Supporting the manufacturing sector in the Toronto commuter area (TCA)

Dennis J. Cutajar, Ec.D.

Local levels of government can play a vital role in supporting the competitiveness of their regional economy by targeting the needs of manufacturers. This paper explored the question*:* What services, incentives and programs could Canada's largest economic region, the Toronto Commuter Area (TCA), deliver to support a competitive manufacturing economy? Using a survey to assess the local issues facing manufacturing, this research advances the current thinking of the role local and regional economic developers play in ensuring a competitive marketplace for this key base industry. In general, manufacturers prefer less government intervention.

Keywords: manufacturing, Toronto Commuter Area (TCA), local economic development

Introduction

Local levels of government can play a vital role in supporting the competitiveness of their regional economy by targeting the needs of manufacturers. This paper explored the question*: What services, incentives and programs could Canada's largest economic region, the Toronto Commuter Area (TCA), deliver to support a competitive manufacturing economy?*

The critical performance measure in local economic development has been employment, capital investment and property tax revenue. While economic success is measured by these outcomes, the key performance measure in municipal economic development must be directly related to the strategies and initiatives undertaken locally to support the attributes, which creates a competitive economy. A competitive City-Region is therefore one, which generates the unique selling opportunity to attract manufacturing jobs and investment. Economic development professionals offer an important role, beyond the traditional sales and marketing function, in this dialogue.

Scope of work

While this paper referenced important Canadian studies measuring the dynamic, structural and competitive character of manufacturing in Canada and its sub-provincial regions, its primary focus was to explore municipal services which make the regional economy more competitive for the manufacturing sector to prosper.

The local reference area used in this paper was Canada's manufacturing heartland, defined as the commuter shed centered on Toronto, Ontario. Place of work data from the 2001 Census (Special tabulation published on February 11th, 2003, by Statistics Canada) was used to define the extent of Toronto's commuter shed. Commuting flows equal to or greater than 1,000 workers per day (i.e., employed labour force 15 years and over having a usual place of work in Toronto, Mississauga, Brampton and Markham) from municipalities outside was used as the basis for defining the geographic perimeter of the reference area. Toronto, Mississauga, Brampton and Markham had the highest concentration of manufacturing employment in the Toronto area. In this paper, the Toronto regional economy included the Oshawa, Toronto, Hamilton, Kitchener and St. Catharines Census Metropolitan Areas (CMA), plus the Census Agglomerations (CA) of Barrie and Guelph. Therefore, the reference area in this paper was referred to as the Toronto Commuter Area (TCA).

Based on this spatial analysis, it was believed a true geographic definition of the Toronto regional economy has been captured.

The reference timeframe was based on principal manufacturing statistics dated 1999, published by Statistics Canada in June 2002. Labour force statistics from the 2001 Census survey, published in March 2003 by Statistics Canada, were also used in this paper. A primary survey program of manufacturers in the study area was started in the second quarter of 2003.

Manufacturing was defined as durable and non-durable goods producing business establishments in Canada, categorized by the North American Industrial Classification System (NAICS). This definition included statistics and analysis for total activity in production and non-production related functions, such as corporate administration, sales and distribution for the latter. Table 1 outlined the twenty-one sub sectors of Canada's manufacturing industry.

The term competitiveness has been an often-used and controversial topic in this field of study. This paper builds on a basic definition which states "competitiveness refers to the ability of a business, a group of businesses or a city, region, country to compete internationally" (Productivity Growth in Canada, 2002, Statistics Canada). For the purpose of this paper, the regional economy will be competitive if its manufacturing costs are equal to or less than its competitors. Costs are defined in two groups, direct operational costs (business costs, cost of living), and indirect operational costs (business environment and quality of life).

Table 1. Manufacturing sub sectors

NAICS	Manufacturing Sub-Sector
311	**Food Products**
312	**Beverage and Tobacco**
313	**Products**
314	**Textile Mills**
315	**Textile Products**
316	**Clothing Manufacturing**
321	**Leather and Allied Products**
322	**Wood Products**
323	**Manufacturing**
324	**Printing and Related**
325	**Products**
326	**Petrochemicals and Coal**
327	**Products**
331	**Chemical Products**
332	**Plastics**
333	**Non-metallic Minerals**
334	**Primary Metals**
335	**Fabricated Metal Products**
336	**Machinery**
337	**Electronics**
339	**Electronics Equipment**
	Transportation Equipment
	Furniture and Related
	Miscellaneous

Source: Statistics Canada, Catalogue Number 31-203 XPB

This paper was not initiated to develop a statistically reliable research program measuring the cost-competitiveness of the reference area (i.e., the TCA) with its 'competitors' in North America. However, secondary sources were relied upon to help define the relative importance of each cost factor group, then to be used in drawing the matrix of related services delivered by municipalities. This reference to competitiveness was a key step in the study process, because it linked the foundation of the survey research program with the question being explored by the author.

Research program

Two levels of research were undertaken to explore the subject. First, secondary research provided a frame of reference and understanding of the broad principals driving competitiveness and prosperity in Ontario's manufacturing sector. Several questions served as necessary precursors to shaping the secondary research framework, namely: What is the current state of Ontario's manufacturing sector? How competitive is Ontario's manufacturing industry in the North American context? What are the primary and secondary site selection considerations driving investment decisions in the manufacturing sector? This research also positioned the incentives or corporate welfare attribute in the economic competitiveness equation.

Research from academia, the private sector and government sources were studied to support this paper. Reference to the extensive work completed by Dr. Florida and Dr. Gertler, the firm of KPMG, Statistics Canada, the Ontario Ministry of Finance, the Ontario Ministry of Enterprise, Innovation and Opportunity, Industry Canada and various international trade associations served as key resources in this paper. Upon completion, the reader understands in a broader regional context, the competitive state and drivers of the manufacturing sector in Ontario.

Within the regional context established by the secondary research, the program then moved into a study of local competitiveness factors. This required a primary survey research program targeted at business establishments and local municipalities. More specifically, in order to better understand the municipal services manufacturing business establishments need to support their operations, a survey research program comprised of small and medium sized manufacturing firms with more than ten employees was undertaken in the Spring of 2003.

Structure of paper

Structuring the paper was an important consideration in the study process. Given that the primary survey research program served as the tool for identifying municipal context of the core research question, it was important to first establish through secondary sources the factors and reference driving the manufacturing sector as a whole in Canada and specifically in Ontario.

With this approach identified, the paper was structured accordingly. Part Two, *Setting the Stage*: *Overview of Manufacturing in Canada*, established the frame of reference for the entire paper. This section reviewed secondary sources of information, with the goal of highlighting several perspectives and observations of the manufacturing sector in Canada.

Findings of the primary research program, undertaken in the second quarter of 2003, was presented in Part Three, Municipal Initiatives Supporting Competitiveness.

Part Four, Policy Recommendations, translated the primary research findings into a discussion of the key municipal service initiatives and priorities needed by manufacturers. Moreover, the author provided policy guidelines for municipalities interested in building or refining their manufacturing sector strategy.

Part Five provided concluding remarks on the study process and its findings. A comprehensive research appendix and list of references was also provided in this paper for further research.

Assumptions

Data sets used in this analysis are deemed to be the most current sources available on this topic at the time of writing this paper. The views and opinions in this paper were those of the author and not necessarily his municipal employer or other municipalities. Municipal economic development priorities are in constant flux. This research would be of most interest to elected officials and professional staff wanting to support a competitive economy.

Setting the stage: Overview of manufacturing in Canada

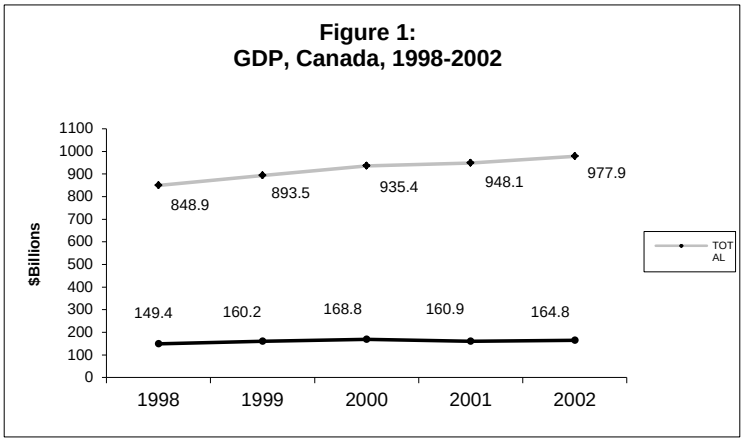
This section reviewed secondary sources of information, with the goal of highlighting several perspectives and observations of the manufacturing sector in Canada. First, principal statistics measuring manufacturing activity were used to establish the geographic structure, performance and diversity of this industrial segment of the Canadian economy. Second, the cost considerations and the key location factors driving the manufacturing sector were presented. Third, a case review of the transportation equipment sub-sector (i.e., the largest sub-sector group measured by key indicators) demonstrated the current challenges facing this industry. Finally, this part of the paper concluded with a program review of the initiatives being undertaken by senior levels of government to support a competitive manufacturing sector. The inherent principal of Canada's incentive or corporate welfare debate is also described in this section.

Principal statistics

The Canadian system of national accounts was used to measure the value of economic production in the country. The gross domestic product (GDP) measures the production originating within Canada. As seen in Figure 1, the total GDP for all industries in 2002 was $977.9 billion (Statistics Canada, Gross Domestic Product at Basic Prices by Industry, 1998-2002). The manufacturing share of total GDP was $164 billion or 16.9 per cent of the economic output in Canada. In Canada, manufacturing was the second highest contributor to the country's economic production, behind the Finance and Insurance Real Estate (FIRE).

During the time frame between 1998 and 2002, Manufacturing moved from $149.4 billion to $164.8 billion (GDP) for 10.3 per cent growth. Over the same period, total GDP increased for all industries by 15.2 per cent.

Figure 1. GDP, Canada, 1998-2002



Source: Statistics Canada, Manufacturing Survey, 1971-1999

Business establishments and employment

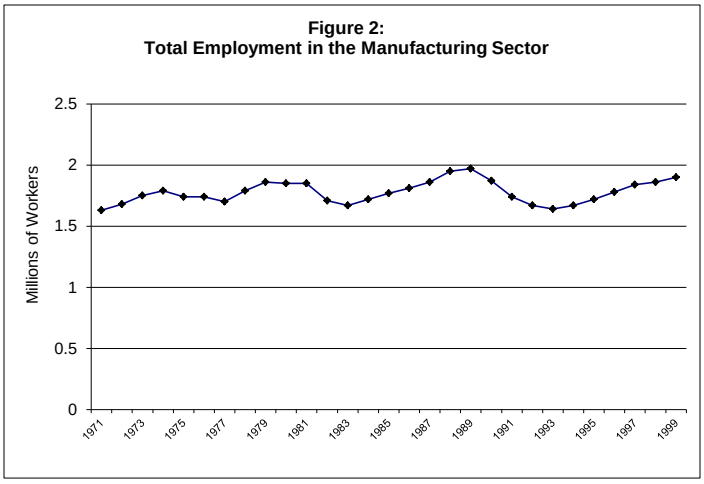
At the time of the last annual manufacturing activity survey in 1999 there were 29,822 business establishments in this sector representing 1.9 million workers of which 1.49 million (or 78 per cent) were production and related workers (Statistics Canada, *Manufacturing Industries of Canada, 1999).* Figure 2 revealed the relatively flat pattern of employment in the Manufacturing sector since 1971, with the high points being 1980, 1989 and 1999 (beyond) in this cyclical industry. The industry has employed between 1.6 – 1.97 million over the 28 years between 1971-1999.

While employment activity has been relatively flat in the 1971-1999 time-frame, the value of shipments of goods produced by Canadian manufacturers has grown from $50.3 billion in 1971 to $488 billion in 1999. This increase in productivity was primarily attributed to the introduction of advanced technologies and significant specialization of functions and processes within the industry.

Manufacturing geography

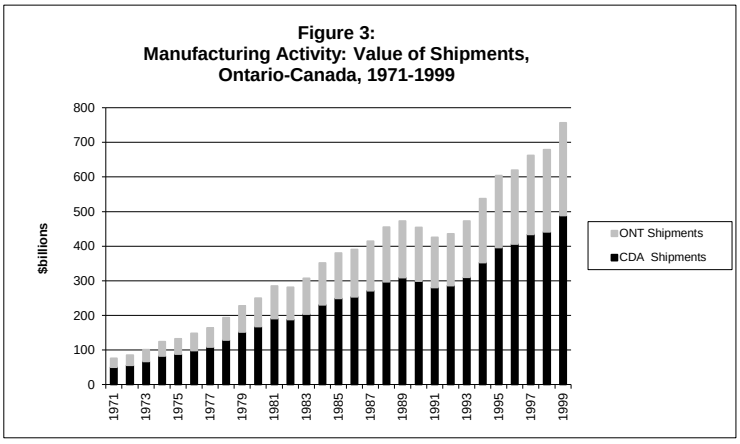
With respect to the geography of the Canadian manufacturing sector, more than 50 per cent of the value of manufactured goods is shipped from Ontario-based establishments. More specifically, in 1971 Ontario manufacturers represented 52 per cent of Canada's production compared to 53-55 per cent between 1984-1999. Figure 3 demonstrated Ontario's growing share of manufacturing activity in Canada.

Figure 2. Total employment in the manufacturing sector



Source: Statistics Canada, 1998-2002

Figure 3. Manufacturing activity: Value of shipments, Ontario, Canada, 1974-1999



Source: Statistics Canada, Manufacturing Survey, 1971-1999

As will be illustrated in this paper, the majority of manufacturing activity in the Province of Ontario occurs within the urban regional economy of the Toronto Commuter Area (TCA). John Baldwin et. al. reported, in their November 2001 paper that "looking at Canada as a whole, there has been no apparent change in the underlying structure of the Canadian economy [i.e., manufacturing employment] that favors rural regions over large urban centres or vice versa" (Dynamics of the Canadian Manufacturing Sector in Metropolitan and Rural Regions). Manufacturing production is concentrated in three major cities: Montreal, Vancouver and Toronto. This was the case, mainly, because the advantages of large labour pools and the source-supplier-customer interactions are highly integrated and dynamic in large cities, according to Baldwin.

Manufacturing sub-sectors

Table 2, the ranking of Canada's largest industrial sub-sectors, best described the structure of Canadian manufacturing. In this illustration, experienced labour force data from the 2001 Census was cross-tabulated with the North American Industrial Classification System (1997) to demonstrate the diversity of Canada's manufacturing sub-sector. Manufacturing employed approximately 2.2 million people or 14 per cent of the total labour force in Canada, at the time of the 2001 Census Survey. Further, as can be seen in Table 2, the top sub-sectors measured by share of total experienced labour force in Canada's manufacturing sector were Transportation Equipment (12.7 per cent), Food Manufacturing (11.5 per cent) and Fabricated Metal product Manufacturing (8.5 per cent).

Management issues

Surveys conducted by the Canadian Manufacturers and Exporters Association heightened the major policy priorities for Canadian manufacturers. The top national policy matters facing the manufacturing industry in 2003 included: Border Management/North American Integration, Kyoto Protocol, Innovation and Skills.

With international unrest at its highest in over a decade, Canadian manufacturers expressed concern over managing Canada-USA borders from a need for security balanced with the efficient movement of goods and services shipped by the industry. According to the Monthly Survey of Manufacturers, exports as a percentage of the shipment of own manufactured products, from Canada to the USA, represented sixty per cent of the total activity. Because of the devaluation of the Canadian dollar in relation to the US currency and the economic scale of the American marketplace, exports from Canada to the USA doubled between 1992 and 2000. Managing border-crossings was listed as a top concern for this reason.

The United Nations Kyoto Protocol requires Canada to reduce greenhouse gas emissions to six per cent below 1990 levels by 2010. It is feared that if current rates of economic growth (2.5 per cent to 3.5 percent -GDP) coupled with existing strains on energy use capacity, Canada will have to reduce its emissions by as much as 30 per cent to meet the Kyoto commitment. With regulations imposed on Canadian manufacturers to reduce emissions businesses fear that such measures could have an impact on their unit productivity costs, by way of higher energy costs, thereby creating an imbalance in Canada's competitive cost advantage in the international marketplace.

Table 2. Manufacturing sub-sectors: Experienced labour force, 2001

Manufacturing Sub-Sectors (NAICS)	**Canada**	**Sub-Sector Share of Total Mfg.**
336 Transportation Equipment Manufacturing	276,010	12.7%
311 Food Manufacturing	249,315	11.5%
332 Fabricated Metal Product Manufacturing	185,185	8.5%
321 Wood Product Manufacturing	159,120	7.3%
333 Machinery Manufacturing	136,365	6.3%
334 Computer and Electronic Product	121,465	5.6%
Manufacturing	120,245	5.5%
326 Plastics and Rubber Products Manufacturing	111,035	5.1%
315 Clothing Manufacturing	108,720	5.0%
337 Furniture and Related Product Manufacturing	105,350	4.8%
322 Manufacturing	99,255	4.6%
325 Chemical Manufacturing	96,180	4.4%
331 Primary Metal Manufacturing	95,235	4.4%
323 Printing and Related Support Activities	82,455	3.8%
339 Miscellaneous Manufacturing	60,330	2.8%
335 Electrical Equipment, Appliance and	58,340	2.7%
Components	33,095	1.5%
327 Non-Metallic Mineral Product Manufacturing	27,360	1.3%
312 Beverage and Tobacco Product	22,305	1.0%
Manufacturing	15,945	0.7%
313 Textile Mills	10,980	0.5%
314 Textile Product Mills		
324 Petroleum and Coal Products Manufacturing	2,174,290	100%
316 Leather and Allied Product Manufacturing		
TOTAL MANUFACTURING		
Proportion of the Total Employed Labour Force	14%	
Total Labour Force	15,872,070	

Source: Statistics Canada, 2001 Census

While innovation was a highly debated subject of senior levels of government in the early 2000s, information from organizations like the John Martin Task Force on Competitiveness and the CME suggests that Canadian companies are lagging behind their competitors in new technology investment, product development and productivity improvements (Measuring Ontario's Prosperity). This has occurred despite Canadian manufacturers' ability to create cost efficiency in local production.

Manufacturers continued to be concerned about the widening skill gap in the labour force and the aging population in specific skill segments. The Manufacturing Sector continued to invest in corporately sponsored employee training programs – the highest investment made by any sector of the economy, according to the CME. Skill shortages most often papered by manufacturers, who responded to a 2002 CME Management Issues Survey, were: Manufacturing Management (51 per cent), Engineering (47 per cent), Tool & Die (38 per cent), Machining (35 per cent), Design (34 per cent), Marketing (32 per cent), Information Technology (29 per cent), Software Programming & Development (26 per cent), Scientific Research (25 per cent), Export Development (24 per cent), Welding (18 per cent) and various Other Technical Skills (28 per cent) (CME Management Issues Survey).

Manufacturing in the Toronto commuter area (TCA)

Toronto is geographically defined by many statistical areas, such as the Census Metropolitan Area (CMA-Statistics Canada); Economic Region 530 (ER-Labour Force Survey); the Greater Toronto Area (GTA-political reference); the Central Ontario Smart Growth Region (Ministry of Municipal Affairs; political reference).

For the purpose of this research each of these spatial definitions of Toronto was set aside and instead, the following hypothesis was tested: A high concentration of workers live beyond the Toronto CMA, and work in Toronto CMA based business establishments. To test this hypothesis, a special tabulation was obtained from Statistics Canada, which examined the commuter flow patterns in Toronto census subdivisions using place of work statistics from the 2001 census. Place of residence and place of work data was tabulated for the largest employment census subdivisions within the Toronto CMA (Cities of Toronto, Mississauga, Brampton and Markham). Results of the tabulation were presented in Table 3.

Based on this analysis, it was concluded that the concentration of business establishments in the major employment centres of the Toronto CMA, drew daily commuters, in 2001, from the following areas:

- Toronto CMA
- Oshawa CMA
- Hamilton CMA

- St. Catharines-Niagara CMA
- Kitchener CMA
- Guelph, CA
- Barrie CA

Table 3. Commuter flows among major employment cities, 2001

Place of Residence	Place of Work				
	Toronto	Mississauga	Brampton	Markham	Total
Toronto	847,540	58,600	12,570	41,065	959,775
Mississauga	90,690	150,115	16,185	2,230	259,220
Brampton	33,760	44,460	61,610	1,290	141,120
Markham	47,115	2,775	740	27,785	78,415
Vaughan	39,185	5,265	2,160	3,925	50,535
Richmond Hill	25,775	2,145	685	7,065	35,670
Oakville	16,690	14,800	1,425	375	33,290
Pickering	23,435	905	210	2,835	27,385
Ajax	16,015	640	200	2,045	18,900
Burlington	7,990	8,125	1,015	170	17,300
Whitby	13,325	535	180	1,950	15,990
Hamilton	6,925	6,575	995	200	14,695
Caldedon	5,085	4,560	3,815	235	13,695
Oshawa	9,545	530	325	1,800	12,200
Halton Hills	2,700	5,425	2,930	130	11,185
Newmarket	7,160	805	275	2,410	10,650
Aurora	5,495	530	230	1,885	8,140
Barrie	4,180	1,115	385	395	6,075
WhitechurchStouffville	2,970	140	80	2,365	5,555
Clarington	4,490	255	80	665	5,490
Milton	1,880	2,745	600	35	5,260
Georgina	2,655	250	100	1,355	4,360
Orangeville	875	1,415	1,680	75	4,045
Guelph	1,570	1,670	480	50	3,770
Cambridge	1,260	1,900	445	20	3,625
New Tecumseth	1,975	770	395	120	3,260
King	2,250	555	165	280	3,250
East Gwillimbury	1,790	235	85	1,010	3,120
Uxbridge	1,575	70	75	1,060	2,780
Innisfil	1,775	420	135	300	2,630

Kitchener	1,050	1,130	305	105	2,590
Bradford/West Gwillimbury	1,645	375	105	380	2,505
Erin	460	1,010	650	25	2,145
Kawartha Lakes	1,205	115	70	310	1,700
Scugog	1,075	60	20	365	1,520
Adjala	625	290	290	40	1,245
St. Catharines	630	415	75	20	1,140

Note: Undercount exists due to exclusion of census subdivisions where papered place of residence numbers were low
Source: Statistics Canada, 2001 Census

The author combined the seven urban areas to construct the Toronto Commuter Area (TCA) as illustrated in Figure 4. Statistics Canada has referred to this similar area as the *Extended Golden Horseshoe.* The TCA comprised a population of 6.7 million, or 59 per cent of Ontario's population and 22 per cent of the Canadian population in 2001. According to Statistics Canada over 50 per cent of the nations population growth occurred in the TCA (Statistics Canada Census Survey 2001).

At 3.59 million, the TCA had the highest concentration of experienced labour force (ELF) in Canada, and represented 60 per cent of Ontario's ELF. A special tabulation from Statistics Canada showing the relationship between ELF (2001) and NAICS (1997) was undertaken to measure the relative concentration of employment activity in the TCA. As can be seen in Table 4, the results of this analysis revealed that the top employers in 2001 were professional, scientific and educational services (300,520).

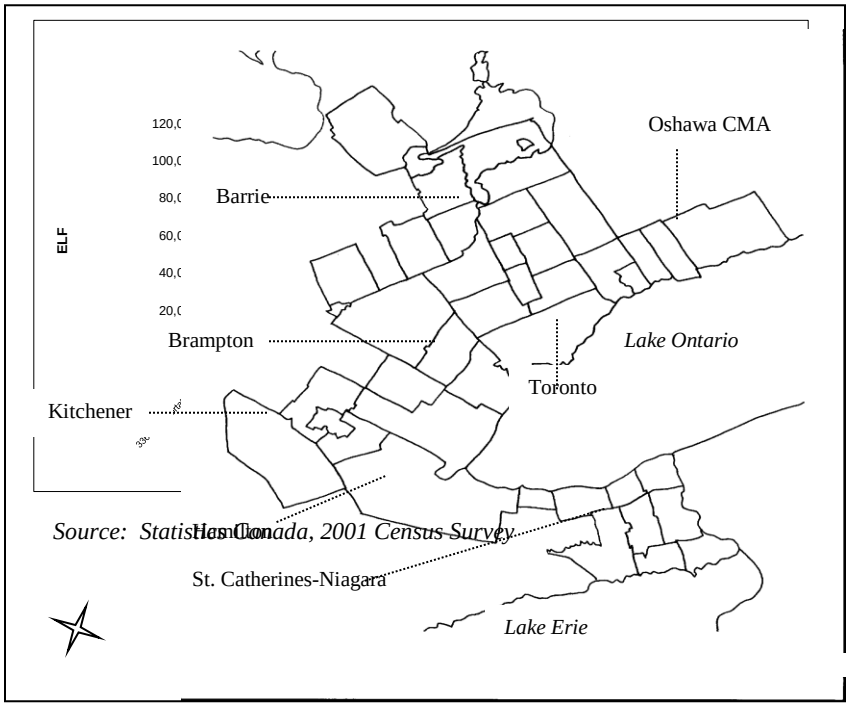
Table 4. Major employment sectors, 2001

541 Professional, Scientific and Technical Services	300,520
611 Educational Services	217,420
722 Food Services and Drinking Places	184,435
561 Administrative and Support Services	159,160
232 Trade Contracting	116,315
522 Credit Intermediation and Related Activities	103,075
336 Transportation Equipment Manufacturing	102,705
621 Ambulatory Health Care Services	95,120
622 Hospitals	87,545

In 2001, there were 613,000 employed in the manufacturing sector representing 21 per cent of all employment in the TCA. Further, 62.3 per cent of all the manufacturing jobs in the Province of Ontario (i.e., 984,320 employed in Ontario manufacturing sector) and 28 per cent of all

manufacturing jobs in Canada (i.e., 2.2 million employed in Canada's manufacturing sector) were in the TCA (2001). As can be seen in Figure 5, the leading manufacturing sub-sectors (measured by experienced labour force) in the TCA were Transportation Equipment (102,000), Fabricated Metal (63,525), Food Manufacturing (55,110), Machinery (44,550), Plastics & Rubber (43,350), Computer and Electronics (42,445), Furniture and Related (34,010) and Chemical Manufacturing (33,365).

Figure 4. Toronto commuter area (TCA)



Source: Statistics Canada, 2001 Census Survey

Given that the manufacturing sector in the TCA was not analysed in any significant detail, the next question of analysis related to the level of manufacturing clustering which has occurred in the TCA in relation to the province of Ontario. An index was created to measure the distribution of ELF in the TCA as a weighted proportion of ELF in Ontario by manufacturing sub-sectors. The formula can be illustrated as follows:

$$\textit{TCA MFG Cluster Index} = \frac{\textit{(TCA ELF NAICS311…339 / Sum of TCA ELF NAICS All Industries)}}{\textit{(ONT ELF NAICS311…339 / Sum of ONT ELF NAICS All Industries)}}$$

The results of this analysis indicated that while the largest employers in the TCA were Transportation and Equipment, Fabricated Metal and Food, Table 5 shows that there was a relatively higher concentration of manufacturing activity in the TCA then all of Ontario, in the following sub-sectors:

Table 5. TCA manufacturing clustering index

315 Clothing Manufacturing	1.4397
337 Furniture and Related	1.3220
323 Printing	1.2403
339 Miscellaneous Manufacturing	1.1336
325 Chemical Manufacturing	1.1162
332 Fabricated Metal	1.1092
326 Plastics and Rubber	1.1050
312 Beverage and Tobacco	1.0994
314 Textile Product Mills	1.0924
311 Food Manufacturing	1.0923
334 Computer and Electronics	1.0638
333 Machinery Manufacturing	1.0322

Source: Manufacturing Survey Program in the TCA, 2003

Additional work could be undertaken within a new research framework to assess the dynamic, structure and geography of these apparent clusters in the TCA.

This section of the paper provided an overview of the manufacturing sector in Canada. Manufacturing is a major industry driving 16 per cent of total direct output in Canada (second only to the FIRE sector), employing over 2.2 million people in 2002, shipping approximately $500 billion worth of goods from Canadian plants (of which 60 per cent is exported). Approximately 54 per cent of all manufacturing activity was generated by Ontario-based manufacturing centres. The Canadian manufacturing industry faced a number of important issues at the national level potentially affecting Canada's competitiveness and prosperity. This section also answered some important questions, namely: *What is the extent of the commuter shed for workers in key employment centres in the Toronto CMA? What is the dynamic and structure of the manufacturing sector in the TCA?* And *does there appear to be clustering of specific manufacturing sub-sectors in the TCA?*

The TCA is an important manufacturing centre in Canada. Given the importance of the manufacturing sector in the TCA to Canada's productivity and competitiveness, the final two sections of the paper explore this question: *What services, incentives and programs could Canada's largest economic region, the Toronto Commuter Area (TCA), deliver to support a competitive local manufacturing economy?*

The next section of this paper highlights a survey methodology used to assess local issues facing manufacturers.

Municipal initiatives supporting competitiveness - Methodology

This section of the paper achieved a number of outcomes: firstly, the methodology and salient findings of a survey program were presented. And, secondly, the survey findings were translated into a discussion of the key municipal service initiatives and priorities needed by manufacturers.

The survey research program set out to measure the relative importance of site selection factors, service enhancement programs and local incentive initiatives to manufacturers in the TCA. A questionnaire was designed (see Appendix 1) to gather information in four areas: first, the size of the company measured by employees; second, the industry classification of the company (applying the NAICS); third, the relative importance of regional competitive and productivity factors; and fourth, the relative importance of local government services, incentives and other economic development initiatives applied to support manufacturers.

The data collection approach used in this program was a self-administered questionnaire targeted at the CEO/President or owner/operator. Each company in the sample was forwarded a copy of the questionnaire by e-mail and instructed to fill-out a single response for each factor. A total of 69 attributes were included in the questionnaire and respondents were asked to select from a scale of one to five the relative importance of each factor to their firm. One represented 'not important at all' and a Five represented the response 'very important'.

The questionnaire was tested through the implementation of a 'pilot' study of ten manufacturers, with the goal to fine-tune the questionnaire design.

With respect to sample size, this survey program targeted firms in the 21 sub-sectors of the manufacturing industry as defined by NAICS. A total of 100 firms were randomly selected using the services of a market research list company and the survey achieved a 41 per cent response rate (41 completed surveys).

Given the relatively small sample size, the goal of this survey research program was not to achieve an overall reliable statistical result. A sample frame was not constructed to ensure statistical reliability in each manufacturing sub-sector nor each of the census subdivisions represented in the defined reference area (TCA). Time and financial resources did not permit the creation of such a sample design; however, the results of this survey established a frame of reference for undertaking a more detailed design in the future.

With respect to analysis of the raw survey data, a number of reports were generated using traditional tabulation techniques. First, each of the 69 attributes was assigned a weighted average defining the relative importance of each on the scale of one to five. Second each attribute was ranked in order of most important too least important. Third, the ranked attributes were then

'cross-tabulated' by (a) the industry segment (NAICS) and (b) the size of the company to measure similarities.

Findings

Tables 6, 7 (A) and 7 (B) illustrated the findings of this research program. Table 6, demonstrates that the most important factors influencing the productivity and competitiveness of manufacturers at their existing business location is Utility and Telecom Reliability, Access to Markets, Labour Availability and Skills, Property Taxes and Fees.

With respect to most important municipal services, programs and incentives influencing the competitiveness and productivity of manufacturers at their existing business location, it can be seen that firms want municipalities to manage an overall low cost operating environment (e.g., utility, taxes, fees and imposts). Property Tax relief and reduction of congestion on the road system were cited as important factors to foster a competitive and productive marketplace. Ensuring access to new clients, and suppliers in the local markets was also cited as an important factor. Least important municipal services for 'business influencing' competitiveness of respondents were more parking enforcement, and more arts and culture performances.

Table 6. Most important business factors

Important Influencers of Competitiveness and Productivity	
Factor	**Score**
1. Utility and Telecom Service Reliability	4.67
2. Access to Markets, Customers & Suppliers	4.54
3. Labour Availability and Skills	4.43
4. Property Taxes and Fees	4.41
5. Physical Infrastructure	4.36
6. Labour Wage Salary Benefits/Cost	4.28
7. Healthcare Costs	4.22
8. Utility Costs	4.18
9. Personal Taxes	4.18
10. Provincial Taxes	4.06

5=Very Important; 1=Not Important at All
Source: Local Business Needs Survey (PILOT), April 2003, D. Cutajar

Policy recommendations

The results of this research program were used to establish an Economic Development Strategy Framework, which may serve as a guideline for municipal economic developers in the TCA or elsewhere.

The program provided a basis for establishing a strategic economic development framework comprising of two broad priority areas:

Table 7. Important municipal services for business

Ranking of Important Municipal Services for Business	
Factor	**Score**
1. Ensure Cost Competitive Operating Environment	4.31
2. Property Tax Relief	4.29
3. Reduce Traffic Congestion on Roads	4.28
4. Attract More Manufacturing/Industry	4.23
5. Access to New Clients/Suppliers	4.21
6. Active Policing Crime Reduction	4.10
7. Safe Sustainable Water and Wastewater Services	4.05

5=Very Important; 1=Not Important at All
Source: Local Business Needs Survey (PILOT), April 2003, D. Cutajar

Ranking of Not Important Municipal Services for Supporting a Competitive and Productive MFG Sector	
Factor	**Score**
1. Parking Enforcement (more is not preferred)	2.32
2. Local Arts Culture Performances	2.47
3. Financial Assistance to Colleges	2.54
4. Participation on Business Delegations	2.54
5. Business Start-up Assistance	2.59
6. Daycare Facilities	2.64
7. Active Parks and Rec for Programs for Employees	2.64
8. Regular Visits With Municipal Officials	2.84
9. Blvd/Tree/Lot Maintenance Services	2.94
10. Provide Transit Near Business Location	2.96

5=Very Important; 1=Not Important at All
Source: Local Business Needs Survey (PILOT), April 2003, D. Cutajar

Managing business costs

The following policy statements provide a general direction for local and senior levels of government to consider, in managing costs designed to foster a competitive manufacturing sector.

1. Ensure a safe, reliable and sustainable supply, as well as a competitive pricing structure for power generation and distribution to and for manufacturing industries in the Toronto Commuter Area.

2. Invest in an expanded and stable broadband infrastructure in the Toronto Commuter Area, serving the information technology needs of manufacturers from a transactional and production process perspective.

3. Invest in inducement programs only for productive and innovative manufacturing companies and establish the program on a reward basis. Further, incentive programs in the TCA, which serve to subsidize weak and unproductive companies or shift manufacturing investment from one part of the region to another, should be discouraged.

4. Amend the Development Charges Act, to ensure a mandatory waiver of development charges on facility expansion or 'greenfield' expansion for growing manufacturing companies. Consider waiving development charges for manufacturing industries located or wanting to locate in in-fill industrial zones 15 years or greater under development.

5. Explore the feasibility of creating equalization factors, applied to a new manufacturing tax rate class for the TCA, which ensures a relatively consistent and predictable cost for measuring the competitiveness of the TCA to other competitive jurisdictions.

6. To maintain a low cost and ample inventory of industrial land in the TCA, as a Land-use Policy Priority, ensure lands are not converted from manufacturing/industrial to other land-uses. Conversion of employment related lands leads inevitably to increase land prices, because of diminishing supply.

Managing a competitive business environment

The following policy statements provide a general direction for local and senior levels of government to consider, in managing a competitive business environment designed to foster a competitive manufacturing sector.

1. Continue to invest public funds in local colleges, advanced learning and technology institutes and universities which are dedicated to creating a larger pool of new hire prospects qualified in multidisciplinary manufacturing functions. Manufacturing functions include: engineering technology, manufacturing management, and integrated disciplines.

2. Continue to invest public funds in educational institutions and corporations, which commit to planning and implementing applied research programs designed to assist with the creation and/or adoption of advanced manufacturing technologies and methods.

3. Invest public funds to establish pre-defined wage subsidies for a fixed period of time for manufacturers who invest in the development of students trained in specific skill sets.

4. Undertake to plan and complete a comprehensive transportation and transit master plan study for the TCA with strategic direction on two fronts (i) removing higher percentage of commuter vehicles off the major highways; and (ii) create a more efficient movement of goods and people to and from the USA. The following infrastructure projects are a priority:
    - Completion of the mid-peninsula network from the TCA to New York State;
    - Completion of an upgraded the 401-I75/I95 connection serving the TCA-Michigan-Illinois-Ohio corridor;
    - Planning for the Highway 413, as the fourth east-west link in the TCA;
    - Extension of Highway 427 north to Barrie.

5. Create a TCA Manufacturing Economic Development Sector Working Group comprised of officials from government and industry to fund a comprehensive economic development strategy focused on the following strategic areas:
    - Ensure Cost Competitive Operating Environment;
    - Attract More Manufacturing and Industry;
    - Access to New Clients and Suppliers;
    - Strategic Alliance Opportunities with other Companies;
    - Attract Talent and Technology.

    - Each municipality in the TCA should establish a Local Manufacturing Competitiveness Forum to provide support in the following strategic areas:
    - Policing and Crime Reduction;
    - Assuring Well Defined and Communicated Procurement Processes;
    - Awareness of Fire and Emergency Service/Fire Prevention;
    - Reduction of Traffic Congestion on Roads;
    - Neighborhood Cleanliness at Business Locations;

- Efficient Snow Removal Services;
- Assistance in Obtaining Permits and Services.

Conclusion

This paper advanced the current thinking of the role local and regional economic developers play in ensuring a competitive marketplace for a key base industry – manufacturing. This paper also demonstrated that manufacturing in the TCA is Canada's largest and most significant economic cluster and therefore warrants more direct assistance and support in *strategically* defined areas than it presently receives. In general, manufacturers prefer less government intervention, therefore the underscored strategic areas is important to note.

A comprehensive primary and secondary research program undertaken by the author revealed the following results:

1. There appears to be a gap in the level of service being provided to the manufacturing sector from local and senior levels of government in the TCA. This paper challenged the long-held view that 'the largest and richest economic cluster in Toronto does not warrant strategic government assistance and support' and therefore this issue needs to be revisited.

2. Manufacturers are sensitive to the costs of doing business, including those generated at the local level such as property taxes/levies/impost fees, utility costs and so on.

3. Manufacturers expect local and senior levels of government to be involved in pro-actively managing a competitive business marketplace in key areas, such as: roads, telecommunications, reliable power, provision of a skilled labour pool. These appeared to be vitally more significant to manufacturers at the firm level, than cash inducements or other corporate welfare incentives.

4. Not surprisingly, the intangible quality of life factors (such as Local Arts Culture Performances, Executive Style/Management Housing, Daycare Facilities, Active Parks & Recreation Programs for Employees) while important in certain sectors of the economy, scored low among manufacturers in the ranking of services driving a competitive and productive sector in the TCA.

Recent publications authored by local and senior levels of government, such as the Central Ontario Smart Growth Panel (*see references*), focused indirectly on the needs of the manufacturing industry. The findings of this study should be used as a basis for further expanding positive work of the Smart Growth panel by initiating a dedicated working group focused on the needs of the manufacturing sector in the TCA.

In summary, the foundation provided in this study can be used to build a needed comprehensive economic development strategy, designed to ensure the growing competitiveness gap between the TCA and other jurisdictions in North America and abroad does not continue to widen.

Author Biography

Dennis Cutajar is the Executive Director of Business Development and Public Relations for the City of Brampton. With a population of 360,000 people, Brampton is Canada's 14th largest City and the 3rd largest in the Greater Toronto Area. Dennis oversees a department responsible for the following services: Economic Development, Small Business Enterprise Centre, Tourism Brampton, Film Communications, Corporate Communications & Marketing and Community Relations. He has been with the City of Brampton for fourteen years. Dennis serves as a Director liaison on several boards including: the Brampton Small Business Enterprise Centre; the Brampton Board of Trade; the Brampton Arts Council HACE Partnership; Greater Toronto Marketing Alliance (GTMA) and is Chairman of the Greater Toronto Area Economic Development Partnership (GTAEDP, 2000-2003).

References

Baker, M. and Daniel Trefler. (2002). *The Impact of Education and Urbanization on Productivity*. University of Toronto. Toronto.

Baldwin, J.R. and W.M. Brown. (2003). *Regional Manufacturing Employment Volatility in Canada: The Effects of Specialization and Trade*, Working Paper No. 005. Statistics Canada and McGill University.

Baldwin, J.R. and W.M. Brown with Tara Vinodrai. (2001). *Dynamics of the Canadian Manufacturing Sector in Metropolitan and Rural Regions,* Working Paper No. 169. Statistics Canada and McGill University.

Baldwin, J.R. and Zhengxi Lin. (2201). *Impediments to Advanced Technology Adoption for Canadian Manufacturers*. Working Paper No. 173. Statistics Canada and HRDC. Ottawa.

Canadian Manufacturers and Exporters. (2002) *Management Issues Survey 2000-2002*, Toronto.

Gertler, M and Dr. R. Florida. (2002). *Productivity: Educational Attainment and Income*, Toronto.

Institute for Competitiveness and Prosperity, The. (2002). *A View of Ontario: Ontario Clusters of Innovation*, Working Papers No's: 1 and 2. Toronto.

KPMG (2002). *Competitive Alternatives*, United Kingdom, United States and Canada.

Ontario Smart Growth. (2003). *Shape the Future: Central Ontario Smart Growth Panel Final Report*, Queens Park, Toronto.

Statistics Canada (1997-2001) .Various Census and Other Publications. Catalogue Numbers: 31-001; 71-001-PPB; 304-0014; 304-0015; 31-203 XPB; 31C0019; 97F0015XCB01003. Ottawa.

Vinodrai, Tara. (2001). *A Tale of Three Cities: The Dynamics of Manufacturing in Toronto, Montreal, and Vancouver, 1976-1997*. Working Paper No. 177. Statistics Canada. Ottawa.