them post-secondary education and training. Among recent immigrants employed in Canada's manufacturing sector, 26% hold a university degree, and a further 24% hold a college or trades diploma. In comparison, 9% of the sector's Canadian-born workers hold a university degree and a further 35% hold a college or trades diploma.

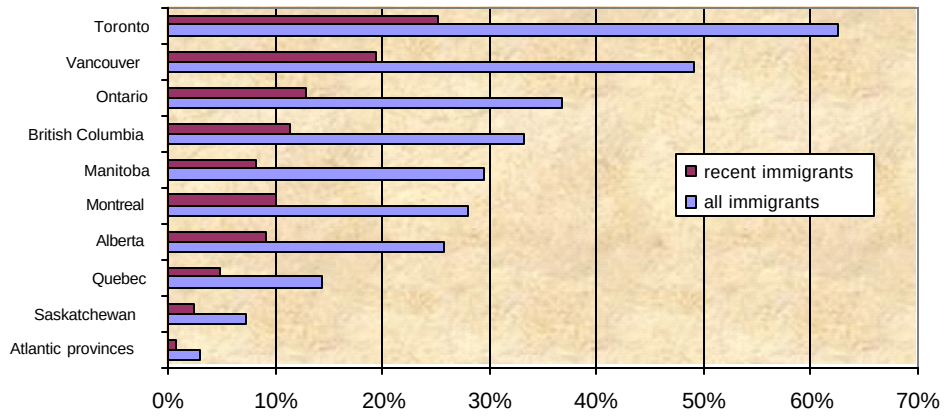
While most immigrants find success in the Canadian labour market, the transition to employment is not always without problem. Familiar barriers to employment include the recognition of credentials obtained abroad, a lack of Canadian work experience and language difficulties. In the context of a business environment in which concern about skill shortages is on the rise, and a labour market whose growth is increasing dependent upon immigration, efforts to address these difficulties will be needed to ensure that immigrant integration into the Canadian workplace is efficient and effective.

Table 3
Employed Persons by Immigration Status, Manufacturing Sector, 2001

Manufacturing Sectors	NAICS Code[1]	% recent immigrant[2]	% immigrant
Clothing manufacturing	315	22.9	55.5
Computer & Electronics products	334	17.9	38.1
Furniture and related products	337	14.8	35.5
Electrical equipment, appliance and components	335	14.4	34.6
Textile product mills	314	14.0	36.2
Plastics & Rubber products	326	12.9	30.4
Miscellaneous manufacturing (NEC)	339	11.5	30.7
Textile mills	313	11.0	27.5
Leather and Allied Products	316	10.1	32.0
Food products	311	9.4	24.9
All Manufacturing Sectors	**31-33**	**9.4**	**26.9**
Fabricated metal products	332	8.8	28.2
Machinery manufacturing	333	8.7	27.7
Chemical manufacturing	325	8.3	24.8
Transportation equipment	336	6.8	26.5
Printing and Related support activities	323	6.3	21.4
All Sectors	**all**	**6.1**	**19.9**
Non-metallic mineral products	327	4.8	17.9
Wood products	321	3.4	13.0
Beverage and Tobacco products	312	3.4	14.7
Petroleum and Coal Products	324	3.4	14.9
Primary Metal	331	2.8	16.2
Paper manufacturing	322	2.8	12.2

[1] 1997 North American Classification System.
[2] Recent immigrants refers to immigrants arriving in Canada within 10 years of the date of the 1991 Census (May, 1991).
Source: 2001 Census, custom tabulations.

Chart 5
Immigrants as a Percentage of Employment, Manufacturing Sector, Selected Regions, Provinces and Metropolitan Areas, 2001



Human Resource Challenges for the Manufacturing Sector

There is little doubt that within the manufacturing sector, as in other sectors of the economy, the ability of business to succeed and thrive will depend in large part on its efforts in addressing the skills challenges posed by workplace demographics, the continuing demand for skilled workers, and the growing reliance on immigration as a source of labour. Profitability, innovation, growth, and the ability to operate at capacity all depend on an adequate supply of skilled workers. The current demographic picture of the manufacturing sector simply underscores the importance and urgency of addressing the sector's skill requirements.

It will become increasingly important to find ways to retain existing workers, attract new talent to the sector, transfer knowledge and experience between workers, and to situate learning and skills development as an ongoing feature of workplace practice. Stakeholders within the manufacturing sector can implement a variety of programs, policies and practices to address these human resource challenges. And while there is unlikely to be a single "magic bullet" that will resolve all skills issues in all situations, there are a number of insights gained from research and existing innovative practices that could form the starting point for initiatives in addressing the critical issues retention and recruitment. Among these are:

- ***Training and skills development***, through formal employer sponsored classroom and on-the-job training as well as informal learning within the workplace not only improves productivity, but can increase employee retention and make workplaces more attractive to new recruits. In an environment of greater competition for young workers, the sector and its employers should showcase the career opportunities available in the industry. While a significant amount of training activity takes place among Canadian manufacturing firms, smaller establishments may face constraints on formal training opportunities due to limited resources.[14] In addition, employees with lower skill and education levels are less likely to participate in training, and risk becoming less and less equipped to deal with an increasingly complex workplace. Efforts to increase adult literacy, numeracy, and essential workplace skills are an equally important component of the skills challenge.

- ***Knowledge transfer strategies*** such as mentoring, cross-training, job-sharing and job-shadowing, and the use of technology-based tools such as intranets and groupware can allow for the systematic exchange of skills, experience and "corporate memory." Such strategies are likely to become more important as older workers retire and new workers join the manufacturing sector.

- ***Succession planning*** involves the determination of future staffing requirements in light of workforce demographics and business objectives, and the development of strategic plans for the replacement and recruitment of workers. Effective succession plans can anticipate skills and training requirements for those employees who are likely to replace retiring workers.

- ***Phased-in retirement provisions***, including such things as reduced or flexible work hours and job re-design could be useful in retaining older workers. Within the manufacturing sector, 4% of male workers aged 55 and over worked part-time in 2003, compared to 1% of workers aged 25 to 54. Older workers who worked part time did so by choice, most often citing 'personal preference' as their reason for working less than 30 hours per week[15]. As today's near-retirement workers tend to be healthier, and with higher levels of education, they may opt for a continued connection to the workforce given choices in the flexibility of their work arrangements. A slower transition to retirement through a gradual reduction in work hours would allow employers to retain the benefit of an individual's experience and

[14] Leckie, et al. Employer and Employee Perspectives on Human Resource Practices, Ottawa: Statistics Canada and Human Resources Development Canada, 2001.
[15] Based on the analysis of 2003 Labour Force Survey data.

skills, which could be passed onto younger colleagues in an orderly fashion. Such strategies do raise important pension issues, but should be considered as they could help ease the demographic crunch.

- ***Utilizing of new sources of labour*** will undoubtedly become more prominent in the years to come. Skilled immigrants and the Aboriginal workforce will, in this regard, play an increasingly important and strategic role. Developing effective methods of assessing and recognizing qualifications and work experience gained from abroad are an important part of facilitating the integration of immigrants into manufacturing sector jobs.

- A growing body of evidence indicates that ***innovative workplace health practices*** which enhance physical as well as psycho-social dimensions of health, including work-life balance initiatives can improve retention and recruitment, and reduce absenteeism. As the workforce ages, the sector may find greater numbers of days lost to illness and disability. Over the period 1999-2003, the average manufacturing sector worker aged 55 and over lost 10.3 days per year, compared to 6.6 days among workers aged 25 to 44. Given these findings, the current organization of work may require careful attention, with consideration given to innovative approaches and practices in the areas of occupational health, safety and wellness. Overall, the work environment and human resource practices may need to be adjusted to accommodate the needs and concerns of an older workforce as well as potential new entrants to the manufacturing sector.

- Increasing ***youth awareness of career opportunities*** in the various manufacturing sub-sectors could be an important feature of successful recruitment. Advertising and information campaigns, collaboration with colleges and universities through co-ops and internships, and the development of industry specific training programs that help students get practical job skills could play an important role.

- Working with and through ***sector councils and professional associations*** to develop these and other innovative responses and approaches to human resources issues could help employers more effectively and efficiently meet their human resource requirements. Celebrating, promoting and emulating best practices in recruitment, retention, and skills development could further foster a spirit of excellence within the manufacturing sector.

About the CLBC

The Canadian Labour and Business Centre is an independent national labour-business organization whose mission is to contribute to economic growth and social well-being by improving business and labour practices in Canada, and by providing joint advice on public policy. Since 1984, we have been the recognized centre for business-labour dialogue and consensus building in the country.

Appendix A

Industry Workforce: Fast Facts

- ***Size of Sector***: The manufacturing sector contributes significantly to employment and Gross Domestic Product (GDP). The sector directly employs just over 2 million people, representing about 14 per cent of total employment in Canada. In 2003, the sector accounted for 17.5% of total GDP, and 56% of the GDP of all goods-producing industries.

- ***Sub-sectors***: Using the 1997 North American Industrial Classification System (NAICS), the manufacturing sector can be further divided into 21 sub-sectors. In terms of employment, the largest of these are transportation equipment manufacturing, food manufacturing, and fabricated metal product manufacturing. Together, these three sub-sectors account for about one-third of all employment in the manufacturing sector.

Table A-1
Number of Employed Persons and Primary Business Establishments, Manufacturing Sector, 2001

Manufacturing Sectors[1]	Number Employed[2]	Number of Establishments[3]
Total Manufacturing	2,033,165	54,031
Transportation equipment	259,850	2,251
Food products	226,620	5,545
Fabricated metal products	173,500	7,923
Wood products	145,355	3,740
Machinery manufacturing	128,820	4,999
Plastics & Rubber products	113,300	2,434
Computer & Electronics products	112,255	2,043
Furniture and related products	102,515	3,528
Clothing	101,215	2,843
Paper	100,295	850
Chemical	95,055	2,067
Primary Metal	91,800	673
Printing and Related support activities	90,915	4,788
Miscellaneous manufacturing (NEC)	77,035	4,375
Electrical equipment, appliance and components	56,715	1,098
Non-metallic mineral products	54,975	2,215
Beverage and Tobacco products	31,355	513
Textile mills	25,605	626
Textile product mills	21,035	912
Petroleum and Coal Products	14,865	252
Leather and Allied Products	10,085	356

[1] Manufacturing sectors are based on the 1997 North American Classification System (3 digit level).
[2] 2001 Census, custom tabulations
[3] Data obtained from Industry Canada, see http://strategis.ic.gc.ca Establishments are generally single location producing facilities, and are different from the enterprise, which is the legal or corporate entity. In Canada, most enterprises consist of single establishments, but some operate several plants. The number of establishments is limited to principle establishments, i.e. those incorporated, with employees, and annual sales of $30,000 or more.

- ***Employment Growth***: Over the period 1992-2001, employment in the manufacturing sector increased by 22%. The three leading employment sectors within manufacturing remained the same over this period. Food manufacturing saw employment rise by 20%, followed by Transportation Equipment manufacturing with a 16% increase, and Fabricated Metal Product manufacturing, where employment increased by 61% over the 10 year period 1992-2001. The three fastest growing sectors for employment during this period were Furniture and Related Product (88%), Fabricated Metal Product (61%) and Plastics and Rubber Products (47.4%). A number of sectors showed a decline in employment levels during this decade including Beverage and Tobacco Product, Leather and Allied Product, Paper Manufacturing, Petroleum and Coal Products, and Primary Metal. The largest drop in employment occurred in the Chemical Manufacturing sector with a drop of 9,351 jobs or 10% of that sector's 1992 workforce.

- ***Wages and Salaries***: Among all employees in principle manufacturing establishments (see Table A1, note 3), the average annual salary in 2001 was $40,803. Within sub-sectors of manufacturing, average salaries were highest in Petroleum and Coal Products Manufacturing ($61,836), Primary Metal Manufacturing ($55,101) and Paper Manufacturing ($52,236). On the other hand, average annual salaries were lowest in Clothing Manufacturing ($22,147), Leather and Allied Product Manufacturing ($22,864) and Food Manufacturing ($29,378). Over the

period 1992 to 2001, average annual salaries among all employees in Manufacturing rose at a compound annual growth rate of 1.9%. The average salaries of Production workers rose to $36,863 from $31,292 or 1.8% per annum, while Administrative workers (including managers and professionals) saw annual salaries increase by 2.9% per annum, from $44,520 in 1992 to $57,730 in 2001.

- ***Employment by Firm Size***: According to the 2003 Labour Force Survey, about one-half (51%) of all employees in the manufacturing sector work for companies with 500 or more employees, a percentage similar to that found for all employees in all sectors (50%). Unlike the overall economy however, employees in manufacturing are about half as likely to work in small firms of less than 20 employees (11% compared with 20%).

- ***Job Tenure and Job Permanency***: About one-half (53%) of workers in the manufacturing sector have been with the same employer for more than 5 years. This is somewhat higher than the comparable figure found for all workers in all sectors (44%). As expected, job tenure rises with age. Among older workers (55+), the percentage that have been with the same employer for more than five years is 80% in manufacturing, compared with 70% in the economy at large. Ninety-four percent of workers in the manufacturing sector have “permanent” jobs (i.e. not seasonal, contract, term or casual).