

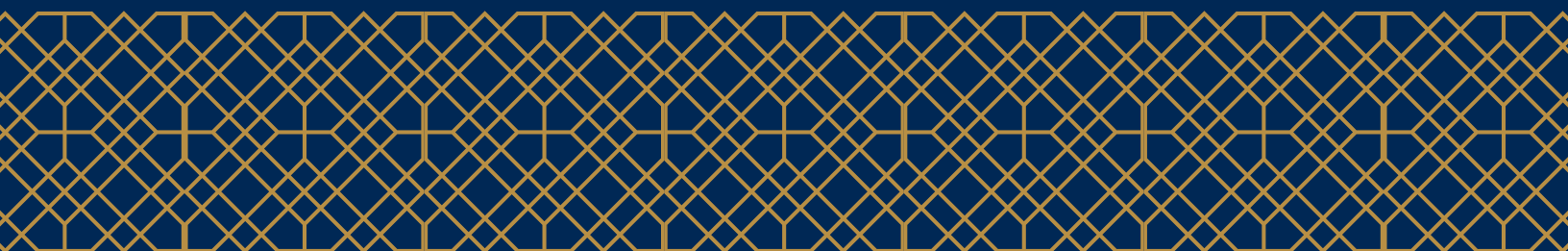


uOttawa

Skills and Innovation

A Summary of Proceedings

Winter 2017



About this Document

The Institute of Fiscal Studies and Democracy (IFSD) is a Canadian think-tank sitting at the nexus of public finance and state institutions. Fiscal ecosystems include governments, legislatures, the public administration and other key actors and institutions in our political and economic life. This ecosystem, rooted in hundreds of years of political history and economic development, is composed of an intertwined set of incentives, public and private information and a complex and sometimes opaque set of rules and processes based on constitutional law, legislative law, conventions and struggles for power. The actors within this system depend on one another as well as the robustness and transparency of information and processes, all underpinned by a society's standards of accountability. It is at this dynamic intersection of money and politics that the Institute of Fiscal Studies and Democracy @uOttawa aims to research, advise, engage and teach. The IFSD has been funded by the Province of Ontario to undertake applied research and student engagement in public finance and its intersection with public administration, politics and public policy. The IFSD undertakes its work in Canada at all levels of government as well as abroad, leveraging partnerships and key relationships with organizations such as the World Bank, OECD, IMF and US National Governors Association.

The Institute of Fiscal Studies and Democracy (IFSD) at the University of Ottawa in collaboration with the United States National Governors Association (NGA) convened a one-day working group meeting on the topic of labour market policies and programs, an area of joint federal and sub-national government intervention in both countries. The meeting's proceedings are included in this report (without attribution, in accordance with Chatham House Rules). This report was prepared by Helaina Gaspard, Director, Democratic Institutions, under the direction of Kevin Page. This report was edited and designed by Jessica Rached. The IFSD wishes to thank Paul Baker, Ulrich Hilpert and Meghan E. Wills for their comments on an earlier draft. The final report and any errors or omissions rest solely with the IFSD.

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Skills & Innovation

Abstract

With labour market policies and programs an area of joint federal and sub-national government intervention in both Canada and the U.S., the Institute of Fiscal Studies and Democracy (IFSD) at the University of Ottawa in collaboration with the United States National Governors Association (NGA) convened a one-day working group meeting on the topic. An invited group of 35 expert researchers, practitioners, executive public servants, industry and labour leaders, and political staff from Canada, the United States, and Germany (see Annex 1 for the participant list) discussed and debated the linkages between workforce development and innovation, while exploring the German training model and the Siemens Canada pilot project as case studies (see Annex 2 for the agenda). The proceedings coalesced around the importance of investing in skills to promote innovation. This means redefining innovation as a continued and renewable means driven by people to do better and engaging key actors like government, industry and labour for progress. Models and practices from countries like Germany and companies such as Siemens Canada demonstrate the benefits of collaboration and investment in workers' skills for more efficient and effective outcomes.

The following questions guided the conversation:

- What is **innovation**? How is it connected to **skills**?
- What are the factors national and sub-national governments should consider when rethinking **labour market programming**?
- What specific roles should government, labour, and industry play in **workforce development and innovation**? Who are potential **partners**?
- What lessons can be learned from leading jurisdictions such as **Germany**?
- What would it take to implement **a national multi-party workforce development program** linked to a **high-growth economy**? What are the impediments to implementing such a plan?

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Labour market policy, as McIntosh (2000) explains, “sits (sometimes uncomfortably) at the nexus of social and economic policy” (p. 2). These policies and programs can serve as safety nets by guarding against unfortunate or unforeseen circumstances (e.g. employment insurance, disability/injury insurance). They may also serve as springboards to foster economic growth and development (e.g. skills training, industry consultations/collaborations). Which element of labour market policy to pursue and how to pursue it—as with any public policy—is a question of trade-offs. For instance, is it feasible to develop socially progressive skills and workforce training policy that drive economic development?

In Canada and in the United States, there has been political impetus—albeit from different sources—to consider how a skilled workforce can impact economic opportunities and the potential for innovation. Speaking collectively through the Council of the Federation from Whitehorse in July 2016, Canada’s thirteen premiers committed to promoting innovation in their provinces and territories. To support their efforts, the Economic Productivity and Innovation Working Group was established “to explore opportunities to enhance productivity and innovation, identify best practices and strive to close the gap between innovation and commercialization in an effort to bolster long-term sustainability and economic prosperity” (Canada’s Premiers, 2016).

In Ontario, the acceleration of an innovation economy is a stated goal of the Government’s Business Growth Initiative (BGI) in its 2016 Budget (Ontario, 2016, p. 16). Targeting skills development, research and entrepreneurialism (through support for start-ups and small and medium enterprises), Ontario is seeking to drive an economy rooted in innovation while equipping its labour force with the skills it will need for future success. Prior to the 2016 budget, the Premier convened the Highly Skilled Workforce Expert Panel. Designed to support skills development for a technology-based economy, the Panel reported in 2015, with recommendations such as the need to generate improved labour-market data collection and the expansion of experiential learning options for students (The Premier’s Highly Skilled Workforce Expert Panel, 2016).

Canada’s federal government devoted a section to innovation in its first Budget (2016), with the goal “to build Canada as a centre of global innovation”. Federal funding will support the development of sectors and industries such as science (e.g. photonics), agriculture, manufacturing, business, etc. There will also be strategic investments for post-secondary institutions, namely through infrastructure to foster innovation. The Government has committed to pursuing the innovation agenda throughout its mandate and, notably, has tasked the Minister responsible for Families, Children and Social Development with reviewing the Employment Insurance (EI) system to ensure it aligns with the realities of today’s labour market, including support for skills training.

Among the federal and provincial and territorial governments, there is consensus and commitment to propel innovation. With such agreement, there is a need to ensure Canada’s labour force is properly equipped for the prospects and challenges ahead. The labour market and its related policies and programs merit the attention of politicians and policymakers.

In the United States, the need for renewed thinking on workforce development comes from increasing regional inequality. The gap in incomes between richer and poorer cities and states has grown in the last fifteen years (The Economist, 2016). It is arguable that the economic disenfranchisement among

many groups in the United States gave rise to Donald Trump's presidency. The general dissatisfaction with the state as a whole and its gridlock politics in particular engendered many to vote for change, electing an anti-political establishment businessman. What do you do when towns are failing? What happens when industry leaves? Do you, as with the case of Carrier, save jobs regardless of their sustainability? Or do you save people?

Redefining Innovation

From the shop floor to a genetics lab, innovation can happen in many ways and in various contexts. Some propose distinguishing between technological innovation, which improves or reapplies existing products in new or different ways, and scientific innovation, which is oriented toward the development and discovery of new opportunities and approaches. However innovation is defined, the outcomes of reapplications, discoveries, and advances can have consequences for a country's economy and its people. By characterizing innovation as a means of creating economic and social value through the application of new technologies, products, services or processes; or through their re-application in new and/or different ways, the meeting focused on the importance or necessity of a skilled workforce for an innovative economy.

Studies on innovation tend to focus their analyses at the level of the individual employee or firm—that is, when and how are they incented to innovate and why? The linkages between a skilled workforce and its potential for innovative output merit closer attention. Other analyses investigate if and how labour market policy impacts the ability of employees and firms to innovate.

Regional variances in expertise and in industrial capacities create opportunities for different models of workforce training and development. Enterprises or industries may be encouraged to establish and grow in particular regions to maximize potential and resources. Such resources may include natural resources (e.g. Alberta's oil sands), a congregation of capital and particular skills sets (e.g. Silicon Valley in California), or financial incentives (e.g. tax breaks). Regions may leverage these resources and/or seek to foster a workforce with the skills these industries and companies require in the short- and medium-terms. Sufficient flexibility to design and implement these models can be considered an asset for sub-national governments. Innovation is not something that 'happens' but is a means that can be fostered through an equipped workforce, scientific research, process improvements and economic incentives.

Save People, Not Jobs

A study by the Business Development Bank of Canada (BDC) (2015) suggests that a skills mismatch was one of several inhibitors to growth for medium-sized enterprises in the country. Companies expressed difficulty in finding the skilled employees they needed to grow their businesses and, without those skills, these companies were unable to expand at desired rates. As one industry leader at the table noted, Canada needs a wake-up call. A renewed strategy for skills development and training must emerge for sustainable growth and development, especially as the population ages and industrial practices change (e.g. offshoring of low-value manufacturing).

An example of a skills development strategy is Siemens Canada's Work Integrated Learning Program (WILP) pilot (2015) in Ontario. This company-led training program is designed to develop talent and skills in young workers. The program has helped to produce a competent pool of potential future Siemens employees and has reduced dependence on older workers while having positive downstream

impacts on Siemens' supply chain. In this model, Siemens invests in students through tuition relief, company training, and soft-skills development. Selected students from university and college are exposed to a professional environment and work on integrated teams. Their practical training combined with their post-secondary institution's theoretical training simultaneously provides students with a degree, in-depth industry knowledge, soft skills, and real-world job experience. Siemens benefits by increasing its efficiency and innovative capacity by equipping potential employees (students) at the beginning of their careers by bringing them up a steeper learning curve in a compressed time frame. This model requires coordination between post-secondary institutions and industry to tailor training and to identify skills gaps.

In countries like Germany, sustained tripartite dialogues between industry, labour and government (in large multinational firms and in medium-sized enterprises) work to anticipate and address skills shortages before they materialize. A willingness is required from each actor to reconsider roles and incentives as circumstances change. Beyond the general trust and goodwill that underlies these collaborations, temporality and investments in people are key, especially as highly-skilled labour is the backbone of high-value-added manufacturing and, ultimately, the model's success. There is a forward-looking approach to skills development in Germany, whereby firms and organized labour assess and make projections about the type of skills they will need several years into the future, covering periods such as five years. Economic and other changes can be mediated via dialogue and adjusted to promote the transferability of skills. Instead of working to fill immediate and often short-term needs, their perspective (shared by industry and labour/workers) is decidedly longer-term. This vantage enables them to adjust training and capacity development to meet changing requirements, underscoring the transferability of training and acquired competencies.

Supporting the temporal perspective is Germany's pedagogical model. Rooted in an apprenticeship system, Germany's educational model exposes students to the realities of industries and trades through experiential placements in their high school years. The approach celebrates trades as highly-skilled endeavours, with expert craftspeople sharing their knowledge with the next generation of employees. The connectivity between industry and labour means that apprenticeship training can be adjusted and updated to meet anticipated or new skills requirements. The adaptability of training means that the implications of changing industrial practices and needs can be managed and phased-in as required. Sector by sector workforce level analysis is regularly undertaken by labour and industry leaders to meet new and changing skills needs.

Germany invests in people ("human capital") which promotes flexibility and transition in its workforce. From regular opportunities for development and education to retraining when companies or industries restructure, Germany's workforce model is influenced by its communitarian society's social capital and educational system with different approaches to economic, industrial, and human capital development. With its sociocultural underpinnings, the German workforce training and development model is not readily transferred to North America's liberal and individualist societies. There are, however, important lessons to learn.

When asked for a single piece of advice for a North American head of government, a German participant replied simply, "**Save people, not jobs.**" Therein lies the most important lesson of the German approach: the people doing the work matter and so do their skills. Equipping people through training and skills development means that they are more likely to be able to adapt to changing circumstances. With the changing nature of work, the German model (while not a panacea) has been successful in developing needed skills for current and future jobs. The Brookfield Institute estimates

that 41.9% of work tasks can be automated with existing technology and that, over the next 10-20 years, 42% of Canada's labour force is at high risk of being affected by automation (Lamb, 2016). This suggests that low-skilled and potentially low-paying jobs are at risk, with higher skilled jobs that require judgement, creativity, and social skills are at lower risk. Germany has focused on preparing its people for the high-skilled and high-value-added industries of the future instead of focusing on the retention of low-value jobs (e.g. basic manufacturing). Retaining the most complex elements of its manufacturing, Germany outsources the lower-skilled elements. Canada and the United States may stand to gain from considering German-style investment in human capital.

The Need for Collaboration

Government, industry, labour, and educational institutions all have roles to play in the development of a skilled workforce. There was a palpable perception among participants that we can do better; some participants pointedly asked political staff why have government, industry and labour yet to meet on this issue ("Why haven't we done this before?"). The form and nature of collaboration may change depending on the context but their interdependence should sustain it. A government's incentives to attract industries, for instance, would be for naught if the skills required to sustain it were not available. Investing in a skilled workforce is about innovation, output, and improvements to transferability in times of economic change.

Three Examples of Initiatives

- i. Firm-level analysis on a sector basis to identify trends and future directions based on demographics and industry needs. Modelled after Germany's tripartite dialogue, the collected micro-data could be leveraged by government for employment insurance allocation and program planning, by industry to identify skills gaps and hiring needs, and by labour to best represent the interests (current and future) of workers. Formalizing the data collection and dialogue would promote more effective planning by all parties (for example, see the Aspen Institute (Blair, Michon & Conway, 2016)).
- ii. Expanding Siemens Canada's Work Integrated Learning program (WILP) pilot. Incent other companies in various industries to collaborate with post-secondary institutions and government to train the next generation of skilled workers.
- iii. Running pilots for worker retraining and redeployment in transitioning from low growth industries. Reallocate some existing employment insurance funding to run pilot programs in regions with high unemployment rates or struggling industries. Collaborating with industry, incent those using employment insurance or close to enrolling in it to redeploy their skills in other sectors or companies.

Looking ahead, there is work to be done to better understand the connection between innovative output and workforce development. The symposium's presentations and discussions raise three principal conclusions:

1. Innovation should be defined to include the development of new technologies and the application of existing ones in the pursuit of social and scientific outcomes.
2. Skills development and training at all levels of government should be oriented toward springboard rather than safety-net style programs.
3. The German case illustrates the importance of investing in the individual worker as a vehicle to support innovation in the workforce.

The December 6, 2016 discussion raised several future research questions that should be explored as we move forward on this policy issue. As the nature of work changes, skills requirements and industries will change too. What are the skills an employee will need to be successful in the new world of work? What are the skills that enable adaptability? How should skills training be addressed over time? How can training be adjusted to meet the needs of both industry and new and existing workers? What role does government have in this area? What roles should industry and labour play?

Addressing these questions will require a willingness on the part of key actors to reconsider their objectives and incentives, to move forward collaboratively on the issue of skills training and development for an innovative workforce. With political commitments for investment and reform, there is no better time for action.

Such action in the forms of pilots and programs could be included in federal and provincial/state 2017 budgets. Underpinning these potential initiatives is needs-analysis at the firm level with cost-sharing between firms and governments which retain broad responsibility for workforce employment.

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Annex 2: Agenda

Tuesday, December 6, 2016

8:00 AM Breakfast

9:30 AM Context-setting and outcomes definition by **Kevin Page**, President & CEO, Institute of Fiscal Studies and Democracy (IFSD), and **Scott Pattison**, Executive Director & CEO, National Governors Association (NGA)

9:50 AM The political case for workforce and skills development for innovation. **Paul M.A. Baker**, Senior Director, Research and Strategic Innovation, Center for Advanced Communications Policy, Georgia Institute of Technology

10:00 AM Break

10:15 AM The policy case: Why do skills matter for an innovative economy? Lessons from Germany. **Ulrich Hilpert**, Professor and Chair of Comparative Government, Friedrich-Schiller-University, Jena, Germany

11:30 AM Break

11:45 AM Changing the temporal perspective: What does industry need to invest in the long-term? Perspectives from industry and labour in Germany. **Hilmar Höhn**, Director, Policy Department, Chemical Workers Union, Germany

1:00 PM Networking Lunch

2:15 PM The Future of Work: What will the workforce of tomorrow look like? How can we build the skills set needed to meet those needs? What role should post-secondary or apprenticeships play in developing the workforce of tomorrow? What has Siemens done to develop the skills they need? What can we learn from the Siemens example and how could these lessons be more broadly applied? **Rocco Delvecchio**, Vice President, Government Affairs, Siemens Canada, and **Sarah Doyle**, Director of Policy + Research, Brookfield Institute for Innovation + Entrepreneurship

3:45 PM Break

4:00 PM Lessons learned and next steps by **Paul M.A. Baker**

4:15 PM Concluding remarks by **Kevin Page** and **Scott Pattison**

4:30 PM Adjournment

