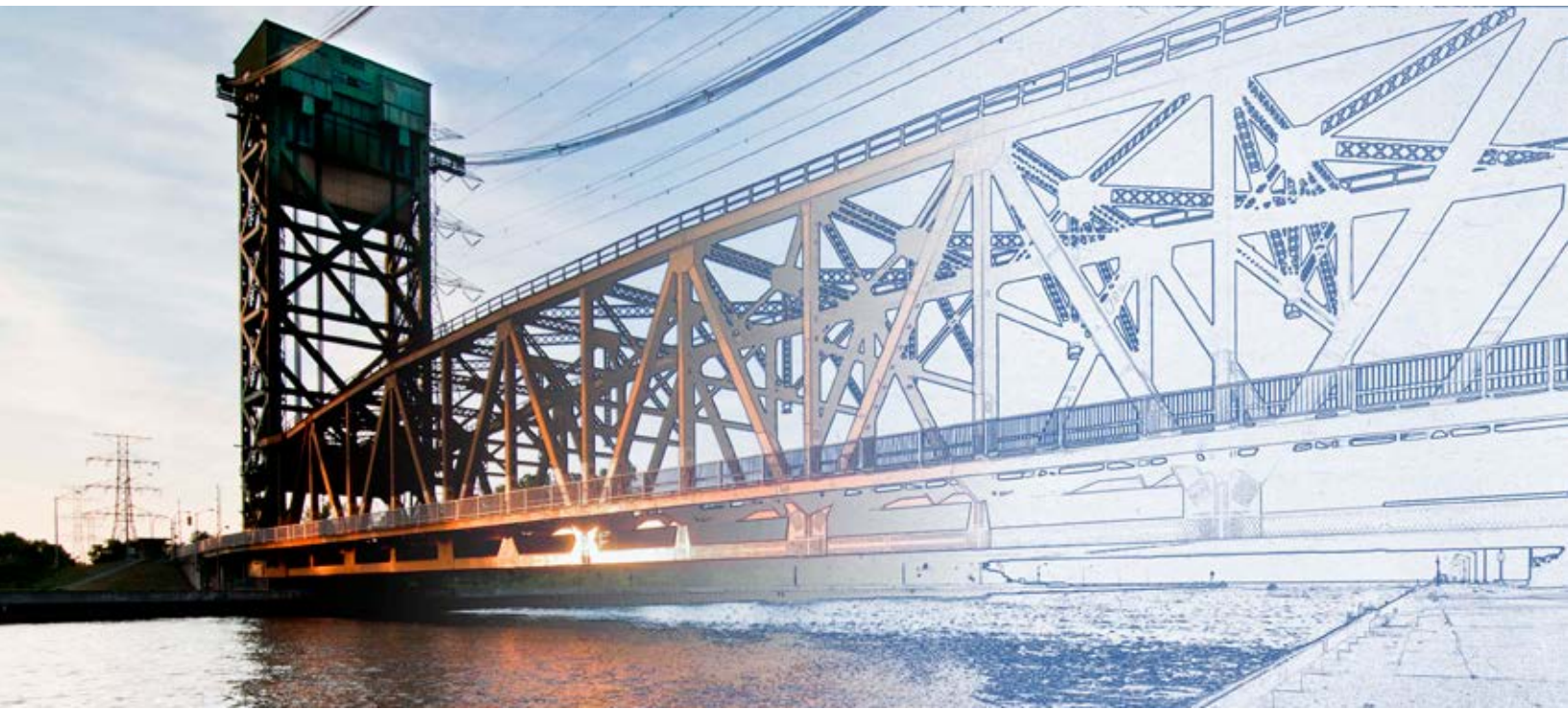


City of Hamilton

The current and future state of
Hamilton's advanced manufacturing sector



October 2013



Advanced manufacturing is best viewed as a cluster of economic activities encompassing much more than a manufacturing focused enterprise alone. Advanced manufacturing includes all facets of research, development, production, sales, distribution, logistics, customer service, marketing, and support, extending from the development of physical products to the delivery of services. This sector is a critical contributor to the Canadian economy, with significant impact, and ability to advance innovation, competitiveness and prosperity across the nation, regions and municipalities.

Situated at the western end of Ontario's Golden Horseshoe region, the City of Hamilton is centrally located in Canada and Ontario's manufacturing heartland. Historically, industrial manufacturing has represented the driving force of the City of Hamilton's local economy. In more recent periods, the City of Hamilton's manufacturing sector faced a number of challenges, such as significant global economic turbulence, and fluctuating costs of doing business. These challenges have tested the City's manufacturing sector, to respond, diversify and capitalize on new opportunities, resulting in some recent expansion in the auto and steel service sectors, indicating a positive shift in the sector. Increasing global competition, attracting, retaining and advancing talent, improving productivity and leading collaboration and innovation in order to remain competitive in a shifting global environment, are among numerous drivers of future opportunities and the need for adaptation and adjustment for Hamilton's advanced manufacturing sector.

The shifting global manufacturing landscape

The global manufacturing landscape will continue to impact the City of Hamilton’s advanced manufacturing sector. Over the last two decades, manufacturing has become steadily less reliant on labour and more technologically intensive, a trend which is anticipated to accelerate in the future. Advances in materials and systems designs will lead to entirely new products and processes, with a growing focus on flexibility and sustainability in the production process. Talent driven innovation will continue to be the top driver of global manufacturing competitiveness, which bodes well for the US, Canada and the City of Hamilton.

Canada is well positioned to leverage several recent shifts in the competitive environment, in particular rising labour costs in developing economies and rising supply chain costs and risks, which are anticipated to result in some “re-shoring” of manufacturing employment and investment back to North America.

Although the manufacturing sector faces a number of challenges, Canada is anticipated to remain one of the top manufacturing competitors in the world. Looking to the future, it is clear that Canadian manufacturers will need to adapt to a shifting global environment in order to remain competitive.

Although the manufacturing sector faces a number of challenges, Canada is anticipated to remain one of the top manufacturing competitors in the world.

2010, 2013 and 2018 country manufacturing competitiveness index rankings

Rank	Competitiveness 2010 Country	Competitiveness 2013 Country	Competitiveness 2018 (forecast) Country
1	China	China	China
2	India	Germany	India
3	South Korea	US	Brazil
4	US	India	Germany
5	Brazil	South Korea	US
6	Japan	Taiwan	South Korea
7	Mexico	Canada	Taiwan
8	Germany	Brazil	Canada
9	Singapore	Singapore	Singapore
10	Poland	Japan	Vietnam

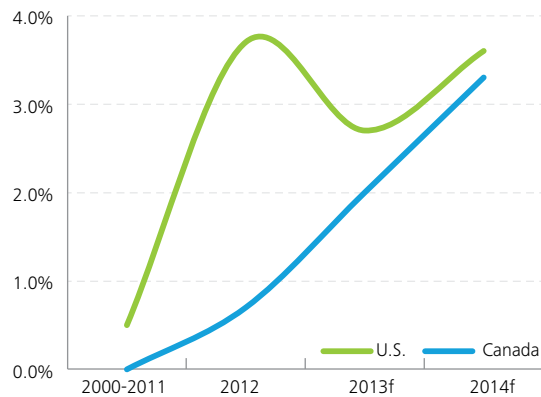
Source: Deloitte Touche Tohmatsu & US Council on Competitiveness Council, Global Manufacturing Competitiveness Index

Note: In the 2010 Global Manufacturing Competitiveness Index Canada ranked 13th

The productivity imperative

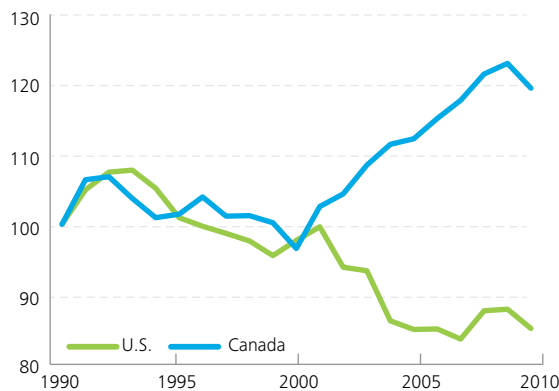
While industrial production growth between Canada and the US is anticipated to align, there is a substantial gap in manufacturing productivity between the two nations, which also presents a significant challenge for the City's advanced manufacturing sector. As shown in the chart below, Canada's gap in manufacturing productivity growth is more than 3.5 times the size of the productivity growth gap across the entire economy. This poses a concern as productivity relates to the average value produced per hour worked, and a growing gap is a threat to Canada's future standard of living.

Industrial production growth – Canada, US



Source: Scotiabank, Global Economic Research, 2013, Deloitte, The future of productivity – Clear choices for a competitive Canada

Manufacturing labour cost per unit of output, 1990-2010



Source: Scotiabank, Global Economic Research, 2013, Deloitte, The future of productivity – Clear choices for a competitive Canada

Hamilton's strategic position

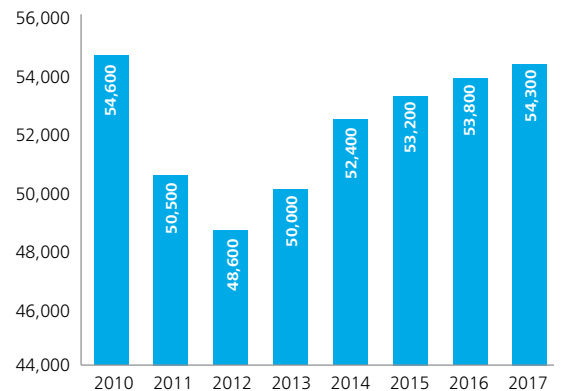
Within an advanced manufacturing context, the City of Hamilton possesses a number of market strengths, assets and capabilities. As shown in the chart below, amongst the City's major strengths are its location within a rapidly growing and competitive region, access to an expansive market and major trade corridors, an accelerating industrial market, and a positive manufacturing outlook. Key assets include a significant established manufacturing base, strong infrastructure assets, access to talent and strong education institutions, critical innovation networks, and the ability to leverage its position within a super-regional advanced manufacturing cluster.

Market access / trade corridors

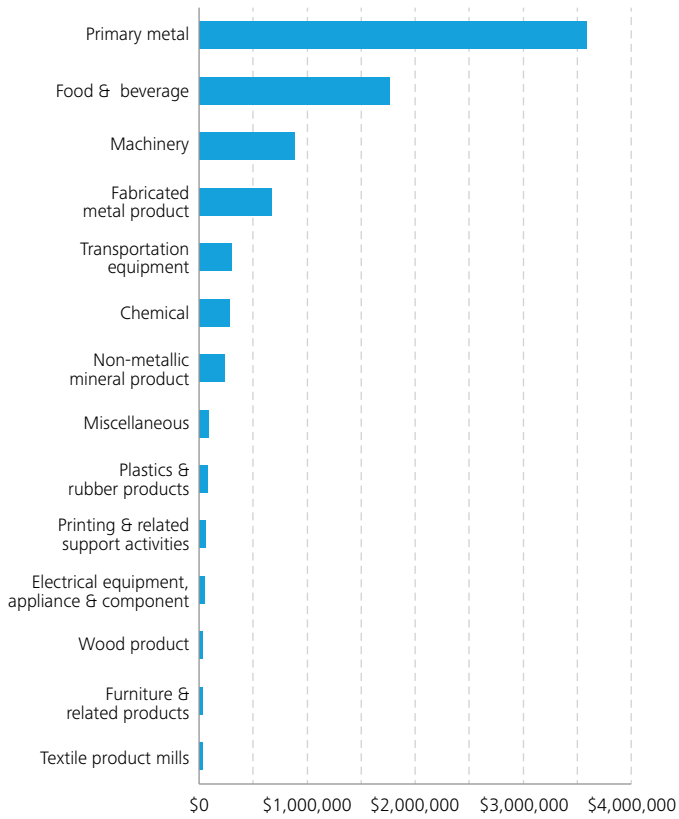


Source: Conference Board of Canada, 2012

Manufacturing employment growth – Hamilton



Top Hamilton manufacturing industries by revenue (thousands)



Hamilton is well positioned to leverage its strengths in the areas of materials / steel, food and beverage, machinery, automotive equipment, clean technology and life sciences based manufacturing. Foreign direct investment and export expansion also represent significant opportunities, given the role that advanced manufacturing plays in Ontario’s international trade activity.

Source: Statistics Canada, All Manufacturing Industries

Summary of City of Hamilton advanced manufacturing strengths, assets and capabilities

Strengths	Assets	Capabilities
Located within a competitive economic region	Diverse economy, sectors and major employers	Materials / metal / steel manufacturing
Expansive market access	Established manufacturing base	Food and beverage manufacturing
Industrial market accelerating	Strong, diverse infrastructure and transportation assets	Machinery manufacturing
Manufacturing forecast to rebound	Potential to provide large parcels of development land	Automotive equipment manufacturing
Positive GDP growth projected across all sectors	Access to talent / Strong education and research institutions	Clean technology
Longer term population and employment forecast to grow rapidly	Available networks and innovation infrastructure	Life sciences / healthcare
Relatively low competitive development costs	Quality of life factors and relatively inexpensive housing	Advanced manufacturing FDI and export opportunities
	Established position within regional advanced manufacturing cluster	

Market challenges and vulnerabilities

Although the City is well-positioned within the global advanced manufacturing marketplace, this is not to suggest that the advanced manufacturing sector does not face obstacles to future growth. Major challenges include global, low cost competition, relatively high municipal industrial property taxes and a tightening industrial space and land market. Market vulnerabilities include growing competition for Foreign Direct Investment (FDI), demographic challenges, future skill shortages, and a challenging regulatory and union environment. The perception of the City as a traditional steel producing town is also a potential barrier to new investment.

Some of these challenges cannot be directly addressed at the municipal level, for example global low cost competition or provincial or federal policy conditions. Other issues such as tax rates, the lack of land and space availability within the local real estate market, perception challenges, and the need to attract and retain innovative manufacturing talent can potentially be addressed by the City of Hamilton. Within this context, the strategic directions below are recommended to ensure that the City of Hamilton is in the best possible position to meet the needs of the market and capitalize on future opportunities in this important sector. A subsequent section will identify specific corresponding recommendations and action items for these strategic directions.

Strategic directions

The following section outlines general strategic directions identified for the City of Hamilton and its advanced manufacturing sector.

Continue to make advanced manufacturing a high economic development priority

Raising the awareness of advanced manufacturing is important, as the sector plays a key role in wealth creation and has the ability to drive economic prosperity and productivity growth in the City, Provincial and National economy. A focus on the top sub-sectors and emerging sub-sectors identified in this study is recommended, including:

- Materials / metal / steel manufacturing;
- Food & beverage manufacturing;
- Machinery manufacturing;
- Transportation / automotive manufacturing;
- Life sciences / healthcare manufacturing;
- Clean technology manufacturing; and
- Emerging technologies such as additive manufacturing, nanotechnology and synthetic biology and genetic engineering.

The City has many competitive advantages that will allow it to capitalize on future opportunities, in particular the potential re-shoring of more specialized manufacturing to North America. Hamilton's strategic location, access to transportation infrastructure and land supply will be major advantages.

Ensure existing firms remain competitive

It is critical to ensure that the existing base of firms in the City's advanced manufacturing sector remains as competitive as possible. It is clear that manufacturing firms in Canada and Ontario are under measurable cost pressures. The City should seek to ensure that existing firms are able to adapt to these pressures and remain competitive. Of particular importance will be small and medium size enterprises, whose continued growth will play a major role in closing the productivity gap between Canada and the US.

Continue to expand innovation infrastructure and other enabling factors

The City should seek to create an environment in which a wide range of breakthrough advances can be made and commercialized in the form of new materials, products and manufacturing processes. To this end it is important to maintain and expand the infrastructure and other enabling factors that supports advanced manufacturing, including: higher education and training; innovation, research and development capabilities; information and communications systems; availability of skilled labour; access to capital and incentives; and a stable, competitive business cost environment.

Aggressively pursue high-profile advanced manufacturing investments

Although Hamilton will experience a certain amount of investment in the normal course of growth, this may not reflect the City's full economic potential. To fully capitalize on future opportunities, the City should aggressively pursue advanced manufacturing investments, in particular high profile users, to raise the profile of the sector and set the tone for the future. An aggressive approach is also necessary to keep pace with competing communities, for which advanced manufacturing is also a high priority and, in some cases, where direct incentives are being offered to attract investment.

Monitor and report on the state of the industry

Fundamentally, the City's advanced manufacturing strategy must focus on putting in place the business conditions, infrastructure and other enabling factors that will make Hamilton an attractive location for new investment, combined with an active pursuit of high profile users. Since this strategy cannot be followed without relevant market intelligence, the final initiative is to regularly monitor and report on the state of the industry. The information and insights gathered will be required for several purposes, including the communication of success stories, identifying the requirements of existing and future advanced manufacturing firms and tracking trends and changes in the industry.

Action plan

In order to implement these strategic areas, it is recommended that specific actions be taken within the following five categories, which are identified in detail below.

1

Marketing and branding

1 Continue to position Hamilton as part of Ontario and the broader GTAH and beyond

Given the City of Hamilton's strategic position within the broader regional, provincial and national advanced manufacturing sector, it is recommended that the City continue to work with other municipalities and industry partners to market the broader Greater Toronto and Hamilton Area (GTAH), Ontario and national advanced manufacturing industry. The City should seek to service or partner with new advanced manufacturing businesses that may choose to locate in other municipalities in close proximity to Hamilton. The City's ability to build its reputation, relationships and partnerships with members of the broader regional advanced manufacturing sector will be critical to realizing such opportunities.

2 Showcase the City of Hamilton's advanced manufacturing sector

A strategic marketing plan for the City of Hamilton's advanced manufacturing sector should be prepared to address the broader challenges associated with the traditional perceptions of manufacturing in Hamilton. The sector needs to be showcased as technologically advanced and sophisticated and one that represents a substantial economic opportunity for the City, the Province and Canada. A focus on the top sub-sectors and emerging sub-sectors identified in this study is recommended, including:

- Materials / metal / steel manufacturing;
- Food & beverage manufacturing;
- Machinery manufacturing;
- Transportation / automotive manufacturing;
- Life sciences / healthcare manufacturing;
- Clean technology manufacturing; and
- Emerging technologies such as additive manufacturing, nanotechnology and synthetic biology and genetic engineering.

3 Update City's advanced manufacturing sector's marketing material / industry profiles

The City of Hamilton's advanced manufacturing sector requires marketing material with information for

the industry as a whole, as well as specific targeted sub-sectors and industries. Historical marketing materials should be updated to address current and emerging opportunities such as the rise of lightweight materials, new production processes, and the changing needs of the automotive industry. Hamilton's entire advanced manufacturing sector is well positioned to support all these activities. Key marketing channels to be updated include:

- Hardcopy and electronic marketing materials;
- Industry research;
- Website content; and
- Social media communication.

4 Market Hamilton as a top location to work, live and play

It is recommended that Hamilton undertake further marketing initiatives to challenge and continue shifting the perception of the City of Hamilton as a location for traditional industrial based manufacturing, smoke stacks and other "old economy" activities. The City should instead be positioned as a rapidly growing, technologically advanced and cost-effective location to live and conduct business. A "brand enhancement" program is recommended to articulate the quality of life opportunities in the Hamilton region.

5 Leverage trade show opportunities

While the specific trade shows that the City of Hamilton might choose to target and attend will vary by sub-sector and the City's priorities with respect to target sub-sectors, it is recommended that advanced manufacturing trade shows be utilized to leverage marketing and branding and investment attraction opportunities in accordance with these strategies that the City will develop, including both domestic and foreign exposure. Participation focus should be given to the largest and emerging advanced manufacturing sub-sectors in Hamilton, and include shows catering to small to medium sized businesses, as well as larger, high profile advanced manufacturing firms. Potential trade shows for consideration may include those supported by key manufacturing associations such as Canadian Manufacturers and Exporters (CME), Excellence in Manufacturing Consortium (EMC), etc., national and international economic development trade shows, and corporate real estate trade shows where numerous site selectors are in attendance, such as CoreNet. A sample of potential advanced manufacturing oriented trade shows or conferences for additional consideration are provided in Appendix F.

2

Business retention

6 Understand the needs of large and strategic advanced manufacturing firms

The City of Hamilton currently maintains a detailed business listing across advanced manufacturing, as well as various other data sets and information gathering tools such as its corporate calling initiative. These tools should continue to be used to properly understand and potentially predict the requirements and growth opportunities of large or potentially high-growth firms.

7 Identify key service providers and supply chain linkages

Local stakeholders consistently noted the importance of understanding the availability and access to critical suppliers following the choice to locate in Hamilton. Stakeholders noted that the clear identification of such suppliers at the site selection and business development stage is important for understanding how to effectively locate and source necessary services. The City should take steps to ensure that existing firms are aware of key providers and supply chain linkages.

8 Identify opportunities to assist existing businesses

Providing a cost competitive environment is important to assist local established businesses, and plays a key role to the ability of these organizations to expand and experience future growth. The City currently offers a range of incentive programs for property owners and developers to help offset the costs of development including: reductions in property tax rates, grants for brownfields, heritage properties, core area properties, and LEED certified buildings. The City should seek to ensure that existing firms are aware of the various available incentive programs.

9 Maintain regular contact with key industry leaders and foster community collaboration

The City should maintain regular contact with key industry leaders to ensure a thorough understanding of the needs of local businesses and be well positioned to respond. Given Canada's challenge of realizing growth across its more maturing organizations, and closing the productivity gap, there is an important role for the City to play in supporting advanced manufacturing industries and organizations. Similarly, the City should seek opportunities to foster collaboration and further develop the local manufacturing community through events, trade shows, etc.

3

Investment attraction

10 Assess the opportunity for targeted financial incentives

Financial incentives can play an important role in influencing business location decisions, and are particularly relevant given that many of Hamilton's competitors offer financial incentives. The City currently offers a range of incentive programs for property owners and developers, but none specifically able to target the advanced manufacturing sector. It is recommended that the City consider options for developing a targeted incentive program, similar to the Imagination, Manufacturing, Innovation Technology (IMIT) Financial Incentive Program in the City of Toronto.

11 Continue to lead tours of the City's advanced manufacturing facilities

The City should highlight potential opportunities within its entrepreneurial, innovation, and collaboration spaces by leading more frequent tours of the City's major assets and state of the art manufacturing facilities, such as the McMaster Innovation Park. Such tours could enable prospective organizations to better understand and envision the investment opportunity in Hamilton, and enable Hamilton's existing advanced manufacturing organizations to gain further exposure to the broader regional, national and international community. The local commercial real estate community should be leveraged further to strategically market and lease available space, and target advanced manufacturing investment.

12 Regularly monitor foreign direct investment (FDI) opportunities

Given that advanced manufacturing activities figure prominently in FDI, it is recommended that the City regularly monitor these opportunities. Such monitoring should include such issues as the site selection drivers for various foreign markets, foreign views of Hamilton as a potential location for investment and what investments could potentially be attracted. The results would be used to identify the top target countries, industries and organizations to pursue as part of a formal FDI strategy led by the City of Hamilton.

13 Aggressively pursue high profile investments with the appropriate tools

The City should continue to aggressively pursue high profile advanced manufacturing users in its key industry sectors, notably steel and fabricated metal products, food and beverage, automotive equipment and manufacturing. These are also sectors that figure prominently in the broader GTHA economy. The "full sales team" should be brought to the table including municipal experts in business development, economic development and planning. Steps should also be taken to provide greater clarity on the regulatory and union environment as well as options to streamline the approvals process.

4

Talent and skills development

14 Identify gaps in the local demand and supply of advanced manufacturing talent

It is critical to connect industry directly with training to effectively match the supply and demand for employment opportunities in Hamilton's advanced manufacturing market. Through its workforce planning research, studies, analysis, and surveys, the City should seek to strengthen the alignment of local businesses and institutions by specific program area. Areas of focus could include identifying local growing firms to contribute to future post-secondary education program advisory, identification of future skill needs / gaps, and support and encouragement of job training / retraining across industries.

15 Support and expand education and technical training programs

The City should seek to support and expand education and training, given the projected shortage of manufacturing skills in Ontario, the importance of science, technology, engineering and mathematic (STEM) based education programs and the presence of such specialized programming and research at McMaster University and Mohawk College. The City should also promote the positive graduation employment statistics in these programs and need for skills in STEM areas, in order to inform high school students on the technical and strong future career opportunities in advanced manufacturing.

16 Encourage local entrepreneurship

The City should continue to support and encourage innovation and entrepreneurship at the local level, including high school and post-secondary education events and talent competitions around advanced manufacturing to drive positive, and identify key sources of local talent, innovation and future entrepreneurs. One option would be for the City to host a “Dragon’s Den” type series, among local high schools and colleges to foster innovation and entrepreneurial activities, and feature innovative businesses in support of Hamilton entrepreneurial economy.

5

Local Industry Engagement

17 Identify advanced manufacturing champions for the City

Given the various actions required to lead expansion in the City’s advanced manufacturing sector, it is recommended that “champions” be identified. This could be through a permanent fulltime position, complemented by an advisory board. The position should be filled by an individual with experience in the advanced manufacturing sector and also knowledge of the municipal decision making process. As such, the champions could comprise representatives from the local manufacturing private sector, with a significant relationship with the City of Hamilton, or a public sector representative from the City of Hamilton with extensive relationships across the private sector manufacturing community. A similar approach has been taken by the City of Pittsburgh: a specific strategy was developed for senior industry leaders to actively engage in the attraction, recruitment and retention of high profile businesses to the Pittsburgh area.

18 Leverage regional expertise

The City should continue to engage, consult and leverage the expertise of local industry, innovation, and academic organizations such as:

- McMaster University;
- Mohawk College
- Excellence in Manufacturing Consortium (EMC);
- Innovation Factory;
- Canadian Manufacturers and Exporters (CME);
- Business Development Bank of Canada (BDC);
- Export Development Canada (EDC); and
- local manufacturing firms, among other groups.

These organizations will continue to provide critical insight into future manufacturing growth opportunities for the City of Hamilton, and additional recommendations for realizing future growth.

19 Improve local sector collaboration to drive partnership, innovation and productivity

Hamilton’s manufacturing based firms, associations, academic institutions and public sector leaders share common interests and concerns around productivity, effective collaboration, locating critical talent and investing in innovation, among others. While the City has a breadth of local expertise across the manufacturing sector, there are clear benefits to improving collaboration across these groups, to effectively support partnership and drive innovation. For example one issue identified by stakeholders is a lack of identified venue / space and means for such collaboration to take place. The City should consider options to supply space to accommodate regular manufacturing specific events, such as a “Productivity / Innovation Series”, across key industries, as well as hold other regular meetings with industry leaders to discuss key issues and facilitate development when opportunities arise.

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