1 Sector Profiles

1.1 Manufacturing: Advanced and Traditional

Advanced manufacturing utilizes new manufacturing techniques and machines, information technology, microelectronics and new organizational practices in traditional manufacturing processes. Increasingly, the implementation of advanced manufacturing practices and processes is the means by which manufacturers are meeting productivity, quality, and cost reduction demands and leading the way in an increasingly globalized environment. The Ontario Ministry of Economic Development defines advanced manufacturing as:

- Industrial research and development focused on new products, methods, or processes with commercial value;
- Design, prototyping and engineering/re-engineering of prototypes, materials, devices, or systems;
- New or advanced materials and products, usually characterized as next generation materials, i.e. composites, polymers, ultra-light metals;
- Manufacturing processes to improve efficiency, productivity, and/or quality;
- Unique or new implementation of advanced production techniques/technologies to improve products/processes
- Development and innovative use of robotics, automation, advanced control systems, or other IT; and
- Development or application of technologies that significantly impact waste reduction or energy conservation

Based on that broad definition, much of traditional manufacturing in Canada and Ontario would likely qualify as some type of advanced manufacturing, especially given the changing environment in which they must compete.

The ESS concluded that manufacturing in Vaughan has been, and will continue to be, a significant part of the city's economic base. To be on the cutting edge, Vaughan will support its strong base of manufacturers, and become an incubator of advanced manufacturing. The City can demonstrate that though many other communities are targeting development in the advanced manufacturing sector, Vaughan, based on its existing manufacturing strengths and commitment to incubation is the best destination for investment.

1.1.1 Global Trends and Context

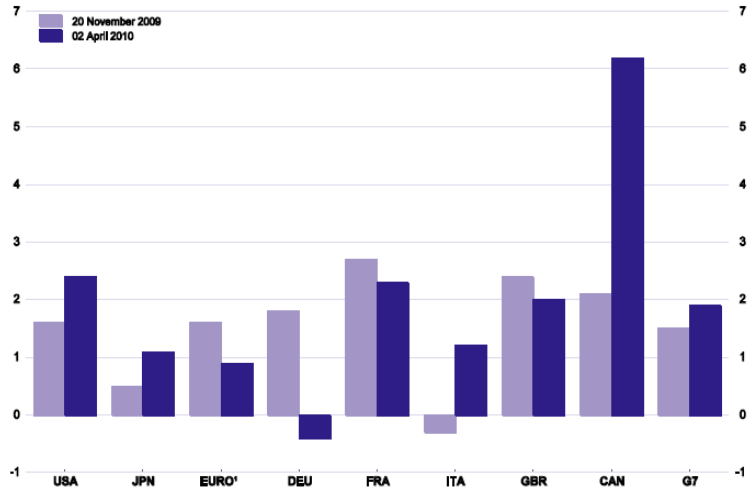
Across the globe, the patterns of production and consumption have been changing for some time. Low skill or lower-value goods production has been shifting to lower cost destinations like the BRIC[1] countries, while manufacturing in developed nations has turned to high-skill, capital-intensive product production, where lower cost destinations have difficulty competing. The most recent economic downturn has further identified many of the opportunities or challenges for manufacturing across the globe. The prevailing trends in manufacturing are having significant influence over where production occurs, what types of firms and workers are needed, and what processes are used in production.

The following section illustrates some of the major trends influencing manufacturing and advanced manufacturing across the globe.

- Though the global economy remains fragile, market indicators are starting to reflect the slow emergence from the most recent economic downturn at varying speeds across countries and regions, and with demand stabilizing many industrial sectors could rebound[2]

[1] Brazil, Russia, India, and China
[2] OECD, 2010, *What is the outlook for OECD countries? An Interim Assessment*

Figure 1: Developments in the OECD Indicator Model for Q1 2010 GDP forecasts, GDP growth in per cent



Source: Datastream, Markit Economic Limited; and OECD Calculations, 2010

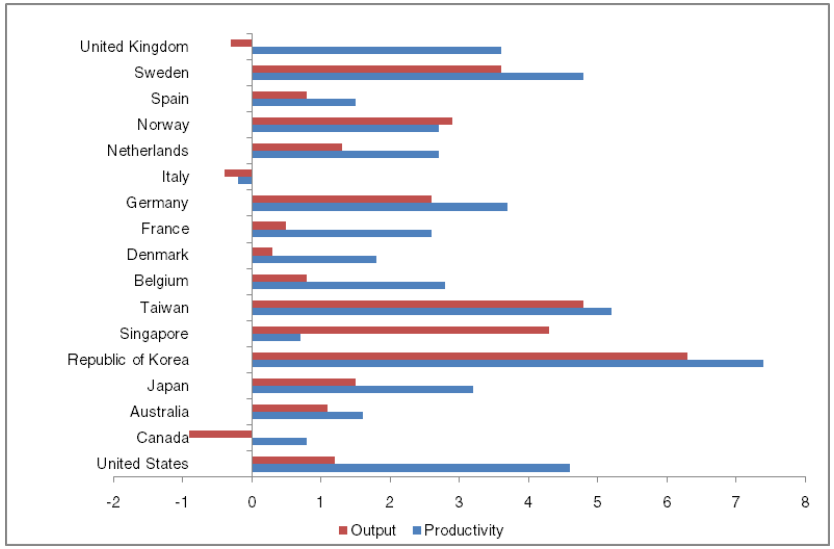
- The dominance of large-scale vertically integrated manufacturers is giving way to the development of smaller, more entrepreneurial manufacturing operations that can offer flexibility to customize products and meet shifting market demands; these smaller manufacturers are often focused on niche areas of the economy

- To reinforce collaboration, continuous improvement and flexibility in product design, firms are increasingly looking for employees with excellent team building and problem-solving skills, which is highlighting the need for manufacturers to engage the technically savvy and openly collaborative individuals of Generation 'Y' and skilled workers

- Energy costs are increasingly challenging off-shoring, and some production of high-skill/high-capital products is moving closer to consumers; in green product manufacturing, proximity makes sense from a sustainability perspective

- From 2000 to 2008, Canada's productivity grew only moderately by 0.8% per year, and Canada also experienced average annual decreases in manufacturing output (-0.9%); despite moderate gains in efficiency, output has still dropped noting the erosion of Canada's manufacturing competitiveness against other jurisdictions

Figure 2: Manufacturing Productivity and Output, Average Annual Rate of Change 2000-2008



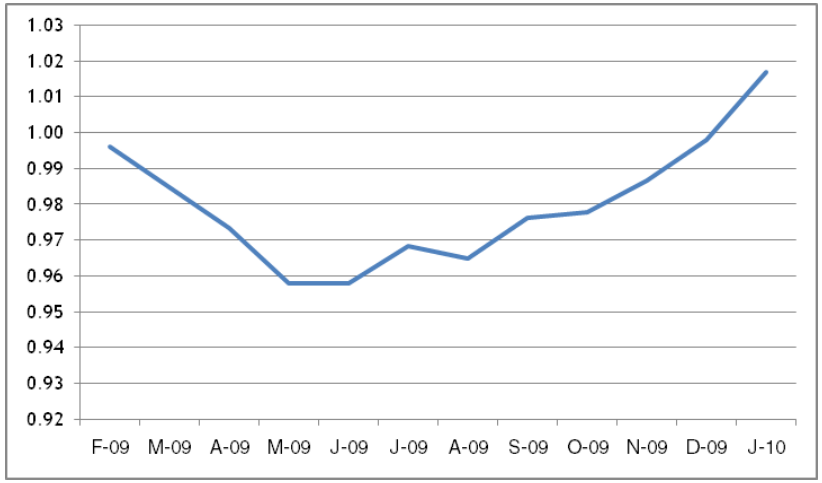
Source: Derived from 2009 U.S. Bureau of Labour Statistics by Millier Dickinson Blais, 2010

1.1.2 National/Provincial Trends and Context

Despite the recent economic downturn, manufacturing still plays a significant role in the country's economic base. The trends below illustrate that Canada's best opportunities in manufacturing may lie in the implementation of advanced manufacturing technologies, to regain some of the competitiveness that has been lost due to external trends.

- The manufacturing labour force has declined by 18.4% from 2005 to 2009; and 12.4% from 2007 to 2009
- Sales of manufacturing industries have suffered up to and through the economic downturn, with 19 of 21 manufacturing industries posting sales declines from 2007 to 2008; most notably in sectors where sales rely on discretionary spending like automotive and clothing
- Signalling a slight recovery through a somewhat volatile year, manufacturing GDP grew 1.7% from January 2009 to 2010; while most recent employment numbers show an increase of 0.2% from February to March 2010

Figure 3: Canadian Manufacturing GDP at basic prices, indexed to January 2009

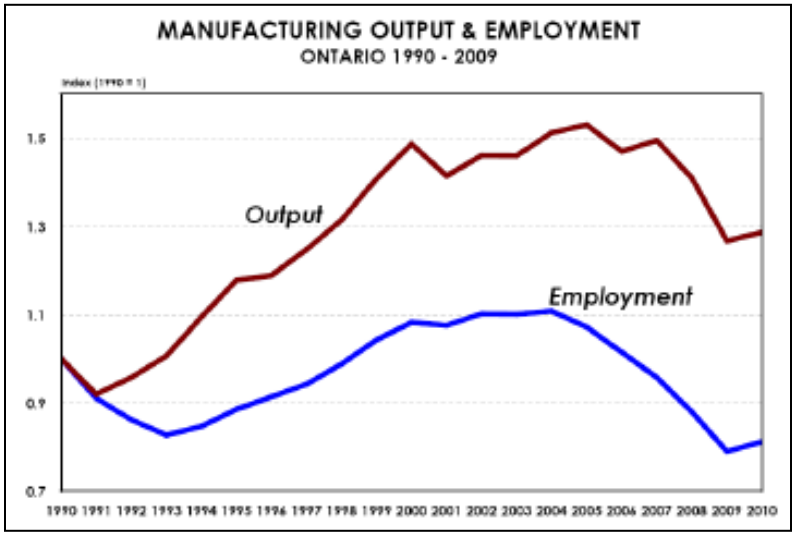


Source: Derived from Statistics Canada, National Economic Accounts, by Millier Dickinson Blais, 2010

As home to the majority of manufacturing employment in Canada, Ontario's economy has not been immune to the turmoil in the manufacturing sector. However, despite the prevailing trends, manufacturing remains an important part of the province's economy, one that is forecasted to expand given the diverse range of industries in the province that have an impact on advanced manufacturing.

- Reflecting the trends at the national level, both manufacturing employment and output have declined in recent years; however, over the longer term the provincial manufacturing sector has generally been increasing output while employment has declined, suggesting a history of technology and process improvements in the sector

Figure 4: Manufacturing Output and Employment, Ontario, indexed to 1990



Source: Statistics Canada, Hemson Consulting, 2010

- Ontario's goods producing industries are starting to rebound on strengthening consumer spending and recovering housing construction, as reflected by GDP growth of 1.3% in January 2010. The traditionally strong auto sector is showing anecdotal signs of recovery after restructuring with the addition of shifts and production at assembly plants, but the majority of job losses are expected to be permanent in the sector[3]

- The amount of greenfield land designated for development is diminishing in southern Ontario, while employment land or industrial employment is projected to continue growing, placing municipalities with developable land in a competitive position for industrial development

- Contrary to the prevailing perceptions about an overall decline of manufacturing, especially in southern Ontario and the Greater Toronto Area-Hamilton, and notwithstanding the decline of output at the national level, the economy has become more oriented towards manufacturing than other sectors when considering output[4]

1.1.3 Local Trends and Context

Manufacturing in Vaughan accounted for over 40,000 jobs in the local economy in 2006, representing a 5.8% increase from 2001. During that time the number of manufacturing jobs across the province declined by 9.2%. Overall, the concentration of manufacturing jobs in Vaughan is approximately twice that of the provincial economy, tying the local economy's fortunes to the manufacturing sector. Only the construction sector had a higher concentration of employment (relative to the province) than the manufacturing sector in 2006.

- By employment, the largest manufacturing industries in Vaughan in 2006 were: Motor vehicle parts manufacturing, plastic product manufacturing, household and institutional furniture and kitchen cabinets, office furniture manufacturing, and architectural and structural metals manufacturing. A large portion of local jobs are in industries where advanced technologies are implemented.

- Within those subsectors Vaughan has high concentrations of employment in more specific industries: hardware manufacturing, office and other furniture, plastic products, household and institutional furniture (i.e. cabinetry), wood products, structural metals, resins and synthetic fibres, motor

[3] Scotiabank Group, Provincial Trends, 2009

[4] Hemson Consulting, Vaughan Employment Sectors Strategy, 2010

vehicle parts, navigational, measuring, medical, and control instruments, metalworking machinery, and bakeries.

- From 2006 to 2008, Vaughan lost 4,507 manufacturing jobs, or close to 10% of the employment in the sector; the transportation equipment sector which shed jobs across the Province remained relatively stable from 2006 to 2008, with plastics and rubber, computer and electrical components, building or construction products, chemicals, and food manufacturing absorbing the highest losses.[5]

- These trends in part reflect those of the larger Toronto CMA between 2004 and 2008, where the largest job losses were in plastics and rubber (44%), transportation equipment (19%), furniture (34%), machinery manufacturing (37%), and clothing (55%)

Figure 5: Manufacturing Jobs by Sub-sector

NAIC	Sub-Sector	2006	2008	% Total, 2006	% Total, 2008
311, 312	Food & Beverage Manufacturing	3,167	2,707	6.4%	5.9%
313	Textile Mills	87	53	0.2%	0.1%
314	Textile Product Mills	411	478	0.8%	1.0%
315	Clothing Manufacturing	657	590	1.3%	1.3%
316	Leather & Allied Product Manufacturing	141	121	0.3%	0.3%
321	Wood Product Manufacturing	1,714	1,660	3.4%	3.6%
322	Paper Manufacturing	658	697	1.3%	1.5%
323	Printing Manufacturing	1,777	1,700	3.6%	3.7%
324	Petroleum and Coal Products	62	70	0.1%	0.2%
325	Chemical Manufacturing	1,449	1,302	2.9%	2.8%
326	Plastics and Rubber Products Manufacturing	8,003	4,684	16.1%	10.2%
327	Non-Metallic Mineral Manufacturing	1,865	1,755	3.7%	3.8%
331	Primary Metals Manufacturing	888	915	1.8%	2.0%
332	Fabricated Metal Product Manufacturing	6,240	6,568	12.5%	14.3%
333	Machinery Manufacturing	5,032	5,177	10.1%	11.3%
334	Computer and Electronic Products	2,386	1,851	4.8%	4.0%
335	Electric Equipment, Appliance and Components	1,356	767	2.7%	1.7%
336	Transportation Equipment Manufacturing	6,581	6,567	13.2%	14.3%
337	Furniture and Related Products	5,103	5,608	10.2%	12.2%
339	Misc. Manufacturing	2,250	2,552	4.5%	5.6%

Source: York Region Employment Survey, EDP Consulting, 2010

- Vaughan's manufacturing sector is dominated by SMEs, with 67% of firms employing less than 20 people; 92% have fewer than 100 employees

Manufacturing has been a key to Vaughan's success based on large contiguous employment areas and significant transportation infrastructure like Highway 400, large multi-modal rail yards, and proximity to Pearson International Airport. Further regional factors will have an influence on manufacturing:

- Vaughan has a highly marketable and large supply of employment lands: approximately 3,700 net has of employment land, 35% or 1,240 net ha of which is vacant. Only Brampton (4,300 net ha) and Milton (1,330 net ha) have comparable supplies with Pickering's Seaton Lands not

[5] York Region Employment Survey, 2009

being on the market. As well, Milton's lands are subject to servicing constraints.

- New employment areas are designated through the new Official plan, with additional regulations in place to protect them and ensure locations for niche/emerging advanced manufacturing (especially Green industries)

- Plans are underway for transportation infrastructure improvements that will influence goods movement directly like the Highway 427 extension, and indirectly through transit investments (Spadina-York Subway, Highway 7 Corridor, GO transit)

- Vaughan has a large inventory of industrial buildings: 63 million square feet of industrial (9% of the GTA) and rents are close to or under average for the GTA

- Several threats exist for advanced manufacturing in Vaughan: Road congestion across the GTA, existing and potential implementation of tolls, dependence of intermodal on roads, and better access to U.S. in other communities

- Development charges are high but the GTAH experience notes that this has not diminished building activity in those areas i.e. though Hamilton and Toronto exempt industrial development they have not accommodated significant investment as a result

- Vaughan has some of the lowest property tax rates in the GTAH, which are paired with quality municipal services and a high standard of service delivery with regards to business development

- The Magna-NRC Composite Centre of Excellence in Concord is focused on producing next generation composite technologies for automotive components. The facility includes moulding equipment for thermoplastic composites

Over-arching trends suggest that the best opportunities for growth will be from small and medium-sized entrepreneurial businesses that can easily shift production or integrate productivity improvements through advanced technologies, though larger scale traditional manufacturers should not be neglected. Supporting these small and large businesses will be a key to the sector's sustainability. Opportunities to implement advanced technologies will span the entire sector, so a focus of activity should be encouraging businesses to integrate new processes.

However, Vaughan has notable strengths in the manufacturing sector that should be noted as primary targets for the City. Given the current economic climate and reality, attraction efforts may be limited, especially in Vaughan's dominant strengths in automotive, chemical/plastics, and furniture. Since it is a dominant industry though, the City should look towards retention and expansion efforts to support the sector. Current and emerging strengths include:

- Metal hardware manufacturing;
- Office, household, and institutional furniture;
- Plastics;
- Wood products;
- Motor vehicle parts;
- Metalworking machinery;
- Architectural and structural materials;
- Bakeries and tortilla manufacturing; and
- An emerging strength in meat products

Support is given to some type of advanced manufacturing activities through the new Official Plan. The Plan supports green

industries/value added and environmentally responsible green products/processes, climate change responders, and those with sustainable development objectives. To that end, the plan also supports the development of eco-industrial parks that use district energy, re-use byproducts, and share resources, services, and facilities. These initiatives intersect with several of Vaughan's strengths, including plastics manufacturing, hardware manufacturing, and potentially motor vehicle products as well. All three industries have intersections with green manufacturing principles.

1.1.4 Considerations for Vaughan

Advanced manufacturing processes are increasingly being employed by manufacturers across the developed nations in order to stay ahead of competition from lower cost BRIC nation competitors. At the same time Manufacturing is becoming more entrepreneurial with a focus on the flexible production of customized products. This flexibility requires flexible space. Innovation and product enhancement will require research and development. Vaughan needs to leverage their assets to incubate flexible and dynamic firms employing advanced manufacturing techniques. This could be accomplished through partnership building (engineering schools, technical institutes) to develop an advanced manufacturing incubation facility and through the development of adaptable high technology facilities as greenfield sites are occupied.

Product design in advanced manufacturing requires a workforce with higher technical and problem solving skills. While Vaughan has a highly educated resident labour force, the demand for skilled workers in the future necessitates the need to expand post secondary education in the city. Vaughan has the opportunity to partner with educational institutions to create an advanced manufacturing techniques research and training centre. Strategic partnerships can be developed with professional and trades associations and post secondary institutions to develop and implement unique on-site training programs.

Higher energy costs and other sustainable factors are raising the value of manufacturing green products in close proximity to the end market. Vaughan is perfectly positioned to become an incubator of sustainable processes. In promoting and advancing the use of sustainable buildings, Vaughan can work with the development industry and ICA community to incorporate flexible and green design in all new building construction.

1.2 Professional, Scientific & Technical Services

Professional, scientific and technical services industries are comprised of a range of service and consulting related activities that are becoming of increased importance to developed urban economies. The key elements of this broad industry group include:

- Legal services industries;
- Accounting and related services industries;
- Architectural, engineering and related services industries;
- Surveying and mapping services industries;
- Design services industries;
- Management, scientific and technical consulting services industries;
- Scientific research and development services industries; and
- Advertising services industries.

This sector is on the leading edge as the global economy transitions from a good production economy to a knowledge economy. PSTS workers are knowledge workers. Overall, the professional, scientific and technical services sector has experienced rapid growth in the GTA and Vaughan over the past several years. More specifically for Vaughan, its current underrepresentation and past growth indicates that it is a major opportunity for Vaughan.

1.2.1 Global Trends and Context

The professional, scientific and technical services (PSTS) sector is profoundly affected by the broader structural changes occurring in the global economy. A breadth of academic research, popular commentary and economic data reflect the fact that developed economies are undergoing a transformation to a knowledge-based economy, which includes businesses and economic activities that rely on talent and advanced skills as their primary inputs.

This increased demand for talent has been accompanied by increased wages for those in what Richard Florida has referred to as the “creative class” – the portion of the workforce employed in a variety of professional and technical fields that get ‘paid to think’. What this structural shift has meant at an industry level is that routine or low-cost operations, including many goods-producing sectors and lower-wage service and clerical positions, have been outsourced to locations where labour and capital can be secured at lower cost. Because the PSTS sector is selling knowledge and expertise, it can afford to charge higher prices – and pay higher wages – than those other sectors.

In addition, it is likely that the PSTS sector will continue to grow and concentrate in cities as it fits the profile of an ‘untraded’ sector of the economy. That is, it contains operations or services that must be accessed and delivered within the local economy, for reasons of cost, time and local knowledge, and thus cannot be off-shored at lower cost.

Collectively, these trends have accelerated the growth and importance of the professional, scientific and technical services to advanced economies.

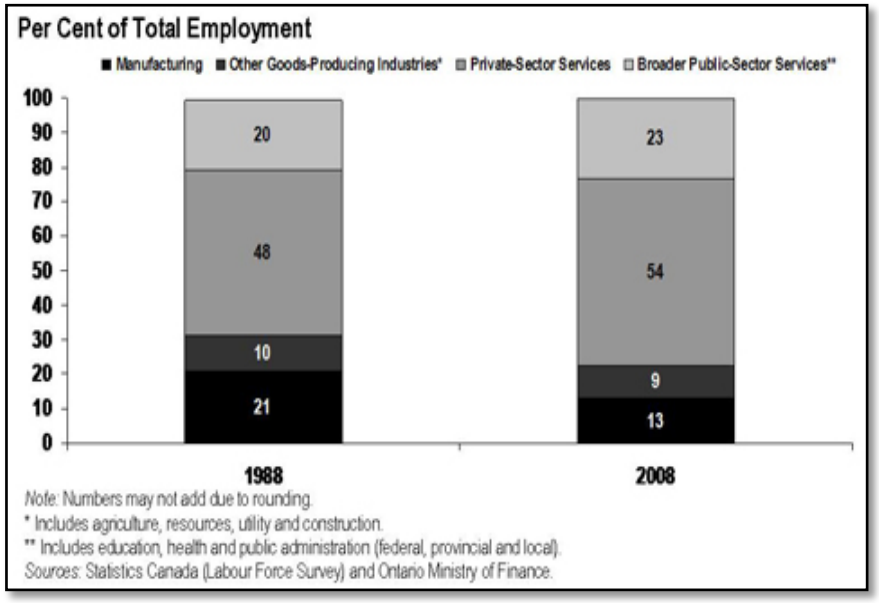
1.2.2 National/Provincial Trends and Context

The broad economic shift occurring throughout the international economy has been especially pronounced in Canada and Ontario. Traditionally, Canada has been a resource-based economy, relying on primary and goods-producing industries to drive its economic base. Similarly, the strength of the Ontario economy over the last two decades has been fuelled by manufacturing, particularly in the automotive sector.

These trends have largely reversed in the Ontario economy, noted through the figure below. Service-producing industries (all industries excluding agriculture/primary, construction, manufacturing and

utilities) now drive a significant share of growth in GDP and employment in the province:

- As of March 2010, service-based industries employed over 79% of Ontario's workers[6].
- When measured in terms of GDP, PSTS and administrative services comprised 8.85% of the Ontario economy in 2009, up slightly from 8.77% in 2008[7].



More specifically, the PSTS sector has also shown pronounced growth in recent years. Given that it is a service and consulting-based industry, it can be expected to closely follow economic cycles, and was expectedly impacted by the recession of 2008 and 2009. However, it has also proven relatively resilient.

- The industry's output declined just 2.3% in 2009
- Total provincial employment in the sector increased 13.8% to 553,000 between March 2009 (near the lowest part of the recession) and March 2010[8].

- Given the high level of education and expertise demanded in this sector, it also represents *high-value* employment. Among 16 major industry groups in Ontario, professional scientific and technical services paid the 3rd highest wage rate in 2008 ($29.57 CDN/hr)[9].

- Looking at a national level, labour productivity in the PSTS sector has also outperformed other segments of the economy. Between 1999 and 2008, productivity in the sector increased 3.4% per year on average increased 2.4% per year for the Canadian economy overall.[10]

1.2.3 Local Trends and Context

The pronounced shift from goods-producing to service-producing industries in the national and provincial economies described above has been even more pronounced in the Vaughan economy, which has traditional (and continued) strengths in manufacturing, construction and trade.

Looking first at a regional level, the Toronto Census Metropolitan Area (CMA) has experienced a shift in employment of 7.0% of its workforce from goods-producing to service-producing industries between 1988 and 2008. The PSTS sector showed the highest individual sector growth in the CMA over that time period, at 3.4%.

In Vaughan, PSTS employment grew at the incredible rate of 33.2 % between 2001 and 2006, to 8,580 workers. Defined more broadly as

[6] Statistics Canada, Labour Force Survey, March 2010.
[7] Ontario Ministry of Finance, Ontario Economic Accounts, Fourth Quarter of 2009.

[8] Statistics Canada, Labour Force Survey, March 2010.
[9] InvestinOntario.com; Statistics Canada, Labour Force Survey 2008.
[10] Statistics Canada. Labour Productivity Index, 1999 to 2008.

'business and related services', it showed a higher rate of growth in Vaughan between 2001 and 2006 than any other jurisdiction in the Greater Toronto Area including Hamilton. When measured in terms of jobs, the City experienced growth of 31.5% over the same time period[11].

Despite this growth, Vaughan still possesses a low concentration of employment in the PSTS sector relative to the province, with a location quotient of 0.77. In addition, the City of Vaughan exports PSTS workers, mostly to Toronto. This suggests there is still significant opportunity to capture increased growth and live-work opportunities in the sector in the city in the years to come.

Overall, Vaughan has a broad-based professional, scientific and technical services sector (see Figure 6). Measured by number of companies, accounting, tax preparation, bookkeeping and payroll services and legal services are the largest sub-sectors. However, it is important to note that the PSTS industry is typified by the presence of small firms, to a greater degree than the economy as a whole; based on Statistics Canada data, it is estimated that 25.6% of people employed in this sector worked at home in 2006 (compared to 5.9% for all other sectors). So, architectural, engineering and related service firms, though they comprise a smaller number of total firms, hold the highest share of PSTS sector employment, indicating a greater presence of larger firms in this area.

[11] Statistics Canada. Labour Productivity Index, 1999 to 2008.

Figure 6: PSTS Sub-sector performance, City of Vaughan, 2008

Sub-sector	# of companies	% of PSTS companies	% of PSTS employment
Accounting, tax preparation, bookkeeping and payroll services	139	21.5	11.5
Legal services	127	19.6	10.9
Architectural. engineering and related services	89	13.7	19.3
Management, scientific and technical consulting services	65	10.0	6.7
Computer systems design and related services	64	9.9	16.8
Advertising, public relations and related services	44	6.8	17.3
Other	120	18.5	17.5
Total PSTS	648	100	100

Source: Derived from Statistics Canada, Canadian Business Patterns by Millier Dickinson Blais, 2010

In recognition of the prevailing employment trends and the growing importance of PSTS companies and workers to the local employment, The City of Vaughan has explicitly targeted this industry for growth in both their Official Plan and Employment Sector Strategy. The development of the Vaughan Metropolitan Centre and Jane and Major Mackenzie Primary Centre, both of which will be zoned for mixed uses, could increase Vaughan's attractiveness as a

location for large-scale accounting, legal, engineering, architectural and other firms as it would be easier to attract qualified support workers who commute by transit rather than by vehicle.

Though most PSTS firms are located in major offices, because of the variation in specializations and firm sizes, many are also located in small offices located on main streets, within intensification areas, and within cheaper or older industrial areas. However, given that this sector is primarily local-serving, its firms also benefit from co-location with other related business and industries with which they can share knowledge and resources. Thus, firms in the sector may be particularly suited to the high-density mixed use, transit-oriented hubs that the City is in the process of developing, such as the Vaughan Metropolitan Centre.

1.2.4 Considerations for Vaughan

PSTS is on the leading edge of the transition to a knowledge based economy. Evidence suggests that, in Canada, this shift is most pronounced in the GTA and Vaughan in particular. This is a trend to be embraced given that PSTS as an industry was relatively resilient to the recession posting large employment gains immediately following the end of the recession in 2009. In addition this sector has the 3rd highest wages of 16 major industry groups in Ontario.

PSTS offers services that, for reasons of costs, time, and local knowledge are accessed and delivered locally. Given that Vaughan has a low concentration of workers in this industry and that the city is still exporting these workers, there is reason to believe a greater portion of the local market can be captured by PSTS workers resident in Vaughan. As an incubator of PSTS workers and firms, Vaughan will need to adjust business services provided through the enterprise centre to focus on transitioning the resident workforce to entrepreneurs and small business owners. A PSTS incubation centre located in the Vaughan Metropolitan Centre (VMC) could encourage business development and employment in this sector. Vaughan itself can source local providers and build networks to encourage resident businesses to source PSTS services locally.

More than any other sector PSTS workers are in small firms or working from home. This requires Vaughan to pay special attention to the space and live/work opportunities available to accommodate these home based and small businesses. The new VMC or unique co-location space in the enterprise zone are excellent opportunities for Vaughan to expand this sector.

1.3 Transportation, Logistics, Warehousing & Distribution

The transportation, logistics, warehousing, and distribution cluster encompasses actual goods movement like trucking, rail, air, pipeline, and marine transport, but also the range of activities that support the movement of goods from producer to consumer, including maintenance of vehicles, facilities, and infrastructure, and storage and logistical support (cross-docking, freight arrangement, customs).

The ESS concluded that based on a number of strengths like the manufacturing and building products industries, the role of the GTAH in goods movement, the available land, transportation connections and market access, the sector is well poised for growth in Vaughan and should require little policy intervention. However, as with other sectors, globalization has changed the environment in which areas need to compete for growth, so it is necessary to examine the global and national context in which Vaughan will compete.

1.3.1 Global Trends and Context

Global trade has affected transportation and logistics in a profound ways, shaping the industry and influencing location decisions and performance within transportation and logistics. As well, security concerns have shaped the industry resulting in more stringent trade policies and potentially higher wait times. Several global or macro trends include:

- The globalization of production and consumption has produced truly global supply chains where raw materials, semi-finished goods, and finished products are transported from country to country. This has placed importance on port and airport facility growth to accommodate global trade, but also long-distance intermodal connections that land-bridge freight at low prices (rail) and deliver directly to the consumer (trucking)

- Global goods movement is time sensitive, placing emphasis on supply chain management which affects building size, design, and location, as well as the continued integration of new information technology solutions to manage supply chains where “parts” come from all areas of the globe

- The expectation of cheap energy is waning in light of volatile energy prices and concerns about supply, so the industry is bracing for higher transportation costs – all modes of transportation are investing in more efficient, larger vessels/vehicles and improved processes

- Capacity increments and infrastructure improvements are not matching world freight volume growth, producing bottlenecks at some entry points and driving the growth of alternate international ports, i.e. Port of Prince Rupert or Port of Vancouver vs. Port of Long Beach, and also improvements to freight movement efficiency (load consolidations, reducing transfers)

- Globally, Canada has a relatively competitive position as a logistics and transportation hub, illustrated by The World Bank’s Logistics Performance Index (LPI).[12] The score

[12] The Logistics Performance Index is the weighted average of a County’s scores in six key dimensions: efficiency of customs clearance, quality of trade and transport-related infrastructure, ease of arranging shipments, competence of logistics services, ability to track and trace consignments and the timeliness of shipments reaching their destination. The scale runs from 1 to 5 where five is a maximum score

(3.87) places Canada above the average score (3.55) for all "high Income" economies[13]. This is largely based on strengths in Logistics Competence/quality (8th overall) and Timeliness (5th overall), but all areas scored within the top 15 across the globe.

Figure 7: Logistics Performance Index (LPI), Top 20 Countries, 2010

Int. LPI Rank	Country	LPI	Customs	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeliness
1	Germany	4.11	4	4.34	3.66	4.14	4.18	4.48
2	Singapore	4.09	4.02	4.22	3.86	4.12	4.15	4.23
3	Sweden	4.08	3.88	4.03	3.83	4.22	4.22	4.32
4	Netherlands	4.07	3.98	4.25	3.61	4.15	4.12	4.41
5	Luxembourg	3.98	4.04	4.06	3.67	3.67	3.92	4.58
6	Switzerland	3.97	3.73	4.17	3.32	4.32	4.27	4.2
7	Japan	3.97	3.79	4.19	3.55	4	4.13	4.26
8	United Kingdom	3.95	3.74	3.95	3.66	3.92	4.13	4.37
9	Belgium	3.94	3.83	4.01	3.31	4.13	4.22	4.29
10	Norway	3.93	3.86	4.22	3.35	3.85	4.1	4.35
11	Ireland	3.89	3.6	3.76	3.7	3.82	4.02	4.47
12	Finland	3.89	3.86	4.08	3.41	3.92	4.09	4.08
13	Hong Kong, China	3.88	3.83	4	3.67	3.83	3.94	4.04
14	Canada	3.87	3.71	4.03	3.24	3.99	4.01	4.41
15	United States	3.86	3.68	4.15	3.21	3.92	4.17	4.19
16	Denmark	3.85	3.58	3.99	3.46	3.83	3.94	4.38
17	France	3.84	3.63	4	3.3	3.87	4.01	4.37
18	Australia	3.84	3.68	3.78	3.78	3.77	3.87	4.16
19	Austria	3.76	3.49	3.68	3.78	3.7	3.83	4.08
20	Taiwan	3.71	3.35	3.62	3.64	3.65	4.04	3.95

Source: The World Bank Logistics Performance Index, 2010

1.3.2 National/Provincial Trends and Context

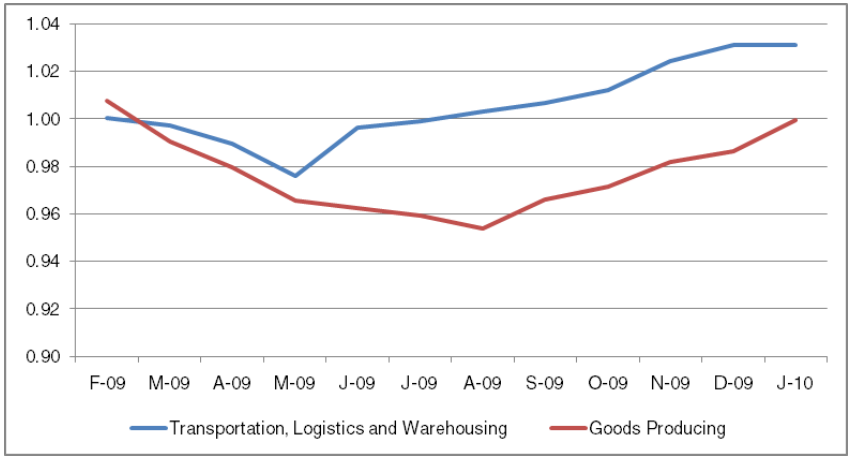
Like other industrialized nations, Canada remains a centre of goods consumption, and to some extent, goods production in specialized industries. Many of the goods that are produced are of higher-value or are specialized components which are very time sensitive to manufacturing, stressing the need for efficient transportation and logistics. As well, west-to-east goods movement is driving infrastructure investment, as is the slightly more dominant north-south movement of gods in the southern Ontario context. For that reason, transportation and logistics has been relatively stable despite losses of employment and production demonstrated in the industries it supports, such as manufacturing, construction, and building products.

- The Canadian Transportation, Logistics and Warehousing sector GDP went from $46.6 billion in 1999 to $56.8 billion in 2008, for a compound growth rate of 2.0%, compared to a slightly higher compound annual growth of 2.3% for the National GDP. Much of this can likely be attributed to slowing activity of industry sectors that transportation and logistics support

- From January 2009 to January 2010, sector GDP was relatively stable, declining only slightly at the beginning of the year in transportation, logistics and warehousing, and climbing for the final eight months of the year to produce a year-over increase. Goods producing industries, declined steadily picking up in the last part of the year to level off at the values from the beginning of the year.

[13] See The World Bank's classifications for "High Income" economies here: http://data.worldbank.org/about/country-classifications

Figure 8: GDP at basic prices, indexed to January 2009, Canada



Source: Derived from Statistics Canada, National Economic Accounts by Millier Dickinson Blais, 2010

- Congestion and rail capacity at traditional ports of first call such as Los Angeles and Long Beach has diverted freight to Vancouver or Seattle, and more recently the Port of Prince Rupert with expansions to capacity. Despite this, freight land-bridged from US ports is projected to continue to be delivered via truck from Chicago (for example), placing emphasis on cross-border infrastructure

- This produces an opportunity to shift some of the logistical and intermodal operations that would have occurred in Chicago (the hub of rail-truck intermodal operation in the US) to Canada. The Canadian Government is supporting this through the Asia-Pacific Gateway and Corridor Initiative which is focused on policies and projects to improve the goods movement infrastructure from Western Canada into the US Midwest and Southern Ontario, in order to make Canada's west coast the nest option for trade between Asia and North America.

Ontario has been the location of choice for national distribution because it is the largest market for almost any product. Companies that need a distribution centre that can access eastern Canada or the entire country often choose Ontario, and more specifically the Greater Toronto Area, based on the extensive highway network and proximity to major air cargo hubs for transport of high-value goods.

Figure 9: GDP at basic prices indexed to 2000, Ontario

Source: Derived from Ontario Economic Accounts by Millier Dickinson Blais, 2010

- Until recently, GDP for Ontario's transportation, logistics and warehousing sector has been steadily increasing since 2003, and remained well above the GDP in 2000 despite a sharp decline between 2008 and 2009. This is in contrast to the Goods Producing sector GDP which declined to well below the GDP in 2000 by 2009

- Unlike other industry sectors, employment from January 2006 to 2010 in Ontario's transportation, logistics and warehousing increased from 237,700 to 248,200 or by 4.4%. More recently, the sector posted a 1.4% increase in employment from January 2009 to January 2010, after a relatively stable year in employment gains and losses

- Road congestion in Ontario is worsening which has a significant impact of the transportation accessibility of the GTA

- Industries with just-in-time and make-to-order still need local inventories, such as automotive parts and electronic components which are relevant to Ontario's key industries. The transportation and logistics infrastructure that supports them will be critical as they grow

- The North-South import/export flow dominates off-shore, east-west import/export flows so cross-border infrastructure, especially roads, remains and important component for Southern Ontario transportation and warehousing

In response to growing congestion along many of the highways in Sothern Ontario, several major provincial-level initiatives need to be considered as they relate to transportation, logistics, warehousing, and distribution. Major initiatives include the Metrolinx *BigMove* Regional Transportation Plan, GO Transit's *GO 2020* strategic plan, and the GTA West Corridor Study, among others. The former two initiatives, working together, form the Provincial vision for expanding inter-regional passenger transit across the Greater Golden Horseshoe.

While transit improvements remain a major priority, highway improvements are recognized as a significant way to ease congestion along several corridors. The GTA West Corridor Study is being undertaken to improve existing highway infrastructure and construct a new transportation corridor to address future transportation demand. While the corridor study primarily supports a transit-first approach, with improvements first being made under the transit plans noted above, two alternatives have presently been developed for the potential highway corridor through the ongoing environmental assessment. Though exact routing is still under debate and study, both alternatives propose a widening of existing highways in the area, as well as a new transportation corridor from Highway 400 (through Vaughan and likely connecting with the extended Highway 427) to Highway 401 either east or west of Milton. The resulting 400-series highway is assumed to alleviate some congestion, and offer commuters and shippers alternatives to the existing routes.

1.3.3 Local Trends and Context

Transportation, logistics and warehousing accounted for 7,280 jobs in Vaughan in 2006, representing an increase of 21% from 2001. This contrasts the 6% growth of the sector at the provincial level over the same time period. The York Region Employment Survey indicated that the number of jobs in the sector increased by 41% from 2006 to 2009. In terms of concentration or local specialization, the number of jobs in the sector was high relative to the province in 2006. All of these factors suggest that transportation, logistics and warehousing is a growth sector for Vaughan, and considering some of the other assets in the community, could end up being a major specialization for the economy.

- Based on statistics Canada data, the largest industries by employment in Vaughan in 2006 were general freight trucking, couriers, freight transportation arrangement, rail transportation, warehousing and storage, and support activities for road transportation

- Relative to Ontario in 2006, the highest labour concentrations in the sector were in rail transportation and support for rail transportation, support activities for road transportation, couriers, freight transportation arrangement, warehousing and storage, and general freight trucking

- In terms of a more macro trend affecting the local and regional area, the Greater Toronto and Hamilton Area is becoming increasingly important as a goods movement and transportation hub, based on infrastructure available, but also the industries that exist there

Based on industry strengths in manufacturing, construction, and building products, Vaughan has an immediate market need for efficient movement of local goods. In addition, its situation among the GTA places it in an envious position over a number of other communities that exhibit similar strengths. A number of advantages have been identified for Vaughan relative to transportation, logistics and warehousing:

- Excellent access to existing highways with planned expansions to highway 427
- Access to the Canadian Pacific Intermodal yard and the Canadian National Marshalling yard
- Proximity to Pearson (and Hamilton from Cargo perspective)
- Large contiguous parcels of land that can accommodate major operations

Proximity to highways is critical for transportation and warehousing operations. Stem time, or the amount of time a vehicle is moving but not making money, is a major factor in site location, demonstrating the tendency of these operations to locate as close to customers and major highways as possible. However, congestion across the GTA, York Region, and the Highway corridors (401, 400) may limit the expansion of the sector, significantly affecting stem time, if supporting initiatives are not undertaken. The ESS notes specifically that the Concord area of Vaughan requires transportation improvements, but planned transit improvements will play a key role in alleviating congestion. The new Official Plan supports this.

As well, it has been suggested that the availability of rail will have less of an impact on advanced operations. While that may be true for some operations, the support of intermodal rail is very important to traditional manufacturing operations, which Vaughan has expertise in.

As noted previously, trends in transportation and logistics are resulting in larger and more automated buildings, often combining storage and warehousing with offices, assembly, and manufacturing.[14] These modern facilities demand 30-to-40 foot ceiling clearances, high-quality lighting, more docking bays and larger truck parking facilities resulting in the need for large parcels of land. To balance the land demand and produce adequate employment densities, it makes sense to encourage these complementary uses to consolidate with the core operation.

Vaughan has notable strengths in the transportation and warehousing sector in several subsectors. These should be considered the assets on which Vaughan can build. Both retention and expansion should be the focus within the sector; retention to continue to support the diverse range of manufacturing, construction, and building products industries that are here and attraction to ensure that the city has the necessary value chain to support expansion of those processes. Based on census data, existing and emerging strengths in the sector include:

- Support activities for rail transportation
- Support activities for road transportation

[14] Vaughan Employment Sectors Strategy, Hemson Consulting, 2010

- Other support activities for transportation[15]
- Couriers
- Freight transportation arrangement
- Warehousing and storage
- Support activities for air transportation (emerging strength)

1.3.4 Considerations for Vaughan

Vaughan is in the position to become a leader in developing transportation and trade relationships with the Pacific Rim. Trade with developing nations is increasing. The transportation sector will continue to expand to meet this trade demand. Studies indicate American port capacity is lagging demand opening opportunities for Canada to capture transportation market share. Relationships with other municipalities in the logistics chain such as Delta Port in BC and ports in the Asian nations are required to position Vaughan as a leader in global transportation and logistics.

Global goods movement needs to be time sensitive and efficient placing emphasis on building design and location resulting in larger and more automated buildings combining assembly, warehousing, and offices. Vaughan needs to work with the developers industry and ICA community to construct adaptable buildings that follow green standards and design guidelines.

[15] Services like freight packing and crating, crating goods for shipping

1.4 Corporate Headquarters

The attraction of headquarters to the City of Vaughan has been identified as a key strategic priority in both the City's Official Plan, and recently completed Employment Sectors Strategy.

The following reviews trends in headquarters activity in recent years, and identifies the strategic drivers of headquarters location choices as they pertain to Vaughan's economic development strategy.

1.4.1 Global Trends and Context

Corporate headquarters and regional head offices are a broad category encompassing a wide range of activities and industries. Though it is difficult to generalize about industry-specific drivers of headquarter locations, there are nevertheless some important trends that affect why head offices, as a sub-category of business establishments, tend to locate in specific places.

Internationally, and in North America specifically, headquarters remain largely concentrated in a small number of major metropolitan areas, in order to benefit from the density of services and resources available in cities. Cities like New York, Chicago and San Francisco dominate headquarters activity in the U.S. to a disproportionate degree. The 'agglomeration economies' present in these cities reduce the costs of accessing important information and business services, both crucial to the efficient operation of higher-order head quarter activity. The specific attributes of major cities that drive high head office concentrations are:

- ***Access:*** Because they often administer operations in a wide range of locations, access to air transportation and a high quality communications infrastructure are both critical to head office location. The quality of regional access is also important, as it affects the movement and people and goods in and out of the office location.

- ***Talent:*** One of the most important drivers for corporate headquarters is a "diversified and educated pool of labour"[16] that can enable a company to access new knowledge and markets. As the work of Richard Florida and others has shown, these workers tend to concentrate in larger urban centres.

- ***Amenities:*** The quality of public services, arts and entertainment venues, and outdoor activities need to 'show well' for potential destination sites for headquarters. Because head offices draw workers from other company sites and geographies, the presence of high quality health care and education facilities is also crucial.

- ***Services*****:** Headquarters drive a high level of demand for professional and business services, including legal, financial, accounting and advertising/media. Cities provide the greatest density, choice, and cost-competitiveness of these types of activities.

These driving trends are constant, having affected location decisions for decades. However, the impacts of the recession and its effects on business activity throughout developed economies have introduced new realities for headquarters. Most notably, cost containment has become a primary concern. Many international businesses are reducing the number of regional offices they operate and consolidating activities in fewer sites.

These effects have accompanied a slow decentralization of headquarters activity away from city centres towards city suburbs and mid-tier municipalities. Regional centres, like Vaughan, that exist within a larger metropolitan hub have shown growth in head office activity in recent years. This is due to a combination of high-level economic trends and increased local competitiveness on a number of factors, including:

- Retained access to business services in the larger metropolitan area;
- Increased access to, and reduced costs of, information and communications technology – and therefore, a reduced dependence on transportation and centralized locations to conduct head office control functions;
- Avoidance of the diseconomies of scale associated with major cities (e.g. crime and congestion); and
- Lower costs associated with land and office space, labour and business services outside of the urban core.

Overall, these trends point to a significant opportunity for Vaughan to increase its concentration of head office activity, both through the development and cultivation of home-grown businesses, and the attraction of new companies.

1.4.2 National/Provincial Trends and Context

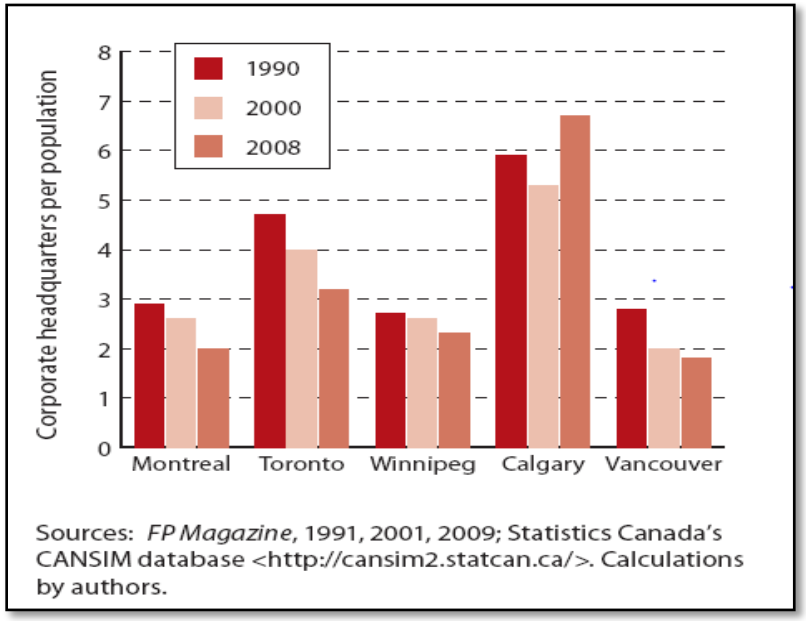
> *"Comparative costs are the white-hot issue in corporate board rooms. Costs are the driving force, (which) speaks to the importance of world trade. In today's environment, companies have to be as cost efficient as possible".*
>
> -Site Selection Magazine
> January 2010

Trends in Ontario and Canada largely mirror what is true of headquarter activity throughout North America and the rest of the world; high concentrations in the largest metro areas, driven by specific sector concentrations, with a slight trend towards diversification and decentralization in recent years. As such, Toronto has long been, and remains, the centre of headquarters activity in Canada, with particular strengths in mining, manufacturing

[16] Regional Headquarters. Site Selection Magazine, January 2010. http://www.siteselection.com/features/2010/jan/Regional-Headquarters/

and finance, insurance and real estate industries[17].

Figure 10 Canadian corporate headquarters per 100,000 Population, 1990, 2000 and 2008



One particular factor that does much to explain the shifts and concentrations of headquarters activities is the success and growth of stellar "indigenous" companies and industry clusters in a given region[18]. That is, the general shifts in industrial activity in the broader economy can significantly impact the emergence of new centres of headquarters activity, and generate significant spillover growth in regional offices as well.

This trend has had a pronounced effect on the location of Canadian headquarters in recent years. Toronto continues to dominate among Canadian cities in terms of absolute number of headquarters, with 176 of the top 500 headquarters in Canada (35.2%). Yet Calgary has emerged as the second largest centre of headquarter activity in the country, driven largely by the boom in the energy sector. When measured in terms of headquarter density, Calgary is far and away the national leader, with 6.7 locations per 100,000 Population, versus Toronto's 3.2[19].

1.4.3 Local Trends and Context

All told, the trends affecting the location decisions of corporate headquarters and regional head offices are beneficial for Vaughan's future growth in this area. In relation to the above trends, Vaughan is strategically positioned to develop increased head office concentrations for the following reasons:

- **Access and Transportation Infrastructure:** Vaughan is in close proximity to Lester B. Pearson International Airport and Highway 404, with Highways 407 and 427 in the City, and the Spadina-York subway extension planned to meet the city in the Vaughan Metropolitan Centre area.
- **Current Strength and Diversity:** There are already 107 companies with head offices in Vaughan, concentrated in manufacturing (32.7%), wholesale trade (20.6%), retail trade and food service (7.5% each). These offices employ 11,700 people. This indicates a strong local capacity to support a broad range of head office activities.
- **Regional Resources and Services:** The Toronto CMA boasts the highest density and quality of professional services firms in the country, and is the 3rd largest financial

[17] Meyer, S. 1996. Canadian Multinational Headquarters: The Importance of Toronto's Inner City.
[18] Klier, T. And Testa, W. 2002. Location trends of large company headquarters during the 1990s.

[19] Gainer, A. and Esmail, N. Corporate headquarters in Canada. Fraser Institute: Fraser Forum, 10/09.

centre in North America[20]. Vaughan can leverage these regional assets while competing locally on the basis of its mid-tier status, as described above.

Vaughan also currently possesses, or is in the process of developing, extensive infrastructure and land suited to head office development in a range of sizes and industries. First of all, existing local and provincial policy and planning frameworks are specific about the need to target and attract major office development to Vaughan, in a wide range of industry sectors. The Growth Plan for the Greater Golden Horseshoe specifies that municipalities are encourage to direct major office development to major transit stations and intensification corridors (Section 2.2.5) and away from designated Employment Areas (Section 2.2.6.4)[21].

Those Employment Areas, traditional sites of office activity, exhibit a pattern of locating prestige industrial land at or near provincial and regional highways; in York Region, this is evident from concentration of office activity at along Highway 404 and 407 in Richmond Hill, Markham and Aurora. In Vaughan's case, Employment Areas exist in West Vaughan (Vaughan Enterprise Zone) and Highway 400 North. These lands will continue to be important for prestige business park development and the housing of smaller, lower-cost head office activity.

However, with the development of the Vaughan Metropolitan Centre and the Intensification Centre targets in place for the city, it has been explicitly recognized within the City's Employment Sector Strategy and Official Plan that major office developments and headquarters should be driven to these areas wherever possible (see Figure 2). Doing so will help to drive the development of the target intensification areas for the City and spur additional private sector and institutional investment in the development of the Vaughan Metropolitan Centre.

Figure 11: City of Vaughan Official Plan, Attracting Office Uses

Vaughan Metropolitan Centre	Major offices uses greater than 12,500 m² per lot will be located in the Vaughan Metropolitan Centre and at future subway stations.
Intensification Areas and subways	Office uses up 12,500 m² per lot will be permitted in appropriate Intensification Areas and at subway stations.
Employment Areas	Office uses up to 7,500 m² per lot will be permitted in Prestige Employment designations. Ancillary offices, directly associated with another employment use, will be permitted throughout Employment Areas.

[20] *www.toronto.ca/business/pdf/financial_services_fact-sheet.pdf*
[21] Hemson Consulting (2009). Town of Richmond Hill, Economic Policy Review, Stage 1 Background Research and Policy Report.

1.4.4 Considerations for Vaughan

Headquarters concentrate in major metropolitan areas because of access to transportation and communications infrastructure; diversified and educated labour pool; lifestyle amenities and business and professional services. The GTA, as the largest centre of offices in Canada, is evidence to the validity of this statement. In addition, to save costs firms are consolidating offices, often in regional centres in metro areas. As Vaughan is a regional centre in a large metropolitan region, it follows that they city is well positioned to attract head quarter operations.

To reinforce the need for flexibly zoned areas and for the city to collaborate in creating flexible space, headquarters are increasingly co-locating in integrated facilities requiring municipalities to be flexible in urban design principles. In addition, Vaughan needs to be concerned with quality of place features to be attractive to the employees who work at corporate headquarters. The Vaughan Metropolitan Centre, as the focal point of cultural activities and public transportation networks will be the ideal location for headquarters relocating to Vaughan. However, the City needs to ensure these quality of place features are established to facilitate headquarter attraction. Vaughan should consider design and architectural competitions in the development of the VMC.

1.5 Building Products Sector

The building products cluster is a sub-sector of the manufacturing sector. The cluster primarily includes architectural and structural metals manufacturing, household and institutional furniture (kitchen cabinets) manufacturing, wood product manufacturing, and non-metallic mineral products (clay, glass, cement, lime and gypsum) most of which were identified as strengths in the city's manufacturing sector. The cluster is supported by a large and concentrated workforce in the construction trades spanning residential and non-residential construction, with specific strengths in land subdivision[22] and building finishing.

Green building has become a growing part of the construction and building products industry. Despite the recent economic slowdown, it remains important for builders to capture the opportunity created by the demand for more sustainable buildings. The term 'Green' or 'sustainable' building involves the use of building practices and materials that use resources as efficiently as possible, while constructing healthier, more energy-efficient and environmentally friendly buildings.[23] The benefits of green buildings are:

- Reduced operating costs through energy efficiencies
- Reduced maintenance costs through further energy cost savings and
- Increased building value through annual energy savings that are higher than comparable properties.

Given the shift towards more sustainable construction principles and building materials, an opportunity exists for Vaughan's building products cluster to lead in the development and use of green building standards and products.

[22] Includes services performed before building activity, such as land clearing and excavating or installation of roads and utilities.
[23] The U.S. Market for `Green` Building Materials, BCC Research, September 1, 2006,

1.5.1 Global Trends and Context

In the United States, the five main drivers of green building growth are:

- Growing evidence for the business case benefits of green buildings
- More commercial and institutional green projects
- The U.S. *Energy Policy Act* of 2005, which provides tax credits for commercial green buildings
- New local government, utility and state government tax incentives for green buildings and renewable energy and
- Higher oil and natural gas prices.

It was estimated that the U.S. green building materials market was valued at $21.1 billion (1.4% of the manufacturing industry's Gross Domestic Product (GDP)) in 2005 and expected to grow to $27.9 billion by 2011, an average annual growth rate (AAGR) of 4.9%[24]. The construction industry would be the primary consumer market purchasing these manufactured building materials.

Structural building materials accounted for nearly three-quarters of the U.S. green building materials market in 2005, followed by interior materials (13.8%), exterior materials (11.2%) and plumbing, wiring and fixtures (0.1%).[25] Exterior building materials are growing at a faster rate than any other product segment, and are expected to increase their market share to 15.7% by 2011.[26]

Oriented strand board is by far the most versatile and popular green building component, at present. Other top-selling green building materials include i-joists (engineered wood products), glue laminated timber and fibre cement.[27] In a building products context, many of the processes used to create these materials are the same as those of traditional materials, providing opportunities to utilize existing facilities and skill sets in material construction.

In 2008, the construction industry which includes commercial, residential, industrial and infrastructure construction comprised 4.1% ($581.5 billion) of the $14.3 trillion U.S. GDP.[28] The U.S. Green Building Council (USGBC) projected that the value of green building construction will increase to $60 billion by 2010. The green market of non-residential construction was 2% in 2005 and projected to increase to 10-12% in 2008. The green market will grow to 20-25% by 2013. All of this indicates that building products, and more specifically green building products are a growth industry.

Worldwide, there are several leading Green Building Design Standards that are significantly influencing the construction, and material development industries:

- The US Green Building Council unveiled in 2000 the Leadership in Energy and Environmental Design (LEED) Green Building Rating System, the first rating system of its kind to scrutinize building projects to a range of environmental criteria, such as energy use, water use, municipal infrastructure, transportation energy use, resource conservation, land use and indoor environmental quality.

- Building Research Establishment Environmental Assessment Method (BREEAM) in the United Kingdom

- Comprehensive Assessment System for Built Environment Efficiency (CASBEE) system in Japan

[24] Ibid.
[25] Ibid.
[26] Ibid.
[27] Ibid.

[28] U.S. Bureau of Economic Analysis, Gross Domestic Product by Industry Accounts, http://www.bea.gov/industry/gpotables/gpo_action.cfm?anon=504871&table_id=24752&format_type=0, last updated on April 29th, 2010, viewed on April 29th, 2010.

- Both India (IGBC) and Canada (CaGBC) have licensed the USGBC`s LEED rating system.

China and India are major markets for construction and building components worldwide. From 2008 to 2009, those two countries were among the only ones across the globe to see an increase in construction spending from the previous year; 8% and 9% respectively[29].

As such, both are the two biggest markets for the green building industry as well, based somewhat on explosive growth and urbanization. Given the rapid growth of energy use in China and the difficulty of growing electricity supply fast enough to meet demand, the government is focusing on building energy efficiency. Office developers in Shanghai and Hong Kong have begun to certify Chinese projects against the U.S. LEED Standard.[30] The first LEED Platinum building in the world was certified in India, and the country continues to be a leader in the application of green building principles.

- In 2005 there were 4 million square feet of green buildings, but the Indian Green Building Council's goal is to have 100 green buildings constructed per year by the 2010 to 2012 period.

1.5.2 National/Provincial Trends and Context

The Canadian rating systems are an adaptation of the USGBC LEED Green Building Rating System. The Canadian system is tailored for Canadian climates, construction practices and regulations.

- Private sector organizations and governments are adopting LEED certification in their policies, programming and operations. The high rate of adoption may be because of its flexibility to accommodate a wide range of building uses. Four levels of certification include certified, silver, gold and platinum.

- Because of Canada's proximity to the United States and the strong cross border trade in architectural and engineering services, Canada is far along in developing a domestic green building industry.[31] In fact, the adoption of LEED green building standards is close to the level of U.S. activity.

- In Canada, the green building materials market in 2005 is estimated at $2.6 billion in 2005 and at AAGR of 4.9% would grow to $3.5 billion by 2011.

- Canada's GDP in the construction industry was $66.7 billion in 2005, 5.8% of GDP. By 2009, the construction industry remained at 5.8% ($69.5 billion) of national GDP. Non-residential construction and engineering, repair and other construction activities represent approximately two-thirds of the industry's GDP and residential construction represents the remaining one-third of the industry's GDP.[32]

- Assuming a similar green market growth as the U.S., the Canadian non-residential green construction and engineering market grew from $866.6 million (2%) in 2005 to approximately $5.8 billion (12%) by 2009.

[29] Davis Langdon and Seah International, World Construction 2009
[30] Yudelson, Jerry. (2008). The Green Building Revolution. Published by Island Press, Washington, D.C., p. 72.

[31] Ibid. p. 69.
[32] Statistics Canada, Gross Domestic Product at Basic Prices, by Industry, Monthly, Quarterly and Annual – Construction, http://www.statcan.gc.ca/pub/15-001-x/2009012/t010-eng.htm, viewed on April 28th, 2010, last modified on March 1st, 2010.

Several Provincial policies have an effect on the building products sector. The *Places to Grow-Growth Plan for the Greater Golden Horseshoe* outlines the preferred option for the growth of Southern Ontario to 2031. Most notably, the policy outlines that intensification will be undertaken to accommodate growth in more compact forms, in urban growth centres (of which Vaughan has one) and intensification corridors. Though intensification can take a variety of forms, it signals a shift from the predominantly low-density development that is currently being undertaken to higher density developments.

In response to the Province's need to generate economic activity that preserves and enhances environmental quality while using natural resources more efficiently, the Province of Ontario enacted the *Green Energy Act* (GEA) in May, 2009. The GEA is intended to boost investment in renewable energy projects and increase conservation, creating green jobs and economic growth to Ontario. The legislation is part of Ontario's plan to become a leading green economy in North America. The green economy is the clean energy economy that consists of four sectors:

- Renewable energy (e.g. solar, wind geothermal)
- Green building and energy efficiency technology**;**
- Energy-efficient infrastructure and transportation; and
- Recycling and waste-to-energy.[33]

The green economy is about technologies that allow cleaner production processes and the growing market for products which consume less energy. It can also include products, processes and services that reduce environmental impact or improve natural resource use.[34]

As the GEA relates to green building and energy efficiency technology, this Act will create the potential for savings and better managed household energy expenditures through conservation measures. A culture of conservation would be achieved by making energy efficiency a key purpose of Ontario's building code.[35]

There are a wide range of new jobs that will be created through the GEA. These new, higher paying jobs include construction labourers, sheet metal workers, financial auditors, engineers, concrete-forming operators, accountants, building inspectors and research scientists.[36]

Measures can be taken to enhance the local content of Ontario green investment projects. First, a high proportion of the overall level of activity associated with green investments is location-specific. These activities can be performed only within Ontario. It was estimated that 65% of conservation and demand management jobs must occur on site. The overall level of job creation will diminish to the extent that such activities, relative to construction, represent a significant share of total investment spending. A second measure to enhance local content is to pursue the GEA program at the largest possible scale. Ontario firms will see greater opportunities to gear themselves up to becoming competitive. Finally, the Province can also offer incentives and subsidies to assist local businesses in establishing and maintaining a competitive position in supplying

[33] Gordon, Kate and Jeremy Hays, *Green-Collar Jobs in America's Cities: Building Pathways out of Poverty and Careers in the Clean Energy Economy* (Apollo Alliance and Green for All, 2008), http://www.apolloalliance.org/downtloads/greencollarjobs.pdf in *Defining the Green Economy: A Primer on Green Economic Development*, The Centre for Community Innovation, University of California-Berkeley, November 2008.

[34] Chapple, Karen, *Defining the Green Economy: A Primer on Green Economic Development*, The Centre for Community Innovation, University of California-Berkeley, November 2008

[35] Ontario's Green Energy Act: Our Path to a Green Economy and a Cleaner Environment, Ministry of Energy and Infrastructure, last modified November 24th, 2009. Viewed on January 25th, 2010.

[36] Ibid.

manufactured goods and import-competitive services for the green economy.[37]

As stated earlier, it was estimated that the U.S. green building materials market was valued at 1.4% of the manufacturing industry GDP in 2005 and expected to grow at an average annual growth rate (AAGR) of 4.9%[38]. The construction industry would be the primary market purchasing the manufactured green building materials. Assuming a similar industry trend in Ontario, the green building materials market in 2005 is estimated at $1.3 billion and at an AAGR of 4.9% would grow to $1.8 billion by 2011.

Ontario's GDP in the construction industry was $23.9 billion in 2005, 5.1% of the province's GDP. By 2009, the construction industry contracted to $22.2 billion (4.7%) of the province's GDP. In 2009, non-residential building and engineering represent a $13.2 billion industry and residential construction represents a $9.0 billion industry. [39] Assuming similar green market growth as the U.S., the Ontario non-residential green construction and engineering market grew from approximately $277.1 million (2%) in 2005 to approximately $1.6 billion (12%) by 2009.

1.5.3 Local Trends and Context

Vaughan's building technology and construction industries have an opportunity to emerge as leaders in green development in the Greater Golden Horseshoe (GGH). Vaughan has necessary industry assets in place to emerge as a leader. These assets include:

- Significant transportation infrastructure (highways, rail lines, international airport) built up through and around the City of Vaughan
- Green construction demonstration projects and training through the Kortright Centre
- Large residential and non-residential building developers and
- An active, engaged and influential building community shaping green building public policy through non-profit groups such as the Building Industry and Land Development Association.

The City recognizes, through Official Plan policy, the need for vibrant manufacturing and industrial sectors, with a focus on green industries and green construction, emerging technologies and advanced manufacturing. The City has policies in the Official Plan to:

- Support the growth and transformation of Vaughan's development/construction industry as a model for emerging green building technologies and sustainable practices (p.171)
- Support the growth and modernization of Vaughan's manufacturing industry and warehousing sectors by expanding Vaughan's leading role in the GGH construction and development industry (p.174).
- Attract, support and cultivate a wide range of value-added industries that:
    - provide services and products that promote environmentally responsible practices;
    - respond to the reality of climate change, future energy scarcity and other environmental imperatives; and
    - Reflect environmental and sustainability objectives in their operations. (p.174).
- Encourage green industries that make use of existing land, facilities and expertise and build on Vaughan's strong

[37] Ibid.
[38] The U.S. Market for `Green` Building Materials, BCC Research, September 1, 2006.
[39] Ontario Ministry of Finance and Statistics Canada, Office of Economic Policy, Ontario Economic Accounts, April 2010.

economic base, including building materials and technologies (p.175).

- Ensure the growth of green industries in Vaughan by:
  - supporting the continued implementation of green building and development standards by Vaughan's established land development, construction and building products sectors; and
  - Promoting and facilitating the export of Vaughan's expertise in building and development (p.175).

1.5.4 Themes and Potential Actions

In order to positions itself as the "LEEDer" in green and sustainable building practices, Vaughan needs to work with the development industry, building products manufacturers and researchers to establish cutting edge construction guidelines. With Vaughan as the incubator to the development and implementation of green building products and technology, firms located in Vaughan will be ideally suited to prosper in the future green economy.

But Vaughan and Ontario are only a small part of the global market as governments and firms around the world place increased emphasis on green policies and practices and environmental sustainability. This, coupled with rising energy costs is leading to a tremendous shift in the building products and construction sectors in the drive to reduce carbon emissions and waste. It is estimated the green share of the total non-residential building products market rose from 2% in 2005 to 10% of market in 2008.

In this global growth China and India are the largest markets for green construction and building products. Rapidly expanding industry and urbanisation along with strained electricity and energy infrastructure in these countries is contributing to the growth. These opportunities reinforce the need for Vaughan to build relationships with transportation and logistics firms, Canada's Asia Pacific Gateway Corridor initiative and municipalities that can act as market access points for goods

1.6 Cultural Industries

The cultural industries are in part beginning to shape the way the world does business today. Cultural industries primarily relate to creativity, culture, economics and technology. They create intellectual capital; and generate income, jobs and export earnings while at the same time promoting social inclusion, cultural diversity, and human development[40]. This collection of industries is commonly referred to as the 'creative industry' and has direct relation to what is referred to as the 'creative economy'.

Generally speaking, creative industries can include a wide range of business activities, from arts and cultural pursuits, to business and technology. As defined by the United Nations, the creative industries range from folk art festivals, music, books, paintings and performing arts to more technology-intensive subsectors such as the film and television industry, broadcasting, digital animation and video games, and more service-oriented fields such as architecture and advertising services. What is common to all of these industries is their incorporation of creative skills to generate income through trade and intellectual property rights. Countries today are beginning to realize the potential of these industries as economic drivers, and are beginning to integrate them into traditional economic development planning, concerned with building entrepreneurship, innovation, productivity, and overall promotion of economic growth[1].

An economy can only flourish when there is a high quality of talented people, sufficient quantities of workers with the right skill-sets, and efficient mechanisms for facilitating the flow of skilled workers into productive employment[41]. It is the cultural industries that greatly contribute to the quality of place that draws these talented workers and visitors to a community. They create the unique characteristics and experiences of a place that appeal to a wide variety of individuals, drawing people to an area, or keeping them there. This is in addition to their strength, in their own right, as economic drivers for an area through unique events (Toronto International Film Festival), unique venues and productions (Broadway theatres in New York), or world-renown cultural amenities (the Louvre in Paris). For Vaughan to become a leader in cultural industries, it must been seen as an attractive city for cultural workers, providing an experience that is unmatched by other communities.

As well, a new focus on cultural industries brings a new approach to planning for other sectors. Because cultural industries so significantly influence the quality of place in an area, the tourism sector in a community should be considered inherently linked to the cultural industries; perhaps even a sub-set of the industry. While the cultural industries provide many of the place qualities or amenities that make an area attractive for residents and visitors, a robust tourism industry that attracts a significant number of visitors can provide a steady stream of customers or patrons for the cultural industries. For a community like Vaughan with a number of cultural industry strengths, perhaps it makes sense to pursue this approach to tourism destination development; by concentrating on enhancing the place-building potential of the creative industries.

1.6.1 Global Trends and Context

According to the United Nations Conference on Trade and Development (UNCTAD) between the year 2000 and 2005, creative

[40] Source: UNCTAD. (2008). Summary: Creative Economy Report. Retrieved April 20, 2010 from http://www.unctad.org/Templates/Download.asp?docid=12314&lang=1&intItemID=4577

[41] The Conference Board of Canada (2008). Valuing Culture: Measuring and Understanding Canada's Creative Economy. Retrieved April 27, 2010 from *www.torc.on.ca/documents/08-152_CanadasCreativeEconomy.pdf*

goods and services trade increased at an unprecedented average annual rate of 8.7 percent.

- World exports of creative products were valued at $424.4 billion in 2005 as compared to $227.5 billion in 1996, or 86.5% growth over that time period
- Creative services (such as art tours, graphic design, etc) enjoyed a rapid export growth of 8.8 per cent annually between 1996 and 2005.

This positive trend occurred in all regions and groups of countries surveyed for the report, and the trend is expected to continue into the next decade assuming that the global demand for creative goods and services continues to rise.

Global recognition of the economic contributions of culture is also increasing. In September 2009, over 450 delegates from more than 70 countries attended the World Summit on Arts and Culture in Johannesburg, South Africa. This event, organized by the International Federation of Arts Councils and Culture Agencies (IFACCA) aimed to create meaning through the arts while reinforcing the value of international networks between leaders in arts and cultural policy making, funding, and networking.

1.6.2 National/Provincial Trends and Context

The diversity of the cultural industries sector across Canada and Ontario suggests that there is no 'one-size fits-all' approach to planning and development, but rather flexible and strategic choices that need to be made by Federal and Provincial governments in order to maximize the benefits of their creative economies for development[42].

The creative and cultural industries provide a significant financial gain to the Canadian, and more specifically, Ontario economy:

- In 2007, it is estimated that direct, indirect, and induced contributions of the arts and culture industries was $84.6 billion, making up 7.4 percent of Canada's gross domestic product (GDP)
- The creative industries sector accounted for over 1 million jobs and continues to grow as new opportunities emerge
- On average, every $1 of real value-added GDP produced by Canada's culture industries generates $1.84 to the overall real GDP

In a tourism context, a national trend to note is the increasingly large focus on 'prosumers'. This group is typically well-educated, demanding consumers who are often directly generating value from products and services and have strong preferences for interactive, customizable experiences. This trend has been accentuated by the increasing use and practicality of the internet, and more specifically Web 2.0 applications that allow them to create their own digital content and share it easily across the world. Users are also co-creating with others, and influencing commercial activity spending.

The Martin Prosperity Institute has developed an agenda for Ontario's Creative Age which consists of broadening the talent base, building a province-wide geographic advantage, establishing new

[42] Source: UNCTAD. (2008). Summary: Creative Economy Report. Retrieved April 20, 2010 from http://www.unctad.org/Templates/Download.asp?docid=12314&lang=1&intItemID=4577

social safety nets, and harnessing the creative potential of Ontarians. This agenda can be directly applied to the city of Vaughan in increasing its cultural and creative potential, as well as integrating the cultural strengths of the community into other areas of economic activity, such as tourism.

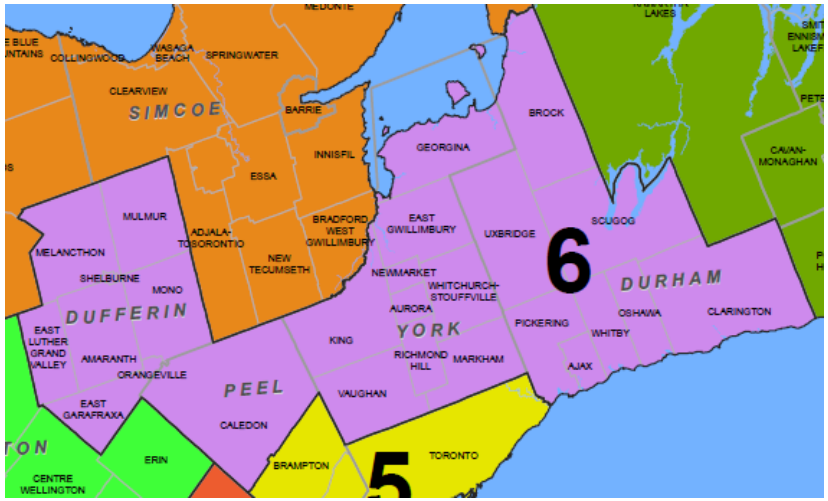
1.6.3 Local Trends and Context

Previous reports completed for the City of Vaughan have discussed the cultural industry. These reports point to several clear trends that have emerged. This section will expand upon trends already identified and discuss others that could be included in the overall economic strategy.

Post-secondary institutions make critical contributions to the education and training of 'creative' workers for the Ontario economy. Despite not having a post-secondary institution within the City's borders, the percentage of persons over age 15 with a university degree in Vaughan is 25%, which exceeds the provincial average of 20%. This has implications on the types of cultural pursuits that the residents in the city will desire, as well as indicating a strong creative capacity in the local population as well.

The tourism industry in Vaughan has recently been affected by changes in the structure of thirteen new tourism regions within the Province of Ontario. Until 2010, Vaughan had been part of Region 4-Metropolitan Toronto Region, which was much smaller geographically, but included over 3.5 million residents. New changes have meant that Vaughan, being situated in the York Region, is now a part of the new Region 6, which includes Dufferin County, Peel Region, York Region, and Durham Region. A larger geographic tourism boundary will mean more emphasis is placed on a coordinated approach to tourism marketing and partnerships. These new regions will each have a Regional Tourism Organization (RTO) which is expected to attract increased visitation, generate more economic activity and create more jobs across the province. Tourism initiatives that will be successful in Vaughan will need to take into consideration the larger regional tourism priorities in terms of marketing efforts and management.

Figure 12: Regional Tourism Region 6



Source: Ontario Ministry of Tourism, 2010.

The City has a unique cluster of support services which cater specifically to the wedding industry. Few communities can actually make this claim, and even fewer capitalize on it as a cultural industry strength. But hidden in theses support industries are a number of creative and cultural pursuits, such as: photography, jewellers, caterers, bakers, florists, and unique wedding or bridal-related retail which can be supported for both the growth of wedding-related investment, but also the cultural industry sector as a whole. Employment growth between 2001 and 2006 in the City showed strength in a number of these areas and suggests a positive growth outlook in:

- Special food services (food services contractors, caterers, and mobile food services – as well as some banquet halls)

- Independent artists, writers and performers (including Disc Jockeys and entertainers)

Quite often the one thing people know about Vaughan is the fact that it is the home of Canada's Wonderland. While the scale of attractions in Vaughan is significantly smaller than that of Disneyworld, similarities exist. Wedding packages organized in Disneyworld include flowers, wedding cakes, entertainment, limousine service, professional photography, and of course the theme park adventure, all of which contribute to the creativity of the area. These services are all available in Vaughan, and wedding tourism could be the niche that brings the collaboration of these services together.

Current trends also demonstrate a convergence of culture and tourism and justify the placement of tourism as a subsector of cultural industries. Cultural tourism relates to the set of experiences a visitor can have when they stay in a destination, and those experiences, as noted above, can be heavily shaped by the cultural industries. The cultural industries make up the infrastructure - the culture, the heritage, and the natural resources of the host community or country – that form the unique destination. As a culturally diverse community, there are opportunities to utilize the equally diverse cultural industries to create a unique destination.

As well, there are opportunities surrounding the use of more non-cultural industries, such as sports, to generate cultural and tourism-related spinoff investment and revenue.

The growing hotel base, and a large number of banquet halls and related services, the City is poised to position itself to capture this trend, and perhaps become the centre for “special” events like weddings, tradeshows, or conferences in the GTA. For example, the City recently investigated participation as a cultural centre for the 2015 Pan/Parapan American Games awarded to Toronto. Realization of this vision could boost the development of the cultural industries to meet the growing status of the City as a destination.

1.6.4 Considerations for Vaughan

Cultural industries relate to creativity, economics, and technology and they create intellectual capital, generate income and jobs, and promote social inclusion, cultural diversity, and human development. In further support of why municipalities are interested in this sector, on a global level cultural industries grew at an annual rate of 8.7% between 2000 and 2005.

If Vaughan is to be seen as a leader in cultural industries, the City must be flexible in making strategic choices in place building in attracting and developing cultural industries. Provincially, Ontario has an agenda to broaden the talent base, integrate communities, and strengthen social safety nets in order to harness the creative potential of Ontarians. It is the responsibility of Vaughan to work within this framework in realizing its own potential. As an incubator of culture, the city needs to develop not only live and work spaces for cultural workers but support an artists’ collective, a space where cultural workers can create and share their work with the broader community.

There are several assets from which to develop cultural industries, not the least of which is the new VMC. Vaughan can with developers, artists, and not-for-profits to incorporate aspects of local culture into building design and to host and sponsor local cultural events such as theatre and music festivals and artist exhibitions. Venues for these cultural events need to be incorporated in the design of the VMC.

1.7 Educational Services, Healthcare & Social Assistance

Though these population-related service sectors are not necessarily economic development generators in the traditional sense like manufacturing, they are no less important for economic development. Educational services provide local training opportunities, while health care and social assistance uses ensure that a city's population has access to services that maintain a high level of well-being. These uses are paramount to creating a complete community, where the daily needs of the population can be met within the same city in which they reside. As such, a strong education, health care and social assistance sector enhances the quality of place of a community, making it a strong destination for new residents and workers.

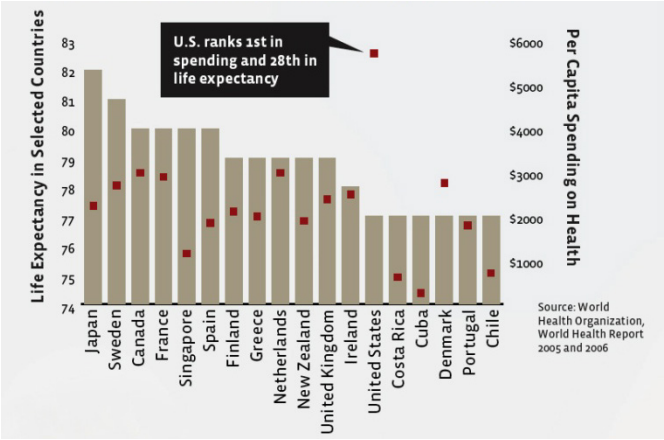
The City of Vaughan projects in their Growth Plan that by 2031 the population will be 418,000. To accommodate this growth it will be essential for residents to have access to these core services.

1.7.1 Global Trends and Context

In developed nations, the majority of trends in health care are centred on offering better patient care, and reducing the cost of quality healthcare:

- The healthcare information technology market is estimated be a $53.8 billion industry by 2014. The market is expected to grow because of the tremendous demand for general applications which include electronic medical records, electronic health records, computerized physician order entry system and non-clinical systems
- Changing government regulations and government initiatives are projected to bring down healthcare costs in many developed nations
- Development of picture archive and communication systems (PACS) has been essential in delivering better patient care[43]

Figure 13: Global Life Expectancy vs. Per Capita on Health Spending

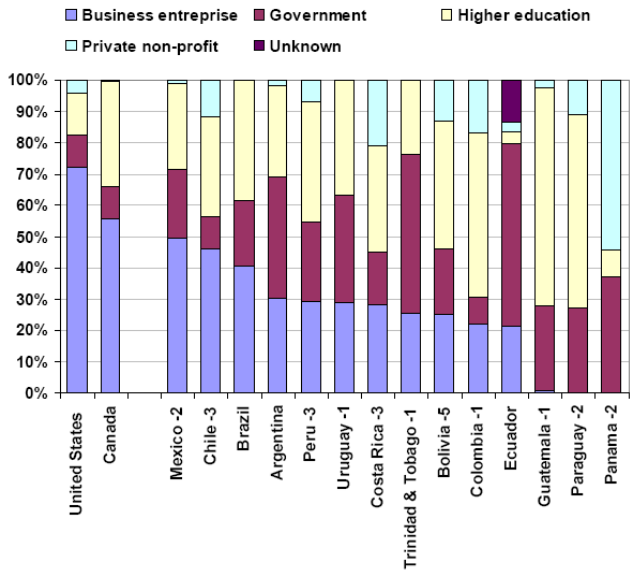


Over the past few decades, higher education has become increasingly available around the world thanks to improvements in technology. Making higher education an accessible to people of all backgrounds on an equal basis is an issue that governments and stakeholders throughout the world are faced with. The United States, Canada, and Australia are not far behind Europe in looking at educational affordability, as costs are offset by higher student aid and higher national incomes.

Education plays a major role in the global marketplace. The amount of research being done in a country generally links directly to innovations in technology, healthcare, and social development.

[43] Global Healthcare Information Technology (2009 - 2014), Marketsandmarkets.com. http://marketsandmarkets.wordpress.com/2009/09/29/global-healthcare-information-technology-2009-2014/

Figure 14: Research and Development Investment in the Americas



The figure above displays R&D investments by key sectors: business, government, higher education institutions and private non-profit organizations. In North America, the business sector funded and performed more than 60% of all R&D activities.

1.7.2 National/Provincial Trend and Context

The need to improve the transition for new immigrants into the workforce is a major trend today. Canada's point system is designed to attract high-skilled and well-educated immigrants by allocating the largest share of points to education credentials and knowledge of official languages. Although immigrants in Canada are well-educated, their labour force outcomes are worse than their Canadian-born counterparts. This underemployment is due to the mismatch between occupation and education with foreign credentials recognized. Policies that would assist to recognize foreign credentials would decrease the income gap between the Canadian-born and immigrants[44].

Social programs in Canada are designed to give assistance to citizens outside of what the market provides. Canadians receive social assistance in a number of ways, many of which are run by provincial organizations. These include Medicare, public education and financial assistance. In Ontario, social assistance programs help residents who are in financial need. The programs are offered through Ontario Works, and the Ontario Disability Support Program and they provide[45]:

- money to help cover the cost of basic needs for adults, such as food
- money to help cover housing costs for adults and their families, and
- employment assistance to help individuals prepare for, find and keep a job

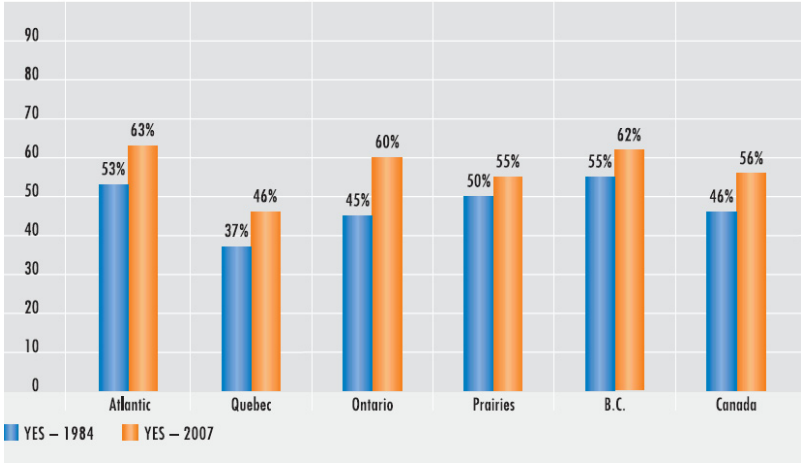
Canada remains the only federated nation within the membership of the Organization for Economic Co-operation and Development (OECD) that has no means for direct federal involvement in the direction of elementary and secondary education.

In Canada, taxes are increasing to provide higher quality learning. Compared to 1984, Canadians in 2007 were more willing to pay higher taxes if it meant better education will be provided to their children. In 2007 in Ontario, 60% of residents felt this was important.

[44] Martin Prosperity Institute. (2009). Geography of immigration in Canada. Retrieved from http://www.martinprosperity.org/media/pdfs/Geography-of-Immigration-in-Canada-KKing.pdf

[45] Ontario Ministry of Community and Social Services. (2010). Retrieved from http://www.mcss.gov.on.ca

Figure 15: Willingness to Pay Increased taxes for Educational Improvements (%Yes), 1984-2007 Comparison



Source: Canadian Education Association (2007). Public attitudes towards education in Canada. Retrieved from http://www.ceaace.ca/res.cfm?subsection=rep&page=publiced

Another Canadian trend is the growing need for apprenticeship training. Smaller communities are finding it difficult to supply apprenticeship opportunities, and apprentices are finding it increasingly difficult to find a placement for their program. However, as is shown below, overall the desire to register for an apprenticeship program has been steadily increasing since 1991, and particularly in the fields of Food and Service Trades, and Metal Fabricating Trades[46].

Figure 16: Demand for Apprentices by Occupation

	Building Construction trades	Electrical, Electrical and Related	Food and Service trades	Industrial and Related Mechanical	Metal Fabricating trades	Motor Vehicle and Heavy Equipment	Other	Total
1991	46,925	37,038	11,495	15,970	39,532	39,248	2,738	192,946
1992	43,703	34,401	11,055	15,051	36,626	37,457	2,670	180,963
1993	40,996	31,423	11,954	13,376	33,600	34,910	2,724	168,983
1994	36,679	30,195	13,868	13,235	32,874	34,213	2,688	163,752
1995	34,786	29,213	15,259	13,551	33,309	34,392	2,862	163,372
1996	33,394	28,272	16,884	14,234	33,840	35,582	3,118	165,324
1997	32,957	28,205	18,037	14,668	35,876	37,949	3,489	171,181
1998	33,395	28,840	18,173	14,904	38,055	38,597	3,998	175,962
1999	36,496	30,477	18,909	16,021	40,388	39,867	4,228	186,386
2000	39,090	32,555	20,119	16,557	44,103	41,974	4,675	199,073
2001	42,109	36,433	22,155	17,723	47,426	43,942	5,458	215,246
2002	47,545	39,645	23,345	18,592	49,906	46,156	6,224	231,413
2003	53,606	42,400	25,174	19,573	52,507	49,657	6,920	249,837

ource: Statistics Canada, Registered Apprenticeship Information System

In Ontario, a lack of human capital is said to have a negative effect on to the prosperity of the province in the long run. According to the Martin Prosperity Institute[47], Ontario is underperforming in education and occupation fronts, and, as one of the critical components for economic development this deficiency must be corrected.[48]

1.7.3 Local Trends and Context

In Vaughan several trends are affecting the region. These include: a need for a local hospital, more local training opportunities, and more social programming.

[46] Statistics Canada (2007). Registered Apprenticeship Information System. Retrieved from http://www.statcan.gc.ca

[47] Martin Prosperity Institute. (2009). Geography of immigration in Canada. Retrieved from http://www.martinprosperity.org/media/pdfs/Geography-of-Immigration-in-Canada-KKing.pdf

[48] Martin Prosperity Institute. (2009). *Ontario competes: performance overview using the 3T's of economic development.* Retrieved from http://www.martinprosperity.org.

Despite its size and growth potential, the City of Vaughan does not have a major health care facility located within its boundaries. Vaughan's residents and businesses rely on health care facilities located in adjacent municipalities but with the City's rapid growth and the anticipated growth in the adjacent areas of the GTA, it will be important to ensure that the people of Vaughan will continue to have convenient access to the medical facilities necessary to sustain a healthy, competitive and vibrant community. In 2007 it was announced by the Ministry of Health and Long-Term Care that the provincial government had given its permission to proceed to the planning stage for a new hospital for the City of Vaughan. This hospital will provide the necessary services to accommodate increased population growth.

Consultation with key stakeholders has revealed that there is a local need for more training opportunities. Presently, residents of Vaughan have either commute or temporarily relocate to attend a post-secondary institution. A number of options are accessible with a short distance, however the City of Vaughan does not presently have a post-secondary institution located within its borders.

Stakeholders have also indicated that more apprenticeship programs are needed, as the building and manufacturing sectors grow. Many workers within the field must either relocate or travel outside of the City to access training programs, especially in specialized occupations and trades. An opportunity may exist for the city to target post-secondary institutions that specialize in health related fields to accommodate the growth of the region when the new hospital is built, as well as target institutions that deliver programs relevant to the industrial sectors in the City.

With increasing demand for high-skilled and well-educated individuals in Canada, immigrants are a highly sought after group. Several community representatives noted that Vaughan has an increasing rate of immigrants who find it difficult to enter the workforce. Small business and entrepreneurial support, placebuilding, and community development, should be a key focus to integrate both these new workers, but also their families.

1.7.4 Considerations for Vaughan

A strong education, healthcare, and social assistance sector enhances the quality of place of a community, facilitating the attraction of new residents and workers. While Canada is performing well in the attraction of highly skilled and educated immigrants, these same new Canadians are often underemployed with an mismatch between education and skill level with their occupations in Canada. While some initiatives are the responsibility of the provincial and federal governments, municipalities can engage the community in development programs and policies to integrate new Canadians into appropriate jobs.

The education level of the local labour force plays an important role in the marketplace and levels of education link directly to innovations in technology, health care, and social development. Vaughan would be well served to attract a post secondary education institution to ensure a high level of skilled workers. Institutions near to Vaughan could be invited to develop on-site programming for firms located in Vaughan.

The construction of the new hospital in Vaughan creates opportunities to develop the health cluster in the city in addition to providing necessary services to accommodate population growth. Vaughan will need to work with partners to ensure the space is provided for health related industry and to seek those to occupy this space.