



HOUSE OF COMMONS  
CHAMBRE DES COMMUNES  
CANADA

# **THE CANADIAN MANUFACTURING SECTOR: URGENT NEED TO ADAPT**

## **Report of the Standing Committee on Industry, Science and Technology**

**Dan Ruimy  
Chair**

**MAY 2017**

**42<sup>nd</sup> PARLIAMENT, 1<sup>st</sup> SESSION**

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# **THE STANDING COMMITTEE ON INDUSTRY, SCIENCE AND TECHNOLOGY**

has the honour to present its

## **SIXTH REPORT**

Pursuant to its mandate under Standing Order 108(2), the Committee has studied the manufacturing sector and has agreed to report the following:



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# THE CANADIAN MANUFACTURING SECTOR: URGENT NEED TO ADAPT

## CHAPTER ONE: INTRODUCTION

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In the past decades, employment in the manufacturing sector decreased in many industrialized countries, including Canada and the United States. This report presents some recommendations to reverse this trend in Canada.

On [10 March 2016](#), the House of Commons Standing Committee on Industry, Science and Technology (the Committee) agreed to concur in the first report from the Subcommittee on Agenda and Procedure, with the following recommendation:

That the Committee study and develop recommendations needed for Canada's small, medium and large manufacturing industry and report back to the House:

- a) identifying the manufacturing industry as a strategic sector for economic development;
- b) reviewing the causes and consequences of manufacturing job loss;
- c) reviewing ways to improve Canada's manufacturing sector;
- d) analyzing the state of industrial innovation across Canada, including
  - i. Industry-Academic collaborations,
  - ii. Innovation Centres,
  - iii. Business Incubators and Accelerators,
  - iv. Innovation Funding Sources; and
- e) proposing solutions that will strengthen the manufacturing sector as well as protect and promote manufacturing employment and training to fill skills shortages in the domestic labour force.

The Committee held 17 meetings on the subject in Ottawa, received 23 briefs, and met entrepreneurs from the manufacturing sector in Montreal (2 and 3 June 2016). The members would like to thank the witnesses who came before the Committee to discuss the problems affecting the Canadian manufacturing sector and propose solutions, as well as those who sent briefs to the Committee. The information they provided is essential to the future of this sector.

This report is organized as follows: Chapter Two demonstrates the strategic importance of the Canadian manufacturing sector, presents the causes of job losses in the sector, examines the employment situation in the manufacturing sector and some of its industries, and provides a profile of Canadian industrial innovation. Chapter Three examines the employee and entrepreneur skills that are necessary for Canadian manufacturing businesses, and analyzes the labour shortages affecting this sector. Chapter Four looks more closely at innovation and product commercialization. Finally, Chapter Five focuses on sources of financing and government assistance for the manufacturing sector.

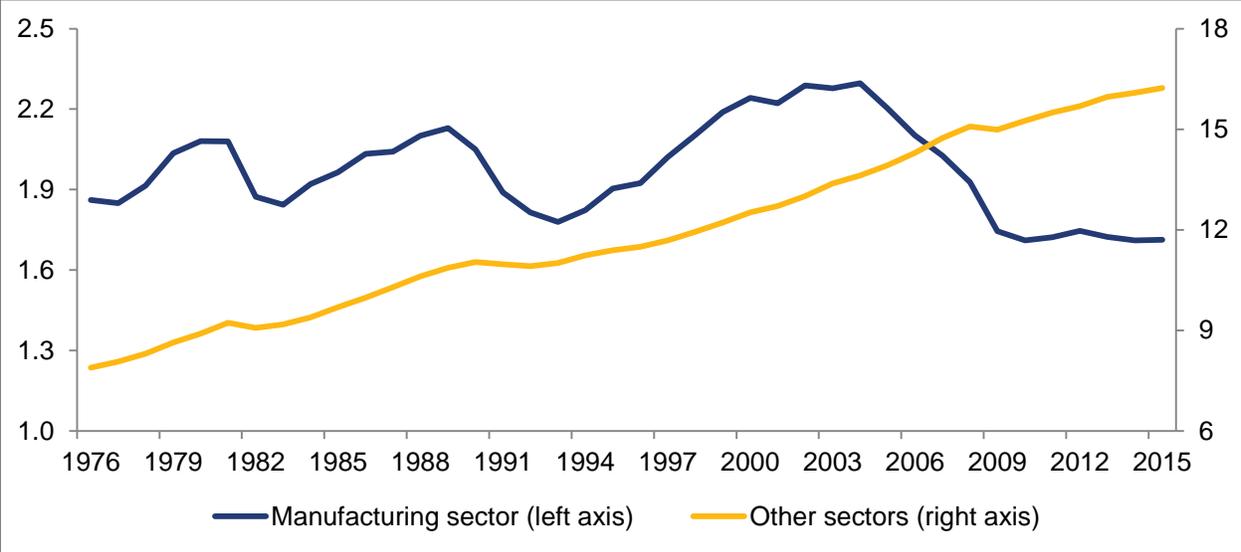
# CHAPTER TWO: THE MANUFACTURING SECTOR AS A STRATEGIC SECTOR FOR ECONOMIC DEVELOPMENT

## 2.1 Overall importance of the manufacturing sector

As shown in Figure 1, employment in the manufacturing sector decreased by 26%, or 586,500 jobs, from 2004 to 2010, and then rose a slight 0.1%, or 1,700 jobs, from 2010 to 2015. This period included a global recession in 2008–09. In comparison, employment in the rest of the economy rose by 12.0% between 2004 and 2010, and by 6.4% between 2010 and 2015.

Figure 1 also shows that the manufacturing sector is far more cyclical than the rest of the economy, as was witnessed during the 1981–82 and 1990–91 recessions. Also, in 1976, employment in the Canadian manufacturing sector (1.9 million employees) was higher than in 2015 (1.7 million employees), even though employment in the total economy increased by 84% during that period. Nevertheless, employment in the manufacturing sector represented 9.5% of total Canadian employment in 2015.<sup>1</sup>

**Figure 1 – Employment (Millions), Manufacturing Sector and the Rest of the Economy, 1976 to 2015, Canada**



Source: Figure prepared using data from Statistics Canada, “[Table 282-0008 – Labour force survey estimates \(LFS\), by North American Industry Classification System \(NAICS\), sex and age group, annual](#),” CANSIM (database), consulted 27 October 2016.

<sup>1</sup> Calculations based on data from Statistics Canada, “[Table 282-0008 – Labour force survey estimates \(LFS\), by North American Industry Classification System \(NAICS\), sex and age group, annual](#),” CANSIM (database), consulted 26 October 2016.

Furthermore, although total hours worked in the manufacturing sector decreased by 23% between 2004 and 2015, actual production only decreased by 10%. This is the result of a 17% increase in productivity (real output per hour of work).<sup>2</sup> These productivity gains are the result of increased global competition<sup>3</sup> and improved employee capacity and training.<sup>4</sup> Process automation and product sophistication were also significant contributors to this increase.<sup>5</sup>

Canada is not the only industrialized country to have experienced decreased manufacturing employment over the last 10 years. From 1998 to 2015, the share of manufacturing employment in total employment dropped from 15.0% to 9.5% in Canada, from 15.0% to 10.3% in the United States and from 18.5% to 9.6% in the United Kingdom.<sup>6</sup> Table 1 shows employment in various countries in the manufacturing sector, in 1998 and 2014.

**Table 1 – Level and Variation in Manufacturing Sector Employment, By Selected Countries, in Millions, 1998 and 2014**

Country	1998	2014	Difference, 1998–2014	
			Level	Percentage
Brazil	8.2	12.2	4.0	48.6
Canada	2.1	1.7	-0.4	-18.7
France	4.2	3.2	-1.0	-23.4
Germany	8.6	7.8	-0.8	-8.9
Italy	4.9	4.1	-0.7	-15.2
Japan	13.8	10.4	-3.4	-24.7
Mexico	6.8	7.8	1.1	16.0
United Kingdom	5.0	3.0	-2.0	-39.9
United States	19.7	15.1	-4.6	-23.3

Source: Table prepared using data from the International Labour Organization, "[Employment by Sex and Economic Activity](#)," consulted 7 December 2016.

2 Calculations based on data from Statistics Canada, "[Table 383-0029 – Labour productivity and related variables by business sector industry, consistent with the North American Industry Classification System \(NAICS\) and the System of National Accounts \(SNA\), provinces and territories, annual](#)," CANSIM (database), consulted 27 October 2016.

3 House of Commons, Standing Committee on Industry, Science and Technology (INDU), *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 15, 17 May 2016, [1620 \(Iain Christie\)](#).

4 Ibid., [1620 \(Joseph Galimberti\)](#).

5 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 27, 17 October 2016, [1630 \(Flavio Volpe\)](#).

6 International Labour Organization, [ILOSTAT](#) (database), consulted 26 October 2016.

The manufacturing sector is still “a very important part of the Canadian economy,” notable because it is responsible for about “half of the R and D [research and development] activity that takes place here in Canada.”<sup>7</sup> The manufacturing sector is also responsible for two thirds of Canadian exports.<sup>8</sup> Thus, the manufacturing sector is important for Canada’s trade balance, as well as for innovation.

Beyond the numbers, one witness summarized the importance of the manufacturing sector by highlighting that sector’s contribution to value added and the diversification of the Canadian economy:

Canada needs a balanced economy. We cannot sustain just by digging stuff up and selling it, nor can we just serve each other coffee and sell each other shoes in the service sector and call it a viable economy. Canada needs to make things. We need to apply our knowledge and expertise, we need to add value to our resources, and we need to continue to be world leaders in advanced technology, productivity, and innovation.<sup>9</sup>

Jerry Dias  
Unifor

## 2.2 Industry characteristics

Certain manufacturing industries were better able to recover from the recession of 2008–09 than the sector as a whole. Table 2 shows the variation in employment from 2010 to 2015 for industries in the manufacturing sector. Overall, employment rose by 1.4% in the entire manufacturing sector during that period.<sup>10</sup>

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7 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1545 \(Michael Burt\)](#). The exact proportion of total business enterprise R&D intramural expenditures for the manufacturing sector was 42% in 2015. Calculation based on data from Statistics Canada, “[Table 358-0024 – Business enterprise research and development \(BERD\) characteristics, by industry group based on the North American Industry Classification System \(NAICS\) in Canada, annual](#),” CANSIM (database), consulted 26 October 2016.

8 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 20, 14 June 2016, [1545 \(Jerry Dias\)](#). This figure is accurate for 2015. See: Innovation, Science and Economic Development Canada, [Trade Data Online \(TDO\)](#), consulted 27 October 2016.

9 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 20, 14 June 2016, [1545 \(Jerry Dias\)](#).

10 There is a slight discrepancy in employment growth in the manufacturing sector from 2010 to 2015 depending on which Statistics Canada survey is used to determine employment, i.e., the Labour Force Survey (growth of 0.1%) or the Survey of Employment, Payrolls and Hours (growth of 1.4%), because the latter does not include self-employed workers. It is used here because it contains more details on small industries in the manufacturing sector.

**Table 2 – Level and Variation in Manufacturing Sector Employment,  
By Industry, 2010 and 2015, Canada**

Industry	2010	2015	Variation	
			Number of jobs	%
Motor vehicle, motor vehicle body, motor vehicle parts	109,375	125,404	16,029	14.7
Other transportation equipment	16,315	18,460	2,145	13.1
Chemicals	79,290	88,757	9,467	11.9
Machinery	119,459	132,504	13,045	10.9
Aerospace products and parts	43,286	47,259	3,973	9.2
Fabricated metal products	144,783	155,358	10,575	7.3
Petroleum and coal products	17,695	18,692	997	5.6
Other industries in the manufacturing sector	56,538	59,186	2,648	4.7
Non-metallic mineral products	49,743	52,010	2,267	4.6
Plastics and rubber products	92,884	96,507	3,623	3.9
Wood products	88,949	91,781	2,832	3.2
Food and beverages	251,407	255,592	4,185	1.7
Primary metal manufacturing	61,167	57,267	-3,900	-6.4
Furniture and related products	68,832	63,926	-4,906	-7.1
Electrical equipment, appliances and components	36,818	33,787	-3,031	-8.2
Textile and textile product mills	18,941	17,209	-1,732	-9.1
Paper and printing	121,450	105,214	-16,236	-13.4
Clothing and leather products	28,556	23,145	-5,411	-18.9
Computer and electronic products	71,208	55,968	-15,240	-21.4
<b>Manufacturing sector, total</b>	<b>1,476,695</b>	<b>1,498,027</b>	<b>21,332</b>	<b>1.4</b>

Source: Table prepared using data from Statistics Canada, "[Table 281-0024 – Survey of Employment, Payrolls and Hours \(SEPH\), employment by type of employee and detailed North American Industry Classification System \(NAICS\), annual](#)," CANSIM (database), consulted 26 October 2016.

Different industries in the manufacturing sector have different characteristics. For example, the aerospace industry spends five times more on R&D than the manufacturing sector average, per dollar of production. Furthermore, its exports are more diverse than those of the manufacturing sector as a whole. For example, in 2015, 64% of its production was destined for the United States, versus 81% for the entire manufacturing sector.<sup>11</sup> Aerospace is also supply-chain oriented: 60% of its exports are parts used to manufacture airplanes elsewhere.<sup>12</sup>

The presence of the steel industry in a community has a significant economic impact in terms of transport, development of support technology and supply and maintenance; it also attracts other industries, such as auto parts manufacturing and specialized production of steel products. With an increase of 15% of employment in the automotive industry from 2010 to 2015, one would have expected the same in the increase in the steel industry, but it was not the case, as employment decreased by 2% over the same period.<sup>13</sup> The steel industry is dealing with problems of global overcapacity, largely due to policies considered to be unfair, such as dumping from China (exporting at prices that are lower than the cost of production in order to access markets).<sup>14</sup>

Forest products manufacturing is one of the industries in the manufacturing sector with the highest proportion of jobs in rural areas.<sup>15</sup> This is because that is where the resource is located. This industry is also developing new, more ecological products, such as nanoproducts derived from wood that can be used in the composition of metal alloys.<sup>16</sup> Similarly, the nuclear industry is manufacturing high quality components in Canada for use in the manufacture of other products.<sup>17</sup>

The food production industry represents 18% of the manufacturing sector's output, but only 8% of its exports.<sup>18</sup> The success of small businesses in this sector often depends on having a niche product, or a terroir (specific local products).<sup>19</sup> This industry has enormous growth potential because of future population growth.<sup>20</sup> The meat industry is

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11 Calculations based on data from Innovation, Science and Economic Development Canada, [Trade Data Online](#), consulted 28 October 2016.

12 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 15, 17 May 2016, [1550 \(Iain Christie\)](#).

13 Statistics Canada, "[Table 281-0024 – Survey of Employment, Payrolls and Hours \(SEPH\), employment by type of employee and detailed North American Industry Classification System \(NAICS\), annual](#)," CANSIM (database), consulted 23 November 2016.

14 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 15, 17 May 2016, [1600 \(Joseph Galimberti\)](#).

15 *Ibid.*, [1610 \(Paul Lansbergen\)](#).

16 *Ibid.*

17 Canadian Nuclear Association, [Brief presented to the Standing Committee on Industry, Science and Technology for its study of the Canadian manufacturing sector](#), p. 3, 28 October 2016.

18 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1555 \(Mathew Wilson\)](#).

19 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 26, 5 October 2016, [1640 \(David McInnes\)](#).

20 *Ibid.*, [1650 \(Carla Ventin\)](#).

more dependent on exports, and consumption is very price sensitive. For that reason, this industry must constantly innovate to keep its costs down.<sup>21</sup>

Oil production has decreased in recent years as a result of the drop in oil prices. “As oil prices have declined, capital flight has exacerbated the challenges facing the energy sector which has, as a result, directly impacted manufacturing.”<sup>22</sup> From 2013 to 2015, employment in the petroleum and coal products manufacturing sector decreased by 1,185 jobs to 18,692, a decline of 6%.<sup>23</sup> On the other hand, low oil prices tend to decrease the production costs in other industries of the manufacturing sector. It also tends to decrease the value of the Canadian dollar, which is good for Canadian exporters.

The chemical industry employed nearly 89,000 people in 2015, an increase of 12% since 2010.<sup>24</sup>

The North American chemistry industry has changed dramatically in the past five years. The availability of low-cost, low-carbon feedstocks, specifically, natural gas, liquids, and shale gas, has put North American producers amongst the lowest cost chemical producers in the world. That, combined with the anticipated growth and demand, has led to significant capital investment. Today, we are tracking more than 275 chemistry projects with an impressive book value exceeding \$225 billion under development in the United States alone. Sixty percent of that represents foreign direct investment into the U.S. In turn, those anchor investments have spurred an additional 600 investments in the downstream plastic sector alone.<sup>25</sup>

Bob Masterson  
Chemistry Industry Association of Canada

Despite the decrease in employment in the manufacturing sector, the size of Canada’s defence industry has remained stable. This industry is highly dependent on the federal government procurement strategy.

Today, the opportunity of a generation stares our industry and the Government of Canada in the face. Over the next 20 years, the Canadian defence manufacturing base has the potential to grow significantly due to the planned recapitalization of the Canadian Armed Forces. Shipbuilding and the fighter jet replacement program are the two largest pieces of this puzzle, financially speaking, accounting for at least \$35 billion in capital equipment.<sup>26</sup>

Christyn Cianfarani  
Canadian Association of Defence and Security Industries

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- 21 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 28, 19 October 2016, [1620 \(Troy Warren\)](#).
- 22 Alberta Chambers of Commerce, “[Strengthening Manufacturing in Alberta and Canada: Recommendations to the Standing Committee on Science, Technology and Industry](#),” brief presented to the Committee by Darrell Toma, Past Chair, Alberta Chambers of Commerce, 8 June 2016, p. 4.
- 23 Calculations based on data from Statistics Canada, “[Table 281-0024 – Survey of Employment, Payrolls and Hours \(SEPH\), employment by type of employee and detailed North American Industry Classification System \(NAICS\), annual](#),” CANSIM (database), consulted 27 October 2016.
- 24 Statistics Canada, “[Table 281-0024 – Survey of Employment, Payrolls and Hours \(SEPH\), employment by type of employee and detailed North American Industry Classification System \(NAICS\), annual](#),” CANSIM (database), consulted 23 November 2016.
- 25 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 29, 24 October 2016, [1535 \(Bob Masterson\)](#).
- 26 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 16, 19 May 2016, [1545 \(Christyn Cianfarani\)](#).

Agricultural manufacturers build machines used in the agriculture sector. In 2013, that industry was estimated to have a GDP of \$1.3 billion.<sup>27</sup> In 2015, employment for the larger “agricultural, construction and mining machinery” industry was estimated at nearly 32,000.<sup>28</sup> More than half of the industry is located in rural areas.<sup>29</sup>

The automobile industry is one of the most important in the manufacturing sector in terms of employment. It also has a significant impact on other manufacturing industries:

[T]he auto industry accounts for roughly 115,000 direct jobs and about 500,000 direct and indirect jobs across the country. For every one assembly job, there are seven to nine other jobs created in the economy. No other manufacturing sector has such a high job multiplier.<sup>30</sup>

Mark Nantais  
Canadian Vehicle Manufacturers' Association

### 2.3 Causes of job losses in the manufacturing sector

Part of the decrease in employment in the manufacturing sector is due to a decline in demand for certain Canadian products:

The paper industry is a very clear example of this. The industry is 30% smaller today than it was 10 to 15 years ago, and that's just tied to the fact that demand for paper products has shrunk dramatically over that period of time, due to what's been going on with the digitization of media.<sup>31</sup>

Michael Burt  
Conference Board of Canada

Another reason for the decline in the Canadian manufacturing sector is increased international competition, with unit costs that are often much lower abroad. This competition is coming from China, but also other emerging economies like Mexico. Canada has witnessed the displacement of production and employment to these countries, including in the auto parts, apparel, furniture and electronic products industries.<sup>32</sup>

Increased energy costs are also partially responsible for the challenges facing the manufacturing sector. The problem lies with the high cost of new energy production and distribution infrastructure, whether it be traditional or renewable energies.<sup>33</sup> There are two key solutions: increased energy efficiency; and co-generation, by which businesses

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27 Data obtained from Statistics Canada.

28 Statistics Canada, “[Table 281-0024 – Survey of Employment, Payrolls and Hours \(SEPH\), employment by type of employee and detailed North American Industry Classification System \(NAICS\), annual](#),” CANSIM (database), consulted 23 November 2016.

29 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 22, 21 September 2016, [1550 \(Leah Olson\)](#).

30 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 27, 17 October 2016, [1530 \(Mark Nantais\)](#).

31 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1545 \(Michael Burt\)](#).

32 Ibid.

33 Ibid., [1610 \(Scott Smith\)](#).

produce their own energy and can even sell back the surplus they do not use.<sup>34</sup> Other solutions may include new provincial energy plans.

The appreciation in the Canadian dollar in 2007 and 2008, which was caused by the increase in commodity prices, and which made Canadian exports more expensive abroad, also contributed to job losses in the manufacturing sector during that period.<sup>35</sup> Since then, there was depreciation in the Canadian dollar, which may have helped Canadian exporters: we could have witnessed a continued decline in manufacturing employment instead of a small increase.

## 2.4 The state of Canadian industrial innovation

Innovation is the key to competitiveness.<sup>36</sup> It can take the form of developing new products, improving existing products, or improving the manufacturing processes for existing products.

Innovation is the art of using inventions in new ways. Wealth is created by owing the intellectual property and by making things. Instead of always thinking about how to make better things, we should probably consider sometimes thinking about a better way to make things.<sup>37</sup>

Scott Smith  
Canadian Chamber of Commerce

The World Economic Forum has ranked Canada 22<sup>nd</sup> in the world for innovation in 2014.<sup>38</sup> The World Intellectual Property Organization ranked Canada 15<sup>th</sup> in the world for innovation in 2016.<sup>39</sup> In terms of business expenditures in R&D, Canada fell from 18<sup>th</sup> place to 26<sup>th</sup> between 2006 and 2013.<sup>40</sup>

## 2.5 Future of the sector

According to one witness, it is difficult to say which manufacturing industries will grow most in the future, but it would be important to focus on those that are export-oriented, “because the Canadian market is fairly small.”<sup>41</sup> Some witnesses, meanwhile, stress that the federal government should not pick “winners and losers” when developing its policies,<sup>42</sup> while others believe the opposite.<sup>43</sup>

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34 Ibid., [1625 \(Michael Burt\)](#).

35 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1535 \(Chris Roberts\)](#).

36 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1535 \(Scott Smith\)](#).

37 Ibid., [1540](#).

38 Ibid., [1535](#).

39 World Intellectual Property Organization, [Rankings](#), Global Innovation Index 2016.

40 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 14, 12 May 2016, [1535 \(Paul Davidson\)](#).

41 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1600 \(Michael Burt\)](#).

42 Alberta Chambers of Commerce, p. 2.

43 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 20, 14 June 2016, [1640 \(Jerry Dias\)](#).

During its travel and at meetings in Ottawa, the Committee heard that several countries that compete with Canada are developing new technologies, and it is important for the Canadian manufacturing sector to be among the first to commercialize the resulting products.<sup>44</sup> These disruptive technologies, such as robotics, additive manufacturing (or 3-D printing), the Internet of Things, and artificial intelligence, are in full expansion.<sup>45</sup> Additive manufacturing is almost non-existent in Canada compared with China, and requires significant investments.<sup>46</sup>

Most manufacturing industries face similar problems, although there are some differences.<sup>47</sup> A comprehensive manufacturing strategy should therefore be developed quickly, or opportunities for growth will be lost. According to some witnesses, “[t]ime lines are running out and investments should be done in the next 2 years.”<sup>48</sup>

In October 2016, Canadian Manufacturers and Exporters (CME), in cooperation with the Canadian Manufacturing Coalition, completed a business consultation process called Industrie 2030. This process was intended to create a road map for doubling Canadian manufacturing activity by 2030. CME is also working with the Department of Innovation, Science and Economic Development (ISED) to align this strategy with the federal government’s innovation strategy. The four core pillars of Industrie 2030 are: investing in plant capacity; developing and commercializing new products; adopting new technologies; and finding new customers.<sup>49</sup> The recommendations from Industrie 2030 were published in October 2016.<sup>50</sup>

## RECOMMENDATION 1

**The Committee recommends that the federal government develop a strategy for the Canadian manufacturing sector based on the recommendations in this report. This strategy should include clear objectives and timelines for the Canadian manufacturing sector in terms of production, employment and exports. Regular progress reports should be published to identify achievements to date, as well as any corrections that may be required.**

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44 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 15, 17 May 2016, [1615 \(Paul Lansbergen\)](#).

45 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1550 \(Mathew Wilson\)](#).

46 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 19, 9 June 2016, [1545 \(Martin Petrak\)](#).

47 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1555 \(Mathew Wilson\)](#).

48 Precision ADM, “[Advanced Digital Manufacturing](#),” brief presented to the House of Commons Standing Committee on Industry, Science and Technology by Martin Petrak, 9 June 2016, p. 5.

49 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1545 \(Mathew Wilson\)](#).

50 Canadian Manufacturers and Exporters, [CME Releases Action Plan to Grow Manufacturing and Exporting in Canada at Industrie 2030 Summit](#).

Additionally, according to other witnesses, policies could subsequently be developed for specific industries.<sup>51</sup> For example, the automotive, aerospace and telecommunications industries would be good candidates for sectoral initiatives.<sup>52</sup> The dairy processors would also like to see a strategy developed for their sector.<sup>53</sup>

We think we need a broad-based, sweeping manufacturing policy. We are fully supportive of the sectoral policies that have been created—aerospace and automotive, for example—but if you start lining that up with the food one, the equipment processing one, and all the other sectors that are out there, you will find that 90% of the issues are the same. Rather than create a whole bunch of individual sector ones, we think it is better to start at the big picture, define a national strategy, and see how the sectors fit within that afterwards.<sup>54</sup>

Matthew Wilson  
Canadian Manufacturers and Exporters

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51 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1555 \(Mathew Wilson\)](#).

52 Ibid., [1535 \(Chris Roberts\)](#).

53 Dairy Processors Association of Canada, "[Submission to the Standing Committee on Industry, Science and Technology](#)," November 2016, p.1.

54 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1555 \(Mathew Wilson\)](#).

# CHAPTER THREE: SKILLS AND SKILL SHORTAGES

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## 3.1 Entrepreneurs' skills

One important factor for the success of Canadian manufacturing businesses is the competence of entrepreneurs. They must be very knowledgeable about foreign markets<sup>55</sup> and the skills associated with commercializing and selling products.<sup>56</sup>

It is also very important to instill a sense of entrepreneurship in students who are not studying management, and to promote entrepreneurship as a viable career path.<sup>57</sup> For example, at Simon Fraser University (Burnaby, British Columbia), every student now has an opportunity to obtain an entrepreneurial certificate, and there is a master's program for students in sciences, technology, engineering and math that teaches them the basics in business management.<sup>58</sup>

## 3.2 Labour market information

Workers in the manufacturing sector have jobs that require specific skills, and generally have good working conditions. Specialized workers graduating from technical colleges and CEGEPs bring specialized technical capacity to the workforce.<sup>59</sup>

Labour Market Information (LMI) contains useful data for employers and students on what skills are and will be in demand.

Employment and Social Development Canada has created a model called the [Canadian Occupational Projection System](#) (COPS) that provides forecasts of shortages and surpluses by occupation. Among the 262 occupations analyzed in COPS, 30 are considered to be facing a shortage for the period 2015–2024. This includes 8 occupations associated with the natural and applied sciences (e.g., aerospace engineers), 12 in the field of health (e.g., nursing aides) and 6 occupations in trades, transport and equipment operators (e.g., welders).

Furthermore, several witnesses indicated that their industry is experiencing shortages of highly skilled workers, in areas such as entertainment software,<sup>60</sup> furniture manufacturing<sup>61</sup> or the chemistry industry.<sup>62</sup>

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55 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1550 \(Michael Burt\)](#).

56 Ibid., [1535 \(Scott Smith\)](#).

57 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 21, 16 June 2016, [1550 \(Julia Deans\)](#).

58 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 14, 12 May 2016, [1640 \(Paul Davidson\)](#).

59 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 29, 24 October 2016, [1545 \(Bob Masterson\)](#).

60 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 24, 28 September 2016, [1630 \(Jayson Hilchie\)](#).

61 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 25, 3 October 2016, [1635 \(Pierre Richard\)](#), and Canadian Home Furnishings Alliance, "[Household Furniture and Mattress Manufacturing in Canada](#)," p. 6, 23 September 2016.

62 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 29, 24 October 2016, [1545 \(Bob Masterson\)](#).

According to a [document from the Canadian Chamber of Commerce](#) that was submitted in the context of this study, Canada does a good job producing statistics on labour requirements, such as vacant positions, in major geographic areas. Data are lacking, however, for students' skills. In addition, the sample of data used to determine skills at the local level (Statistics Canada's labour force survey) is deemed to be too small to obtain detailed LMI at the local level.

## RECOMMENDATION 2

**The Committee recommends that the federal government improve the labour market information it produces, notably connecting jobs in occupations in demand (such as in the sciences and specialized trades), locally and at the national level, with skills available with job seekers.**

Changes are needed in the manufacturing sector, and new fields are being created, but it takes time to begin teaching them in Canadian institutions.<sup>63</sup> For example, Canada still doesn't have any teaching programs on additive manufacturing, while several other countries already have at least one.<sup>64</sup>

Manufacturing sector councils could bring together representatives of the provincial, territorial and federal governments, teaching institutions and business and labour associations. This would improve cooperation between the private sector and teaching institutions with regard to the skills being sought by businesses.<sup>65</sup>

Certain witnesses also proposed providing wage subsidies to businesses that offer workplace opportunities for students with a view to better aligning business needs with the skills students have to offer,<sup>66</sup> particularly in small and medium enterprises (SMEs).<sup>67</sup> Such "co-op" programs could also be offered in all disciplines.<sup>68</sup>

## RECOMMENDATION 3

**The Committee recommends that the federal government establish sector councils in order to make students and post-secondary institutions more aware of what skills are required by manufacturing businesses, advanced manufacturing, in emerging fields that will be important to Canada's growth. These sector councils could be tasked to work with local educational institutions to create streams to employment, including work experience for students, and share best practices on processes and innovation as well as promoting investment.**

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63 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 23, 26 September 2016, [1605 \(Stephen Brown\)](#).

64 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 19, 9 June 2016, [1640 \(Martin Petrak\)](#).

65 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1535 \(Chris Roberts\)](#).

66 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1535 \(Scott Smith\)](#).

67 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 14, 12 May 2016, [1535 \(Paul Davidson\)](#).

68 Ibid., [1645](#).

### 3.3 Training employees and temporary immigration

More assistance for retraining and training workers who lose their jobs in a declining field could help them to acquire skills that are in demand.<sup>69</sup> An example of such programs is CertWORK+, a collaboration between the Canadian Labour Congress and the CME. It is a certification program that enables workers who have lost their job in the manufacturing sector to have their skills certified in order to enhance their employability.<sup>70</sup>

One witness even proposed that because of the pace of technological change, “reverse” co-op programs could be created, whereby employees would learn new production processes in colleges and universities and put them into practice in their companies.<sup>71</sup>

Programs such as the Temporary Foreign Worker Program (TFWP) are another way to address labour shortages.<sup>72</sup> [Some changes were put in place](#) to the TFWP in April 2011, introducing a “more rigorous assessment of the genuineness of the job offer” (made by the employer when searching for local employees) and putting “a limit of the length of time a temporary foreign worker may work in Canada before returning home”, to prevent abuse of the program. According to the [most recent data](#), the number of positions held by temporary foreign workers declined from 269,575 in 2012 to 113,580 in 2015. Some witnesses said that there have been problems with the program since then, primarily with the labour market impact assessment necessary to get foreign workers.<sup>73</sup>

I think that there are few mechanisms for immigration and refugee and talent acquisition. When international students finish the two years, there is no process, really, to see their value added to the whole ecosystem. We are not guiding them, we are not driving them, and there is no innovation hub or centre to bring them and another system together.<sup>74</sup>

Farzad Rayegani  
Polytechnics Canada

Moreover, a rapid need for highly skilled workers is often required in industries such as the automotive industry.<sup>75</sup> Many businesses would like the temporary foreign workers they hire to be able to eventually become permanent residents, but permanent immigration programs are generally aimed at more qualified workers.<sup>76</sup> Certain organizations do not see the need for the TFWP, and believe we should look first for solutions that involve training Canadian workers.<sup>77</sup>

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69 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1630 \(Michael Burt\)](#).

70 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1540 \(Chris Roberts\)](#).

71 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 22, 21 September 2016, [1540 \(Pearl Sullivan\)](#).

72 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1620 \(Scott Smith\)](#).

73 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 24, 28 September 2016, [1650 \(Jayson Hilchie\)](#).

74 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 19, 9 June 2016, [1700 \(Farzad Rayegani\)](#).

75 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 27, 17 October 2016, [1535 \(Mark Nantais\)](#).

76 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1630 \(Michael Burt\)](#).

77 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1640 \(Chris Roberts\)](#).

Finally, several witnesses feel that we should try to keep foreign students in Canada – including those who wish to become entrepreneurs – by expediting the permanent resident process.<sup>78</sup>

#### **RECOMMENDATION 4**

**The Committee recommends that the federal government increase options to address labour shortages: above all, by promoting on-the-job-training of Canadian and prospective employees, either through an increase in the Canada Job Grant or other means; also, by examining the possibility of using the Temporary Foreign Worker Program as a gateway to permanent immigration; and by expediting the process through which foreign students can become permanent residents, as a way to attract and retain top talent and skilled workers.**

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78 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 21, 16 June 2016, [1555 \(Victoria Lennox\)](#).

## CHAPTER FOUR: INNOVATION AND COMMERCIALIZATION

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There are several steps in the development of new products and processes: institutional research, transfer of knowledge to businesses, commercialization, growth and maturity. According to some witnesses, Canada is one of the best countries in the world for starting a manufacturing business. The challenge lies in the ability to make that business grow.<sup>79</sup> Affordable access to fast and reliable broadband Internet, in both urban and rural regions, would help achieve this goal:

[W]e have a huge opportunity in front of us with technology. As computers, data science, and broadband internet coverage merge with manufacturing, new technologies are emerging such as 3D printing, advanced robotics, and artificial intelligence. Existing technologies, such as computer-controlled cutting ... are finding new relevance and uses within modern supply chains.<sup>80</sup>

Scott Smith  
Canadian Chamber of Commerce

### 4.1 Collaboration between teaching institutions and the manufacturing sector

Several witnesses identified problems in terms of collaboration between academia and private Canadian businesses. They believe that post-secondary teaching institutions don't offer researchers enough incentives to tie their research to industry needs:

The research dollars flow to the post-secondary institutions where projects are designed to satisfy academic curiosity instead of market demand. The incentives for advancement in our post-secondary system focus on publications in prestigious journals and the citations generated through those publications. The wealth generated by patent filings of a research project is not considered in the career path of a researcher.<sup>81</sup>

Scott Smith  
Canadian Chamber of Commerce

Certain witnesses propose encouraging businesses to use the research infrastructure in teaching institutions.<sup>82</sup> There does appear to be a lack of consistency, however, in the services universities can offer manufacturing businesses.<sup>83</sup>

There is collaboration between teaching institutions and private industry in certain sectors, such as forest products. FPInnovations, that industry's research centre, collaborates with certain colleges and universities by sending some of its researchers

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79 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1600 \(Michael Burt\)](#).

80 Ibid., [1545 \(Scott Smith\)](#).

81 Ibid., [1535](#).

82 Ibid., 1710 ([Michael Burt](#) and [Scott Smith](#)).

83 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 28, 19 October 2016, [1640 \(Michel St-Amand\)](#).

to work at the teaching institutions. Among other things, they design promising new processes and products for the industry.<sup>84</sup>

Another good example of collaboration is the Consortium for Research and Innovation in Aerospace in Québec (CRIAQ), which was established in 2002 with a mission to increase the competitiveness of the aerospace industry and enhance the collective knowledge base in aerospace through improved education and training of students. CRIAQ develops and stimulates collaboration between industry specialists and researchers to identify and implement pre-competitive aerospace projects.<sup>85</sup> CRIAQ now has an equivalent at the federal level, the [Consortium for Aerospace Research and Innovation in Canada](#).

The research services offered in colleges and institutes are focused almost entirely on applied research, and students participate in almost all projects. These research projects are generally completed in less than one year. In 2014–15, more than 5,500 businesses (of which 86% were SMEs and half were from the manufacturing sector) used the R&D services offered by colleges and institutes. Unfortunately, many more could not do so due to a lack of funding.<sup>86</sup>

Universities play a critical role in the innovation continuum: more than 40% of all R&D in Canada takes place in universities. More than 65% of university faculty members were hired in the last 15 years, which creates a favourable environment for new ideas and innovations.<sup>87</sup>

Research collaboration between teaching institutions and manufacturing companies could also be fostered through the creation of sector councils (see Recommendation 3).<sup>88</sup>

## 4.2 Patents and intellectual property

There seems to be a problem in Canada with the transfer of intellectual property (IP) from teaching institutions to businesses. One witness commented that “[n]egotiating IP agreements with academic and research institutions is about the most painful thing I do in my job.”<sup>89</sup> In a brief submitted to the Committee, it was said that a member of the Dairy Products Association of Canada “described the process of purchasing IP from universities

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84 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 15, 17 May 2016, [1640 \(Paul Lansbergen\)](#).

85 CRIAQ, [About CRIAQ](#) and [CRIAQ Offers](#).

86 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 14, 12 May 2016, [1540 \(Christine Trauttmansdorff\)](#).

87 *Ibid.*, [1535 \(Paul Davidson\)](#).

88 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1535 \(Chris Roberts\)](#).

89 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 23, 26 September 2016, [1625 \(Jean-Paul Deveau\)](#).

as a 'negotiation and communication nightmare'.<sup>90</sup> In contrast, in some cases in the United States, this IP transfer is free of charge.<sup>91</sup>

Patents held by university researchers are often not commercialized or known to businesses.<sup>92</sup> A witness met by the Committee during its travel to Montreal said that the negotiation with a university to get the rights to her patent took tremendous efforts and time, which may have delayed commercialization of her innovation. Another witness said that Canada needs to have:

a broader policy mandate to look at accessing and improving the way intellectual property and the research from the research and development system are provided for manufacturers. Many times intellectual property is patented and not made available. We need to commercialize these technologies if we put money into their R and D system.<sup>93</sup>

Darrell Toma  
Alberta Chambers of Commerce

There was a suggestion that government, teaching institutions and industry create some sort of index of existing patents as a way to promote their commercialization.<sup>94</sup>

Given that faculty members in colleges are not required to publish, holding IP rights is of secondary importance for them. They are therefore more likely to engage with industry precisely because publishing and managing the IP is not key to the relationship.<sup>95</sup>

The question of cybersecurity of IP, particularly concerning the Internet of Things (IoT), was raised by a witness:

[W]hen the IoT gets pervasive, and it will, you'll have different layers of security problems. You have the cloud layer. You have the computer side. You also have the sensor side and the actuator side. Every component in the entire network of the IoT will be vulnerable, I would say. You will need reliability and security at every level.<sup>96</sup>

Pearl Sullivan  
University of Waterloo

One witness explained that it costs \$10,000 to \$15,000 to obtain a patent valid only in Canada. This amount could increase depending on the complexity of the technology involved or if the patent is for another jurisdiction.<sup>97</sup> The Intellectual Property Institute of Canada (IPIC) is promoting the creation of a program that would provide financial

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90 Dairy Processors Association of Canada, p. 3.

91 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 19, 9 June 2016, [1640 \(Darrell Toma\)](#).

92 *Ibid.*, [1535](#).

93 *Ibid.*

94 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1710 \(Scott Smith\)](#).

95 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 14, 12 May 2016, [1630 \(MaryLynn West-Moynes\)](#).

96 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 22, 21 September 2016, [1635 \(Pearl Sullivan\)](#).

97 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 25, 3 October 2016, [1605 \(Michel Gérin\)](#).

assistance to SMEs patenting their first invention, in order to foster a culture of innovation, protect Canadian inventions and favourably position businesses to begin the commercialization phase. Based on the conditions of the Government of Quebec's [First Patent Program](#) [French only], IPIC estimates that a similar federal program would cost \$25 million per year.<sup>98</sup>

## RECOMMENDATION 5

**The Committee recommends that the federal government explore ways to create an index of existing patents in Canadian post-secondary institutions so they can be readily identified by industry, and explore ways to promote and encourage the transfer of intellectual property from post-secondary institutions to Canadian industry.**

### 4.3 Commercialization

Several witnesses mentioned that too many good ideas are abandoned early on due to a lack of assistance (regardless of the type). The commercialization of products, and therefore the generation of income, is often the major stumbling block for Canadian start-ups.<sup>99</sup>

The ecosystem, comprising innovation centres, incubators, accelerators, academia and government organizations and programs, can help with the commercialization of products.<sup>100</sup> Industrial clusters are also important for the manufacturing sector:

[T]he suppliers of our ingredients and raw materials, and the distribution network that we ship into, have to be relatively close. There will be several places where we tend to have those clusters of our companies, and when we do, they enhance other business around them.<sup>101</sup>

Darren Praznik  
Canadian Cosmetic, Toiletry and Fragrance Association

Mentoring is also an exceptional tool for start-ups. In fact, businesses that are mentored survive at twice the rate of businesses that are not.<sup>102</sup> According to one witness, mentors are “the glue of Canada's entrepreneurship community.... They are investors. They give back.”<sup>103</sup> Mentors are hugely important because they help reduce errors and save time.<sup>104</sup> The work of the C100 organization was cited as an exemplary model of

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98 Intellectual Property Institute of Canada, “[Encouraging Innovation and Growth in Canada's Manufacturing Sector](#),” brief presented to the Standing Committee on Industry, Science and Technology for its study of the Canadian manufacturing sector, p. 5, September 2016.

99 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 16, 19 May 2016, [1650 \(Christyn Cianfarani\)](#).

100 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 21, 16 June 2016, [1655 \(Victoria Lennox\)](#).

101 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 16, 19 May 2016, [1710 \(Darren Praznik\)](#).

102 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 21, 16 June 2016, [1610 \(Julia Deans\)](#).

103 *Ibid.*, [1610 \(Victoria Lennox\)](#).

104 *Ibid.*, [1615 \(Avvey Peters\)](#).

mentoring.<sup>105</sup> C100 is a non-profit organization created by Canadian investors living in Silicon Valley that offers venture capital, mentorship and knowledge to Canadian entrepreneurs.<sup>106</sup>

Large companies can support the development of smaller companies, notably through innovation centres:

Large companies and the people who run them aren't typically rewarded for taking risks. They need a little help to do that. There are simple and productive ways that big companies can engage with smaller and more agile firms, things like innovation contests, strategic partnerships, and problem-solving sessions convened by a neutral, trusted partner.<sup>107</sup>

Avvey Peters  
Communitech

There are several incubator and accelerator models being developed in Canadian colleges and institutions.<sup>108</sup> The Communitech representative called on the federal government to support the existing ecosystem.<sup>109</sup> The multi-disciplinary dimension should be central to incubators because the best ideas often emerge from the overlapping of several disciplines.<sup>110</sup>

#### 4.4 Access to foreign markets

Several witnesses indicated that the best way for a manufacturing company to develop is not to completely design a product, but to insert itself into global value chains.<sup>111</sup> In some cases, such as steel, access to the value chains of American companies, proximity that allows for on-time delivery, and quality products give Canadian businesses a competitive advantage.<sup>112</sup> One problem that was highlighted during the Committee's visit to Montreal is that large Canadian companies are not doing enough to integrate start-ups into their value chains, which prevents them from developing. This was also mentioned by other witnesses.<sup>113</sup> Greater use of the federal government's trade delegates is part of the solution for SMEs trying to access foreign markets and global value chains.<sup>114</sup>

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105 Ibid., [1640 \(Victoria Lennox\)](#).

106 C100, [Home page](#).

107 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 21, 16 June 2016, [1605 \(Avvey Peters\)](#).

108 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 14, 12 May 2016, [1700 \(Christine Trauttmansdorff\)](#).

109 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 21, 16 June 2016, [1605 \(Avvey Peters\)](#).

110 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 14, 12 May 2016, [1720 \(Christine Trauttmansdorff\)](#).

111 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 19, 9 June 2016, [1530 \(Darrell Toma\)](#).

112 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 15, 17 May 2016, [1625 \(Joseph Galimberti\)](#).

113 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1630 \(Scott Smith\)](#) and [1635 \(Michael Burt\)](#).

114 Ibid., [1645 \(Michael Burt\)](#).

Overall, opening up to trade and free trade agreements creates opportunities for Canadian manufacturing businesses to access new markets more easily,<sup>115</sup> although they do represent a challenge for some industries:

The TPP [Trans-Pacific Partnership] specifically falls short on two very important points. Despite the highly integrated nature of the Canadian and U.S. auto sectors, Canada accepted an accelerated tariff phase-out of five years, five times faster than the auto tariff phase-out that was agreed to in the U.S., 25 years for cars and 30 years for trucks. Both of the U.S. tariffs are back-loaded. It is very uncompetitive with the U.S. Also, the TPP failed to include strong and enforceable currency disciplines to address currency manipulation. We know there are governments that manipulate their currency, including the Japanese government. That is why we have been extremely strong in making sure we have currency disciplines in the TPP.<sup>116</sup>

Dianne Craig  
Ford Motor of Canada Limited

Trade, and the capacity to export or import, is of critical importance in several industries. For example, all the engines Ford builds in Canada are exported, and 90% of the vehicles it builds in Canada are exported to 100 countries.<sup>117</sup> However, representatives of the automotive sector distinguished between theoretical and practical free trade. By way of example, very few vehicles are exported from Canada to South Korea and Japan. There are non-tariff barriers that may be a cause for this phenomenon:

Even if you have tariffs that get reduced over time, there are the non-tariff barriers that are primarily currency manipulation, which are preventing our vehicles from getting in. That's one, but I'll give you another example with what happened in South Korea. Consumers had bought vehicles that were exported into South Korea. All of a sudden for some reason, they got audited. So in their equivalent of whatever their registration area is, all of a sudden, everybody who didn't buy a Hyundai or Kia was getting a phone call about their purchase.<sup>118</sup>

Dianne Craig  
Ford Motor of Canada Limited

Free trade agreements can have less impact on automotive aftermarket parts because most of the manufacturers have already moved their production to Asia.<sup>119</sup> One witness expressed concern regarding a liberalization of trade with China, which he says is not a market economy.<sup>120</sup>

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115 Ibid., [1640](#).

116 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 20, 14 June 2016, [1605 \(Dianne Craig\)](#).

117 Ibid., [1600](#).

118 Ibid., [1655](#).

119 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 16, 19 May 2016, [1530 \(Jean-François Champagne\)](#).

120 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 28, 19 October 2016, [1635 \(Ken Neumann\)](#).

More information should be made public regarding the potential positive and negative impacts of trade agreements on regional and local markets, but also regarding the opportunities they may provide in terms of exports to new markets.<sup>121</sup>

## **RECOMMENDATION 6**

**The Committee recommends that the federal government consider all pertinent information regarding predicted impacts for Canada in terms of employment and production, by industry, when considering signing trade agreements.**

It was stated that free trade agreements should include clauses to prevent currency manipulation by governments for purposes of obtaining a competitive advantage for their businesses.<sup>122</sup> In the steel industry, problems with dumping by China negatively affect the competitive capacity of Canadian businesses. Efforts to improve trade dispute settlement processes are therefore required.<sup>123</sup> A representative of ISED told the Committee that the trade dispute settlement mechanisms are slow, and that the level of harm required to trigger a review of disputes is too high. He also mentioned that the federal budgets of 2015 and 2016 indicated that there would be improvements to the operations of the [Canadian International Trade Tribunal](#).<sup>124</sup>

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121 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 19, 9 June 2016, [1615 \(Darrell Toma\)](#).

122 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 20, 14 June 2016, [1605 \(Dianne Craig\)](#).

123 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 15, 17 May 2016, [1600 \(Joseph Galimberti\)](#).

124 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 30, 26 October 2016, [1655 \(Paul Halucha\)](#).



# CHAPTER FIVE: GOVERNMENT PROGRAMS

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## 5.1 General observations

Different federal programs are aimed at businesses at different stages of their development. Several witnesses offered ideas on how to improve these programs.

Some witnesses observed that it is important to assess existing federal programs and focus on what works well.<sup>125</sup> This assessment should be based on different objectives, such as creating businesses or jobs.<sup>126</sup> However, some programs have objectives that are more difficult to quantify, while for others, benefits may only be generated over the very long term.<sup>127</sup> Loans that are provided should not be taxed back,<sup>128</sup> or should in fact be provided in the form of grants.<sup>129</sup>

Certain programs are so complex, particularly for SMEs,<sup>130</sup> that businesses are sometimes discouraged from applying.<sup>131</sup> Several programs also differ across regions of Canada. According to one witness, they should be standardized across the country for the sake of fairness.<sup>132</sup> As such, a manufacturer in Saskatchewan should “get funding to automate his plant,”<sup>133</sup> a possibility offered in the other federal regional development agencies.

Some programs are aimed only at small businesses; however,

[w]e need to consider alternatives to our tax structures that not only encourage innovation, but have the potential to attract new foreign investment and generate new untapped revenues.... We have a disincentive to growth in the form of our business tax structure that penalizes companies that grow beyond a certain level. The same is true for R and D direct incentives, which are geared towards small companies.<sup>134</sup>

Scott Smith  
Canadian Chamber of Commerce

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125 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1605 \(Michael Burt\)](#).

126 Ibid.

127 Ibid. ([Scott Smith](#)).

128 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1545 \(Mathew Wilson\)](#).

129 JAMA Canada, “[The Auto Sector in Canada: Seeking a Level Playing Field for the Japanese Auto Industry in Canada](#),” 26 September 2016.

130 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 22, 21 September 2016, [1700 \(Leah Olson\)](#).

131 Groupe Savoie, “[Recommendations to Maintain or Create New Opportunities Within our Sector](#),” 21 June 2016.

132 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1605 \(Martin Lavoie\)](#).

133 Ibid.

134 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1540 \(Scott Smith\)](#).

## RECOMMENDATION 7

**The Committee recommends that the federal government conduct a comprehensive assessment of its programs to support research, innovation and commercialization in the manufacturing sector in order to simplify those programs, quantify how well they meet their objectives, and determine whether eligibility criteria based on region or company size are still appropriate.**

### 5.2 Programs to help innovation and research and development

The National Research Council Canada's [Industrial Research Assistance Program](#) (IRAP) targets SMEs of 500 or fewer employees. Some witnesses mentioned that the program helped them to commercialize their research.<sup>135</sup> However, the officials who work for IRAP cannot be experts in all the cutting-edge technology in which SMEs are involved. Moreover, managers of SMEs have to hire experts to navigate all the government programs, which is inefficient.<sup>136</sup> IRAP could also be expanded to foster not only research, but commercialization and increased production and exporting.<sup>137</sup> The Strategic Aerospace and Defence Initiative was also mentioned as being key to these industries:

In the innovation chain, research and development programs, the strategic aerospace and defence initiative being one of them, ... are absolutely critical. We're talking big research dollars that have to go into making this kind of equipment. If we're not doing it, we're certainly not going to be world class, as we are today.<sup>138</sup>

Christyn Cianfarani  
Canadian Association of Defence and Security Industries

## RECOMMENDATION 8

**The Committee recommends that the federal government consider ways to improve the Industrial Research Assistance Program, the Strategic Aerospace and Defence Initiative, and the Technology Demonstration Program to include support for commercialization activities.**

Certain businesses no longer even try to obtain tax incentives under the [Scientific Research and Experimental Development Program](#) (SR&ED) because there is no guarantee that the tax credits will be accepted. A witness said that there was "uncertainty in getting your claims through."<sup>139</sup> The application of credits varies with the agent who processes the application,<sup>140</sup> or from one region to another.<sup>141</sup> Some businesses have had

135 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 22, 21 September 2016, [1555 \(Leah Olson\)](#).

136 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1535 \(Scott Smith\)](#).

137 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 19, 9 June 2016, [1530 \(Darrell Toma\)](#).

138 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 16, 19 May 2016, [1630 \(Christyn Cianfarani\)](#).

139 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1645 \(Martin Lavoie\)](#).

140 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1700 \(Scott Smith\)](#).

141 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1640 \(Martin Lavoie\)](#).

to reimburse claims that had initially been accepted.<sup>142</sup> One witness indicated that businesses sometimes have to seek outside professional help at a cost of \$30,000 to \$100,000 to properly fill out the application, which discourages them from doing so.<sup>143</sup> Certain witnesses believe that capital expenditures for SR&ED should be eligible for tax credits, as they were previously.<sup>144</sup>

The [Accelerated capital cost allowance for manufacturing](#) allows for deferring the payment of taxes for investments in machinery and equipment. One witness mentioned that this has enabled many Canadian manufacturing companies to invest in machinery.<sup>145</sup> According to one witness, the allowance should be re-established for oil sands, upgrading and petrochemical industries in order to support the energy sector supply chain.<sup>146</sup> Meanwhile, a witness from the automotive industry proposed making this deduction and other programs permanent, or at least extending their terms, so that investors can count on this funding for an extended period.<sup>147</sup>

## RECOMMENDATION 9

**The Committee recommends that the federal government: improve the Scientific Research and Experimental Development Program by providing ongoing, standardized training to assessment agents across the country so that eligibility criteria are interpreted consistently; expand and/or ensure that experimental development of new manufacturing processes is eligible for the program; provide ongoing seminars to teach industry how to apply for the program; and that the federal government report publicly on the changes and their impacts.**

Many Canadian manufacturing start-ups seek priority patent filing in the United States first because that market is larger, which means that some of these ideas are commercialized there.<sup>148</sup> The problem of Canadian ideas being commercialized outside of Canada due to the failure of large Canadian manufacturing companies to adopt the innovations of start-up companies, and the difficulty of attracting venture capital, were also highlighted during the Committee's visit to the District 3 Innovation Centre at Concordia University. Its representative suggested increasing R&D income tax credits and offering incentives to large companies to be the first to adopt innovations from start-up companies.

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142 Ibid., [1645](#).

143 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 22, 21 September 2016, [1555 \(Leah Olson\)](#).

144 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1640 \(Martin Lavoie\)](#).

145 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 26, 5 October 2016, [1655 \(David McInnes\)](#).

146 Alberta Chambers of Commerce, "[Strengthening Manufacturing in Alberta and Canada: Recommendations to the Standing Committee on Science, Technology and Industry](#)," brief presented to the Committee by Darrell Toma, Past Chair, Alberta Chambers of Commerce, 8 June 2016, p. 3.

147 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 27, 17 October 2016, [1705 \(Mark Nantais\)](#).

148 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1535 \(Scott Smith\)](#).

Several witnesses suggested that one solution to the lack of R&D in Canada would be to create an “innovation box,” through which preferential tax treatment would be given for “intellectual property that resides in Canada.”<sup>149</sup> A similar concept known as a “patent box” is used in countries such as the United Kingdom, Belgium and the Netherlands. It involves decreasing “the corporate income tax rate for products that are the result of commercialization of intellectual property [developed] in the country.”<sup>150</sup>

Innovation centres could serve as service centres for government programs, which would make them more accessible.<sup>151</sup> It would also be interesting to create a network of innovation centres such as the one in the United States, with 400 regional offices.<sup>152</sup> This network helps manufacturing companies to commercialize their products, adopt new technologies and develop new markets.<sup>153</sup>

## RECOMMENDATION 10

**The Committee recommends that the federal government study the best way to link the various innovation centres to create a network in which entrepreneurs could receive all the federal services available to manufacturing companies, and that it report publicly on the results.**

### 5.3 Financial assistance to teaching institutions

According to one witness, consideration should be given to more equally distributing the research funding provided to universities, which receive almost the total amount, and colleges and polytechnics, which receive very little. In reality, almost all applied research is carried out in colleges and polytechnics<sup>154</sup>, which consult the industry so that they fulfill their needs, in terms of research aimed at new products or processes:

The research services provided by colleges and institutes are highly focused on industry innovation. They meet the needs of their partners by providing access to facilities and cutting-edge equipment, and, more importantly, access to the time and expertise of professors and students. Our projects all fall in the category of “applied research”. In manufacturing, examples would include product development and enhancement, prototyping, testing, process improvement, and experimenting with new materials and equipment. There is also support for business innovation such as improving the work environment, expanding to new markets, and developing new strategies for interacting with customers and the firms in their supply chains.<sup>155</sup>

Christine Trauttmansdorff  
Colleges and Institutes Canada

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149 Ibid., [1540](#).

150 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1555 \(Martin Lavoie\)](#).

151 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 19, 9 June 2016, [1615 \(Darrell Toma\)](#).

152 Manufacturing Extension Partnership (MEP), [Who We Are](#).

153 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 19, 9 June 2016, [1535 \(Darrell Toma\)](#).

154 Ibid., [1605 \(Farzad Rayegani\)](#).

155 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 14, 12 May 2016, 1545 [\(Christine Trauttmansdorff\)](#).

On the other hand, one witness reminded the Committee that basic research is still critical, and should remain the priority of the National Research Council Canada.<sup>156</sup>

## RECOMMENDATION 11

**The Committee recommends that the federal government assess the impact of research funding that is granted to colleges and polytechnics in support of Canadian manufacturing industries; and that this analysis be made public.**

### 5.4 Financing and venture capital

At the federal level, funding for start-up companies is one of the responsibilities of the Business Development Bank of Canada (BDC). In fiscal year 2015–16, the BDC approved 202 loans to manufacturing start-ups, which is 7% of all loans provided to the manufacturing sector, representing a total of \$23 million.<sup>157</sup> Several witnesses criticized the BDC's high level of risk aversion. One witness indicated that perhaps the BDC "should be looking at ventures that potentially, in the short term, have more risk."<sup>158</sup>

Some witnesses nevertheless qualified the criticisms that might be directed at the BDC, and opportunities for improvements have been identified.<sup>159</sup> Furthermore, one BDC representative said that the agency is now working with organizations like Futurpreneur, which help young entrepreneurs, and that this relationship is working very well.<sup>160</sup> The BDC is also investing in collaboration with private venture capital funds.<sup>161</sup>

In a brief submitted to the Committee, DirectTech Solutions said that the BDC "does offer alternative business financing with potentially more favourable terms and conditions," but that it should "discontinue offering business consulting services," mostly because "[t]here is a clear conflict of interest in offering consulting by a lending institution."

The BDC can continue to play an important role in partnership with other financial institutions and sources of financing, as the guarantor or co-lender assuming more of the costs and passing on less to the entrepreneur.<sup>162</sup>

During its visit to Montreal, the Committee heard that risk aversion is cultural and is difficult to change. Access to venture capital (including for Canadian companies) is less available in Canada than in the United States.<sup>163</sup>

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156 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 23, 26 September 2016, [1620 \(Jean-Paul Deveau\)](#).

157 Business Development of Canada, document sent to the Committee as a supplement to the information in its appearance on 3 May 2016 in the context of another study.

158 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, 1 Meeting No. 13, 10 May 2016, [1730 \(Scott Smith\)](#).

159 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 21, 16 June 2016, [1625 \(Avvey Peters\)](#).

160 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 28, 19 October 2016, [1545 \(Jérôme Nycz\)](#).

161 Ibid.

162 DirectTech Solutions, "[Submission on the BDC](#)," 3 October 2016.

163 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1610 \(Michael Burt\)](#).

The financial culture of Canadian financial institutions could also be a factor:

[W]hen we're trying to adopt a brand new, unproven technology, in taking it from demo scale to commercial scale, there's a lot of risk of failure involved, and financiers don't like that. They charge a huge premium if they're even willing to touch it, so government financial support can certainly give a lot of confidence to the other financiers to get their project off the ground.<sup>164</sup>

Paul Lansbergen  
Forest Products Association of Canada

Private Canadian investment funds do not have venture capital dedicated to additive manufacturing.<sup>165</sup> Furthermore, financial institutions and the BDC don't finance start-up SMEs enough:

One of the biggest issues of our spin-outs, I think, as an SME—we're asking not-for-profit organizations, etc., to spin out companies—is that the financial institutions and the crown corporations such as BDC don't really finance SMEs with short track records. Essentially, we're making it very difficult to survive that valley of death, with few venture capital investment opportunities, because VCs look for big home runs—drug molecules, etc. They show very little interest in manufacturing, in terms of a venture capital spin.<sup>166</sup>

Martin Petrak  
Precision ADM

Members of the Committee feel that the role, culture and actions of the BDC and the private chartered banks regarding financing of start-ups or SMEs, in the manufacturing and other sectors of the economy, warrant further study, including the role of banking regulations as regards to venture capital.

As an alternative source of access to funding, angel investors constitute a community that is seeking to increase in number and to organize into a network.

[A]ngel investors are high-net-worth individuals who are usually former entrepreneurs or professionals. They depend on social networks to identify entrepreneurs or investments they want to make. They're usually locally focused, but they enjoy investing in early-stage high-risk companies, something that is often seen as rare in the Canadian marketplace.<sup>167</sup>

Yuri Navarro  
National Angel Capital Organization

One witness mentioned that there is a [tax credit](#) in British Columbia for venture capital investments in small businesses.<sup>168</sup>

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164 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 15, 17 May 2016, [1700 \(Paul Lansbergen\)](#).

165 Precision ADM, "[Advanced Digital Manufacturing](#)," brief presented to the House of Commons Standing Committee on Industry, Science and Technology by Martin Petrak, 9 June 2016, p. 3.

166 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 19, 9 June 2016, [1540 \(Martin Petrak\)](#).

167 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 24, 28 September 2016, [1635 \(Yuri Navarro\)](#).

168 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 21, 16 June 2016, [1600 \(Victoria Lennox\)](#).

## RECOMMENDATION 12

The Committee recommends that the federal government identify how the Business Development Bank of Canada (BDC) can play a more active role in developing manufacturing companies from start-up through to commercialization; and that the performance of this initiative be included in BDC's annual report.

### 5.5 Sectoral programs

Some federal sectoral programs, such as the [Investments in Forest Industry Transformation](#) program, can accelerate the innovation process in specific sectors.<sup>169</sup>

Certain witnesses feel that the [Automotive Innovation Fund](#) should be extended, but in a modified form. In particular, the contributions should be made non-refundable and the total budgetary envelope should be increased so that the grants are more competitive with what is being done in other jurisdictions.<sup>170</sup>

### 5.6 Large businesses

During its visit to Montreal, the Committee heard representatives from large businesses discuss their needs in terms of government assistance to solidify client confidence and increase liquidities during the maturity phase, when they have to manufacture products before they have sufficient revenues.

For example, representatives from Bombardier claimed that numerous countries support their aerospace companies (Boeing, Airbus, Embraer, etc.) through direct participation in company ownership, grants or tax relief.

Witnesses who were asked about potential federal government participation in Bombardier had different opinions, with some supporting the idea<sup>171</sup> and others favouring more support for SMEs.<sup>172</sup>

If you were to fund multiple SMEs or medium-sized companies with \$10 million to grow their business, there could be a huge impact that would be much larger in terms of number of jobs created and opportunities.<sup>173</sup>

Martin Petrak  
Precision ADM

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169 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 15, 17 May 2016, [1655 \(Paul Lansbergen\)](#).

170 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 20, 14 June 2016, [1605 \(Dianne Craig\)](#) and [1705 \(Jerry Dias\)](#).

171 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 19, 9 June 2016, [1650 \(Farzad Rayegani\)](#).

172 Ibid., [1650 \(Martin Petrak\)](#) and [1650 \(Darrell Toma\)](#).

173 Ibid., [1650 \(Martin Petrak\)](#).

## 5.7 Regulations and standards

Several witnesses commented that regulations and standards are very stringent in Canada.<sup>174</sup> According to one witness, the government should consult industry more when developing regulations, as they have an enormous impact.<sup>175</sup> Regulations represent a challenge for manufacturing businesses, even for those not willing to export products:

We have many barriers in Canada among provinces that restrict our company size in certain industries. That's a problem, and we've got to deal with it. It's been on the books since 1995 or so. These things prevent us from being competitive, and I think that the message of competitiveness is fundamental. Canada is a trading nation. We want to trade. We've got to be prepared, and some of these barriers are in front of us.<sup>176</sup>

Darrell Toma  
Chambers of Commerce of Alberta

[W]e have challenges surrounding interprovincial intertie. It's easier to send electricity to the U.S. than it is to send across provinces.<sup>177</sup>

Scott Smith  
Canadian Chamber of Commerce

Certainly in terms of trade barriers, internal trade is a key issue, and for any processing company, having consistent rules and regulations across the provinces is critically important. We see that being critically important in terms of attracting foreign investment into Canada. Understanding the rules of the game between each province and having some kind of level playing field as we move products across the country is important.<sup>178</sup>

Andrea Johnston  
Department of Agriculture and Agri-Food

However, while Canadian regulations are considered stringent, they are sometimes helpful for selling Canadian products abroad, as they help create a good reputation:

Studies have found that we have among the most stringent regulatory regimes in the world.... When we're trying to sell our products around the world, the Canada brand is very important. It doesn't get a premium, but in a price tie, it might win us the day. That's important.<sup>179</sup>

Paul Lansbergen  
Forest Products Association of Canada

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174 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 29, 24 October 2016, [1605 \(Bob Masterson\)](#).

175 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 25, 3 October 2016, [1635 \(Pierre Richard\)](#).

176 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 19, 9 June 2016, [1615 \(Darrell Toma\)](#).

177 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1610 \(Scott Smith\)](#).

178 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 26, 5 October 2016, [1610 \(Andrea Johnston\)](#).

179 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 15, 17 May 2016, [1650 \(Paul Lansbergen\)](#).

Perhaps the most important factors in maintaining and expanding access to foreign markets are the efficacy of the food safety system in Canada and the credibility of the competent authority, which is the CFIA [Canadian Food Inspection Agency].

Lyzette Lamondin  
Canadian Food Inspection Agency

The representative of the Canadian Food Inspection Agency also mentioned that a new regulatory framework for food safety will be implemented that will replace 13 sets of regulations with one.<sup>180</sup>

Harmonization of standards and regulations is an important factor of success for the manufacturing sector. One witness mentioned that priority should be placed on harmonizing standards internationally, for example in the food industry, which would favour the Canadian industry because it already has very high standards.<sup>181</sup> The representative of the Canadian Food Inspection Agency explained that the agency is working to harmonize its regulations with those of other countries.

According to one witness, the harmonization of automotive industry regulations is a good example to follow.<sup>182</sup>

In terms of regulatory harmonization, a good example would be how the automotive sector has been able to harmonize regulations for vehicle sales across North America, whereas 25 years ago the emissions regulations and standards were different. It's about solving some of those problems across the board.<sup>183</sup>

Scott Smith  
Canadian Chamber of Commerce

Sanofi Genzyme (see Appendix A) explained that unlike the U.S. Food and Drug Administration and the European Medicines Agency, Health Canada does not have an innovation mandate, but simply a protection of health safety mandate.

According to the Aerospace Industries Association of Canada, the lack of employees for certifying compliance in Transport Canada's (TC) Civil Aviation branch can slow down the delivery of its members' products.<sup>184</sup> In a brief submitted to the Committee, Discovery Air Defence mentioned that "a lack of resources within TC has resulted in a decline of *Civil Aviation Service Standards Activities*, in particular the [l]evels of [s]ervice required to oversee and support Discovery Air Defence's specialized air operations."<sup>185</sup>

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180 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 26, 5 October 2016, [1600 \(Lyzette Lamondin\)](#).

181 Ibid., [1640 \(David McInnes\)](#).

182 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 13, 10 May 2016, [1645 \(Scott Smith\)](#).

183 Ibid.

184 Aerospace Industries Association of Canada, [Brief presented to the Standing Committee on Industry, Science and Technology](#), 17 October 2016.

185 Discovery Air Defence, [Briefing note to the Standing Committee on Industry, Science and Technology](#), 7 November 2016.

## RECOMMENDATION 13

**The Committee recommends that the federal government: regularly review its regulations; ensure that federal regulatory authorities have the necessary resources to quickly approve products requiring certification; play a leadership role in an inter-provincial process aimed at greater harmonization of provincial and territorial standards and regulations to encourage domestic trade; and continue its efforts for better harmonization with international standards in order to encourage international trade.**

### 5.8 Federal government procurement

The federal government can foster innovation and the promotion of Canadian manufacturers' products through its procurement policies.<sup>186</sup> For example, it could demand greener,<sup>187</sup> or more innovative<sup>188</sup> products, for which patents were developed in Canada. But according to one witness:

[Public Services and Procurement Canada] has its own fairness scale which makes the process too convoluted. It pays no heed to the Canadian content or development of the Canadian [high tech] SMEs.<sup>189</sup>

One witness highlighted the importance of federal government procurement on the defence industry:

[T]he growth potential for defence manufacturing is highly sensitive to federal government actions or inaction. Federal government policies and programs, especially procurement decisions, influence heavily, if not determine outright, our sector's growth path.<sup>190</sup>

Christyn Cianfarani  
Canadian Association of Defence and Security Industries

A representative from the Department of National Defence explained to the Committee that even if efforts could be made to buy more from Canadian manufacturers, and this could be done for reasons of national security, it is important to continue to buy internationally. If the federal government considered buying more Canadian defence products: "Canada being a reasonably small player on the international scene, it would restrict access to technologies that are game-changers for the Canadian Forces."<sup>191</sup>

A representative of Public Services and Procurement Canada spoke about the success of the [Build in Canada Innovation Program](#), which helps companies in the pre-

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186 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 17, 31 May 2016, [1550 \(Mathew Wilson\)](#).

187 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 15, 17 May 2016, [1625 \(Joseph Galimberti\)](#).

188 Ibid., [1625 \(Iain Christie\)](#).

189 Harinda Ahluwalia, President, Info-Electronics Systems Inc., "[Problems in Procurement Process and Need for Improvement](#)," 26 July 2016.

190 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 16, 19 May 2016, [1545 \(Christyn Cianfarani\)](#).

191 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 30, 26 October 2016, [1630 \(Marc Fortin\)](#).

commercialization period to sell prototypes of their products to federal departments, which can test them, suggest changes, and eventually buy them in greater quantity, giving these businesses their first big client and a reference they can use with other potential clients.<sup>192</sup>

The representative also spoke of the American program called [Small Business Innovation Research](#), which legislatively requires the 11 largest American departments to set aside a certain percentage of their R&D spending to purchase innovative products from the private sector, each in its particular field.<sup>193</sup>

#### **RECOMMENDATION 14**

**The Committee recommends that the federal government implement a procurement strategy that encourages procurement of innovative Canadian goods and services.**

### **5.9 Difficulties specific to the manufacturing sector in rural settings**

It appears that some businesses in rural settings know less about government assistance programs than those in urban settings:

We have urban and rural manufacturers. Urban manufacturers in Alberta, in Edmonton, Calgary, and Red Deer tend to be fairly well serviced, and they are in the pipeline of information on IRAP [Industrial Research Assistance Program] and BDC, and so on. However, in rural Alberta a lot of them are not aware of those kinds of programs, frankly. Awareness is one of the challenges.<sup>194</sup>

Darrell Toma  
Alberta Chambers of Commerce

#### **RECOMMENDATION 15**

**The Committee recommends that the federal government better inform manufacturing companies and potential entrepreneurs in rural areas about federal programs.**

One witness mentioned that “[i]n a digital world, innovation is everywhere.”<sup>195</sup> However, digital technology still has to be accessible and affordable. Several witnesses claimed that broadband connectivity in rural communities is deficient, and this poses difficulties for businesses.<sup>196</sup>

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192 Ibid., [1655 \(Desmond Gray\)](#).

193 Ibid., [1630](#).

194 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 19, 9 June 2016, [1615 \(Darrell Toma\)](#).

195 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 30, 26 October 2016, [1710 \(Desmond Gray\)](#).

196 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 23, 26 September 2016, [1635 \(Stephen Brown\)](#).

## RECOMMENDATION 16

**The Committee recommends that the federal government explore ways to continue to expand and improve broadband connectivity in rural areas in order to promote the growth of the manufacturing sector in rural areas.**

### 5.10 Other measures

The federal government, provinces and territories recently announced a [Canada Pension Plan \(CPP\) enhancement](#). This should translate into a one percentage point increase, from 4.95% to 5.95%, in the employer and employee contribution rates to the CPP, implemented gradually between 2019 and 2023. One witness referred to this increase as “adding costs that would not be present in other jurisdictions.”<sup>197</sup>

Another witness recognized Canada’s skilled workforce as a benefit over labour costs:

We have to take advantage of Canada's assets, and what's our biggest thing? We have a skilled workforce. Why? We have high education, medicare, and we have so much going for us that we need to take advantage of it. One of the issues that was raised, and that I want to finish on, is the whole issue of labour costs. Five per cent of the cost of a car is labour.<sup>198</sup>

Jerry Dias  
Unifor

Witnesses also discussed price on carbon dioxide (CO<sub>2</sub>) emissions. The provinces and territories can decide to impose their own pricing – some are already doing so – and determine how to use the revenues. Otherwise, they can choose the same method as the federal government.<sup>199</sup> Some witnesses expressed their concern that Canadian manufacturing companies would no longer be able to compete with businesses located in countries where such pricing does not exist:

We've spent years working with the provinces. Ontario is going down a cap-and-trade route, as is Quebec. B.C. has a carbon price. Alberta has an approach that's a hybrid, with a carbon tax plus regulatory requirements and performance standards. There is a concern that just as we are coming to grips with how those are going to work and how we can make our own contributions within those systems, there is something else on top. How the federal efforts will work with the provinces is a key point of concern for us at this time.<sup>200</sup>

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197 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 27, 17 October 2016, [1535 \(Mark Nantais\)](#).

198 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 20, 14 June 2016, [1635 \(Jerry Dias\)](#).

199 Government of Canada, “[Government of Canada proposes pan-Canadian pricing for carbon pollution](#),” 3 October 2016.

200 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 29, 24 October 2016, [1605 \(Bob Masterson\)](#).

... [C]arbon pricing is but one cost of production. There is absolutely nothing wrong with the approach Canada is taking, but we have to remember that it's one more cost at a time when competitors aren't putting that cost in.<sup>201</sup>

Bob Masterson  
Chemistry Industry Association of Canada

Another witness said “it benefits to source the cleanest, most GHG [greenhouse gas]-efficient inputs possible.”<sup>202</sup> It is too early to measure the net impact of these changes.

## **RECOMMENDATION 17**

**The Committee recommends that the federal government identify the business opportunities and challenges to a significant portion of the manufacturing sector, due to the implementation of the Pan-Canadian Framework on Clean Growth and Climate Change, once the provincial and territorial governments have indicated their respective approaches to this.**

**The Committee further recommends that the federal government commit to monitoring closely the development and implementation of the proposed changes to both the Canada Pension Plan and carbon pricing on the manufacturing sector in Canada.**

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201 Ibid., [1620](#).

202 INDU, *Evidence*, 1<sup>st</sup> Session, 42<sup>nd</sup> Parliament, Meeting No. 15, 17 May 2016, [1625 \(Joseph Galimberti\)](#).



## CHAPTER SIX: CONCLUSION

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The Canadian manufacturing sector, similar to that in numerous other advanced economies, lost some share of its jobs in recent decades.

During this study, several witnesses claimed that disruptive technologies, such as robotics, artificial intelligence and 3-D printing, can quickly change the manufacturing sector, and may require some industries to adapt rapidly. This represents growth opportunities for the manufacturing sector in Canada, given its high skill levels, but they must be seized quickly.

The Committee would like a strategy for the manufacturing sector to be developed quickly, based on this report and other consultations that have been conducted by industry, to take advantage of these opportunities. Among other things, federal programs for supporting the manufacturing sector must be assessed and adapted; high quality labour market information must be available in order to ensure Canada has all the necessary talent; dialogue and exchanges between academia and manufacturing companies must be increased; and, better access to venture capital and financing must be promoted in order to better commercialize our ideas.



# LIST OF RECOMMENDATIONS

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## RECOMMENDATION 1

The Committee recommends that the federal government develop a strategy for the Canadian manufacturing sector based on the recommendations in this report. This strategy should include clear objectives and timelines for the Canadian manufacturing sector in terms of production, employment and exports. Regular progress reports should be published to identify achievements to date, as well as any corrections that may be required..... 11

## RECOMMENDATION 2

The Committee recommends that the federal government improve the labour market information it produces, notably connecting jobs in occupations in demand (such as in the sciences and specialized trades), locally and at the national level, with skills available with job seekers. .... 14

## RECOMMENDATION 3

The Committee recommends that the federal government establish sector councils in order to make students and post-secondary institutions more aware of what skills are required by manufacturing businesses, advanced manufacturing, in emerging fields that will be important to Canada's growth. These sector councils could be tasked to work with local educational institutions to create streams to employment, including work experience for students, and share best practices on processes and innovation as well as promoting investment. .... 14

## RECOMMENDATION 4

The Committee recommends that the federal government increase options to address labour shortages: above all, by promoting on-the-job-training of Canadian and prospective employees, either through an increase in the Canada Job Grant or other means; also, by examining the possibility of using the Temporary Foreign Worker Program as a gateway to permanent immigration; and by expediting the process through which foreign students can become permanent residents, as a way to attract and retain top talent and skilled workers..... 16

**RECOMMENDATION 5**

The Committee recommends that the federal government explore ways to create an index of existing patents in Canadian post-secondary institutions so they can be readily identified by industry, and explore ways to promote and encourage the transfer of intellectual property from post-secondary institutions to Canadian industry. .... 20

**RECOMMENDATION 6**

The Committee recommends that the federal government consider all pertinent information regarding predicted impacts for Canada in terms of employment and production, by industry, when considering signing trade agreements. .... 23

**RECOMMENDATION 7**

The Committee recommends that the federal government conduct a comprehensive assessment of its programs to support research, innovation and commercialization in the manufacturing sector in order to simplify those programs, quantify how well they meet their objectives, and determine whether eligibility criteria based on region or company size are still appropriate. .... 26

**RECOMMENDATION 8**

The Committee recommends that the federal government consider ways to improve the Industrial Research Assistance Program, the Strategic Aerospace and Defence Initiative, and the Technology Demonstration Program to include support for commercialization activities. .... 26

**RECOMMENDATION 9**

The Committee recommends that the federal government: improve the Scientific Research and Experimental Development Program by providing ongoing, standardized training to assessment agents across the country so that eligibility criteria are interpreted consistently; expand and/or ensure that experimental development of new manufacturing processes is eligible for the program; provide ongoing seminars to teach industry how to apply for the program; and that the federal government report publicly on the changes and their impacts. .... 27

**RECOMMENDATION 10**

The Committee recommends that the federal government study the best way to link the various innovation centres to create a network in which entrepreneurs could receive all the federal services available to manufacturing companies, and that it report publicly on the results..... 28

**RECOMMENDATION 11**

The Committee recommends that the federal government assess the impact of research funding that is granted to colleges and polytechnics in support of Canadian manufacturing industries; and that this analysis be made public. .... 29

**RECOMMENDATION 12**

The Committee recommends that the federal government identify how the Business Development Bank of Canada (BDC) can play a more active role in developing manufacturing companies from start-up through to commercialization; and that the performance of this initiative be included in BDC’s annual report. .... 31

**RECOMMENDATION 13**

The Committee recommends that the federal government: regularly review its regulations; ensure that federal regulatory authorities have the necessary resources to quickly approve products requiring certification; play a leadership role in an inter-provincial process aimed at greater harmonization of provincial and territorial standards and regulations to encourage domestic trade; and continue its efforts for better harmonization with international standards in order to encourage international trade..... 34

**RECOMMENDATION 14**

The Committee recommends that the federal government implement a procurement strategy that encourages procurement of innovative Canadian goods and services..... 35

**RECOMMENDATION 15**

The Committee recommends that the federal government better inform manufacturing companies and potential entrepreneurs in rural areas about federal programs. .... 35

**RECOMMENDATION 16**

**The Committee recommends that the federal government explore ways to continue to expand and improve broadband connectivity in rural areas in order to promote the growth of the manufacturing sector in rural areas. .... 36**

**RECOMMENDATION 17**

**The Committee recommends that the federal government identify the business opportunities and challenges to a significant portion of the manufacturing sector, due to the implementation of the Pan-Canadian Framework on Clean Growth and Climate Change, once the provincial and territorial governments have indicated their respective approaches to this.**

**The Committee further recommends that the federal government commit to monitoring closely the development and implementation of the proposed changes to both the Canada Pension Plan and carbon pricing on the manufacturing sector in Canada. .... 37**

# APPENDIX A LETTER FROM SANOFI GENZYME

## Health Canada does not prioritize innovation

Innovation Mandate



... FDA is also responsible for advancing the public health **by helping to speed innovations that make medicines more effective, safer, and more affordable** and by helping the public get the accurate, science-based information they need to use medicines and foods to maintain and improve their health. ....

<http://www.fda.gov/AboutFDA/WhatWeDo/default.htm>



... **Facilitate development and access to medicines**

EMA is committed to **enabling timely patient access to new medicines, and plays a vital role in supporting medicine development for the benefit of patients.**

The Agency uses a wide range of regulatory mechanisms to achieve these aims, which are continuously reviewed and improved. ...

[http://www.ema.europa.eu/ema/index.jsp?curl=pages/about\\_us/general/general\\_content\\_000091.jsp&mid=WCobo1aco580028a42](http://www.ema.europa.eu/ema/index.jsp?curl=pages/about_us/general/general_content_000091.jsp&mid=WCobo1aco580028a42)

Protection Mandate



The Health Products and Food Branch (HPFB)'s mandate is to take an integrated approach to **managing the health-related risks and benefits of health products and food** by:

- minimizing health risk factors to Canadians while maximizing the safety provided by the regulatory system for health products and food; and,
- promoting conditions that enable Canadians to make healthy choices and providing information so that they can make informed decisions about their health.

<http://www.hc-sc.gc.ca/ahc-asc/branch-dirgen/hpfb-dgpsa/index-eng.php>

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## APPENDIX B LIST OF WITNESSES

Organizations and Individuals	Date	Meeting
<b>Canadian Chamber of Commerce</b> Scott Smith, Director Intellectual Property and Innovation Policy	2016/05/10	13
<b>Conference Board of Canada</b> Michael Burt, Director Industrial Economic Trends		
<b>Colleges and Institutes Canada</b> Christine Trauttmansdorff, Vice-President Government Relations and Canadian Partnerships	2016/05/12	14
<b>Georgian College</b> MaryLynn West-Moynes, President and Chief Executive Officer		
<b>Universities Canada</b> Paul Davidson, President and Chief Executive Officer		
<b>Aerospace Industries Association of Canada</b> Iain Christie, Executive Vice-President	2016/05/17	15
<b>Canadian Steel Producers Association</b> Joseph Galimberti, President		
<b>Forest Products Association of Canada</b> Paul Lansbergen, Vice-President Regulations and Partnerships		
<b>Automotive Industries Association of Canada</b> Jean-François Champagne, President	2016/05/19	16
<b>Canadian Association of Defence and Security Industries</b> Christyn Cianfarani, President		
<b>Canadian Cosmetic, Toiletry and Fragrance Association</b> Darren Praznik, President and Chief Executive Officer Beta Montemayor, Director Environmental, Science and Regulation		
<b>Canadian Labour Congress</b> Chris Roberts, National Director Social and Economic Policy	2016/05/31	17

<b>Organizations and Individuals</b>	<b>Date</b>	<b>Meeting</b>
<b>Canadian Manufacturers and Exporters</b> Martin Lavoie, Director Policy, Innovation and Productivity Mathew Wilson, Senior Vice-President	2016/05/31	17
<b>Alberta Chambers of Commerce</b> Darrell Toma, Past Chair	2016/06/09	19
<b>Polytechnics Canada</b> Farzad Rayegani, Director Centre for Advanced Manufacturing and Design Technologies, Sheridan College		
<b>Precision ADM</b> Martin Petrak, President and Chief Executive Officer		
<b>Electra Meccanica Vehicles</b> Jerry Kroll, Chief Executive Officer	2016/06/14	20
<b>Ford Motor Company of Canada Limited</b> Dianne Craig, President and Chief Executive Officer Caroline Hughes, Vice-President Government Relations Steve Majer, Vice-President Human Resources		
<b>Unifor</b> Jerry Dias, National President Kaylie Tiessen, National Representative Research Department		
<b>Communitech</b> Avvey Peters, Vice-President External Relations	2016/06/16	21
<b>Futurpreneur Canada</b> Julia Deans, Chief Executive Officer		
<b>Startup Canada</b> Victoria Lennox, Co-Founder and Chief Executive Officer		
<b>Agricultural Manufacturers of Canada</b> Leah Olson, President	2016/09/21	22
<b>University of Waterloo</b> Pearl Sullivan, Dean Faculty of Engineering		

<b>Organizations and Individuals</b>	<b>Date</b>	<b>Meeting</b>
<b>Acadian Seaplants Limited</b> Jean-Paul Deveau, President and Chief Executive Officer	2016/09/26	23
<b>Deloitte</b> Stephen Brown, Managing Partner Consumer and Industrial Products		
<b>Entertainment Software Association of Canada</b> Jayson Hilchie, President and Chief Executive Officer	2016/09/28	24
<b>National Angel Capital Organization</b> Yuri Navarro, Chief Executive Officer and Executive Director		
<b>Intellectual Property Institute of Canada</b> Jeffrey Astle, Past President Michel Gérin, Special Advisor	2016/10/03	25
<b>Quebec Furniture Manufacturers' Association</b> Pierre Richard, President and Chief Executive Officer QFMA, Canadian Furniture Show Réjean Poitras, Vice-President Board of Administration, President and Executive Officer, Amisco		
<b>Canadian Agri-Food Policy Institute</b> Ted Bilyea, Chair Board of Directors David McInnes, President and Chief Executive Officer	2016/10/05	26
<b>Canadian Food Inspection Agency</b> Lyzette Lamondin, Acting Executive Director Food Import, Export and Consumer Protection Directorate		
<b>Department of Agriculture and Agri-Food</b> Andrea Johnston, Director General Sector Development and Analysis Directorate, Market and Industry Services Branch		
<b>Food and Consumer Products of Canada</b> Carla Ventin, Vice-President Federal Government Affairs		
<b>Automotive Parts Manufacturers' Association</b> Flavio Volpe, President	2016/10/17	27
<b>Canadian Vehicle Manufacturers' Association</b> Mark Nantais, President		

<b>Organizations and Individuals</b>	<b>Date</b>	<b>Meeting</b>
<p><b>Business Development Bank of Canada (BDC)</b></p> <p>William Ciprick, Senior Vice President High-Impact Firms</p> <p>Jérôme Nycz, Executive Vice-President BDC Capital</p> <p>Susan Rohac, Vice-President Growth and Transition Capital, Ontario and Atlantic, BDC Capital</p> <p><b>Canadian Meat Council</b></p> <p>Ron Davidson, Director International Trade, Government and Media Relations</p> <p>Troy Warren, President and Chair of the Board of Directors</p> <p><b>Confection 4e Dimension Itée</b></p> <p>Michel St-Amand, President</p> <p><b>United Steelworkers</b></p> <p>Shaker Jamal, Research Representative National Office</p> <p>Ken Neumann, National Director for Canada</p>	2016/10/19	28
<p><b>Business Development Bank of Canada (BDC)</b></p> <p>Neal Hill, Vice-President Market Development, BDC Capital</p> <p>Karen Kastner, Vice-President Partnerships and Government Relations</p> <p>Susan Rohac, Vice-President Growth and Transition Capital, Ontario and Atlantic, BDC Capital</p> <p><b>Chemistry Industry Association of Canada</b></p> <p>Pierre Gauthier, Vice-President Public Affairs</p> <p>Bob Masterson, President and Chief Executive Officer</p>	2016/10/24	29
<p><b>Department of Industry</b></p> <p>Paul Halucha, Assistant Deputy Minister Strategic Policy Sector</p> <p>Gerard Peets, Director General Manufacturing and Life Sciences Branch, Industry Sector</p> <p>Jeff Waring, Senior Director Industrial Technological Benefits Branch, Industry Sector</p>	2016/10/26	30
<p><b>Department of National Defence</b></p> <p>Marc Fortin, Assistant Deputy Minister Science and Technology</p>	2016/10/26	30

Organizations and Individuals	Date	Meeting
<p><b>Department of Public Works and Government Services</b></p> <p>Sylvain Cyr, Director General Land and Aerospace Equipment Procurement and Support Sector</p> <p>Desmond Gray, Director General Office of Small and Medium Enterprises and Strategic Engagement</p>	2016/10/26	30



# APPENDIX C LIST OF BRIEFS

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## Organizations and Individuals

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Acadian Seaplants Limited  
Aerospace Industries Association of Canada  
Alberta Chambers of Commerce  
Canadian Home Furnishings Alliance  
Canadian Nuclear Association  
Canadian Vehicle Manufacturers' Association  
Dairy Processors Association of Canada  
DirectTech Solutions  
Discovery Air Defence  
Electra Meccanica Vehicles  
Entertainment Software Association of Canada  
Gaspard, Valencia  
Groupe Savoie Inc.  
Info-Electronics Systems Inc.  
Intellectual Property Institute of Canada  
Japan Automobile Manufacturers Association of Canada  
Memorial University of Newfoundland  
Precision ADM  
Quebec Furniture Manufacturers' Association  
Unifor  
United Steelworkers  
University of Waterloo  
Xemplar Inc.



# REQUEST FOR GOVERNMENT RESPONSE

Pursuant to Standing Order 109, the Committee requests that the government table a comprehensive response to this Report.

A copy of the relevant *Minutes of Proceedings* ([Meetings Nos. 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 34, 35, 37, 38, 39, 40, 41, 42, 43, 49, 53 and 59](#)) is tabled.

Respectfully submitted,

Dan Ruimy  
Chair



## NDP SUPPLEMENTARY OPINION

**Brian Masse M.P.**

**Windsor West**

**NDP Innovation, Science and Economic Development Critic**

### SECTOR INITIATIVES

In the past decade alone, thousands of jobs have disappeared from the Canadian manufacturing landscape in all sectors. Despite the numerous reasons for these losses, it is vital to address that each manufacturing sector in Canada plays an important role in keeping the economy vibrant nationally and at the local level. We agree that an overall manufacturing strategy is good for Canada. However, some sectors require their own strategy immediately for growth opportunities to maximize potential in the emergency of new technologies and disruptor challenges. The NDP fully supports any and all actions to help make Canadian manufacturing dynamic again and therefore, the NDP recommends,

**That the Government of Canada develop sector based strategies for the manufacturing sector where specific industry concerns and challenges are addressed collaboratively with representatives including the businesses, provinces, municipalities, labour, academia and all other stakeholders specific to each sector.**

For example, a National Automotive Strategy would allow the automotive sector including tool and mold and parts manufacturers, to move forward with innovation, research, funding, import/ export and tax initiatives discussed and considered by all stakeholders to ensuring the best possible plan is devised specific to this sector. By engaging all of the stakeholders in one sector, the Government could then properly take action on the most important items to the stakeholders.

Further, regularly meeting and collaborating with the sector stakeholders would allow for beneficial changes to be made during economic uncertainty or when other factors affecting the sector pose a threat.

### SECURING – MAINTAINING INVESTMENTS AND A PATH TO GREEN FIELD INVESTMENT

Witnesses testified that Export Development Canada (EDC) did not have the tools to recruit and retain investment within Canada. Concerns about Government red tape that potential manufacturing investors face when looking at facility investments has hindered growth and has lost potential investments to other nations.

Furthermore, in 2014 Mexico attracted and secured 366 green field investments by offering competitive concessions to prospective investors.<sup>1</sup> In April 2015 Toyota announced their green field investment of \$1.5 billion in one manufacturing hub in Mexico.

The NDP therefore recommends,

**That the Government of Canada develops investment incentives that are efficient, competitive and that allow for effective tax policies that can compete with other nations vying for similar investments. And, further, that Export Development Canada (EDC), in a manner consistent with its arms-length commercial status, is given a stronger mandate to recruit and retain investments in Canadian manufacturing. And, that the Government of Canada begins promoting green field investment opportunities to remain competitive with especially Mexico and the United States.**

## **SUPPORTING INDUSTRY-UNIVERSITY PARTNERSHIPS**

This report links the importance of post-secondary education to the manufacturing sector in a variety of ways but does not specifically recommend the need to continue funding the Centres of Excellence that were established over the last decade. Many of these programs, including AUTO21 Network of Centres of Excellence based out of the University of Windsor, researched and worked directly with manufacturers to bring innovative products to the Canadian and global market. These research centres attracted the top talent, created work for Canadian researchers, skilled trades and students, and provided innovative products through networks of established researchers, businesses and manufacturers across the country.<sup>2</sup> The NDP recommends,

**That the Government of Canada continue funding the Network Centres of Excellence, and provide more funding for the manufacturing sector Centres. And, that the Government promote these Centres of Excellence to prospective investors to highlight the innovation and talent that Canada provides to its manufacturing sector via these Network Centres of Excellence.**

## **CREATING FIRM TIMELINES AND MEASUREMENT**

The NDP recommends,

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<sup>1</sup> Financial Times International Report cited at: <http://www.theyucatanimes.com/2015/10/foreign-investors-are-choosing-mexico-over-brazil/> and <https://mexicoinstitute.wordpress.com/tag/fdi/>

<sup>2</sup> For a list of AUTO21 Accomplishments see: <http://windsorstar.com/business/local-business/a-look-back-at-15-years-of-research-and-innovation-at-auto21>

**That the Government of Canada creates firm timelines, with a goal of immediate action, on the recommendations in this report including the supplementary recommendations provided here. And that the Government further devise an annual measurement system for each manufacturing sector in Canada with a focus on, but not limited to, employment, skills training, investment and innovation. And that the Minister of Innovation, Science and Economic Development table the findings in the House of Commons.**

