



CANADA'S ECONOMIC STRATEGY TABLES

Digital Industries

The sector today
and opportunities
for tomorrow

INTERIM REPORT



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Budget 2017 proposed the establishment of six Economic Strategy Tables to **lead the creation of Canada's economic growth strategies.**

Working with leading Canadian innovators, Innovation, Science and Economic Development Canada has now established the Economic Strategy Tables to identify growth opportunities in advanced manufacturing, agri-food, clean technology, digital industries, health/bio-sciences and clean resources.

Canada's economic growth is expected to continue at a moderate pace, potentially impacting Canadians' standard of living. The Economic Strategy Tables will galvanize stakeholders in six high impact sectors by setting ambitious growth targets, identifying sector-specific bottlenecks to growth, recommending specific strategies to achieve the targets, drive long-term and sustainable economic growth, and create high quality jobs for Canadians. The Tables will also help guide the Government of Canada in its efforts to provide relevant and effective programs for Canada's innovators.

Long-term sector-specific action plans to meet ambitious economic growth targets for 2025 and beyond across six sectors where Canada is globally competitive will include:

- A common vision for both industry and government that sets the course for moving forward to identify sector strengths, overcome obstacles and improve competitiveness and growth;
- Business-led solutions, government policy recommendations and public-private partnerships based on short-, medium- and long-term actionable areas;

- Greater inclusion of those traditionally underrepresented in the workforce, such as Indigenous Peoples, women, Canadians with disabilities and older workers, in these sectors; and
- A mechanism to champion and monitor sector growth strategies and results.

Each Table is chaired by an industry leader who drives the agenda of the Table and facilitates candid discussion. The Chairs of each Table also meet to take stock of progress and address key horizontal issues affecting all sector tables.

The sectors under the Economic Strategy Table Initiative have strong potential for innovation, growth and the creation of good, middle, class jobs for all Canadians, including currently untapped pools of talent. They also face powerful forces of competition that demand action now to build on their strength and secure a place in the global economy.

Taking a sector-wide approach and sharing best practices will speed up and spread out the adoption of innovations, making sectors stronger on the whole. This will help make Canada's economy more resilient, better able to weather market cycles, and will help cement our world leadership where we excel.

"When you're out in the middle of the ocean, changing course by even one or two degrees now can radically alter where you end up at the end of your journey. What steps can we take today that, by 2025, will make all of Canada happy we did?"

Tobias Lütke, Co-founder and CEO, Shopify

■ THE DIGITAL INDUSTRIES SECTOR TODAY

Digital transformation is changing the way we work, play, share, shop and even the way we may choose to experience our world. As the digital economy becomes imperative for productivity and growth, Canada's digital innovators will underpin our future prosperity. Today's digital industries include a combination of information and communication technology (ICT), digital and interactive media, and content industries as well as manufacturers and service companies that use creativity, talent and digital skills to capture, transmit and display data and information electronically in ever evolving innovative ways. While it does not capture the full breadth of the digital industries including parts of the creative industries, the best framework currently available to benchmark growth is the ICT sector.

AT A GLANCE

DIGITAL INDUSTRIES ARE SIGNIFICANT CONTRIBUTORS TO CANADA'S ECONOMY

- ICT accounted for \$42.7B in GDP (2.5% of Canada's total) in 2016¹
- Video game industry generated \$3.7B in GDP in 2017²
- In 2017, 27% (\$4.6B) of Canada's R&D spending occurred in the ICT sector³
- ICT employment increased 2.6% in 2016, outpacing the overall economy⁴
- Number of ICT firms grew 3% from 2015 to 2016⁵

GROWTH VARIES ACROSS THE SECTOR

- Canada's annual \$1.5B data software service market is expected to double by 2020⁶
- The number of active video game studios increased by 21% from 2015 to 2017⁷
- The number of video game employees increased 6% from 2015 to 2017⁸
- Canadian spending on Augmented, Virtual and Mixed Reality (AR/VR/MR) technologies will reach \$9B by 2020⁹

1 ICTSO/ISED calculations based on Statistics Canada, excludes telecom services

2 Entertainment Software Association of Canada, Essential Facts about the Video Game Industry 2017, <http://theesa.ca/resources/essential-facts/>

3 Statistics Canada, CANSIM, table 358-0510

4 ICTSO/ISED calculations based on Statistics Canada, excludes telecom services

5 Ibid

6 ICTC, Big Data & Intelligence Economy, 2015, <https://www.ictc-ctic.ca/wp-content/uploads/2015/12/BIG-DATA-2015.pdf>

7 Entertainment Software Association of Canada, Essential Facts about the Video Game Industry 2017, <http://theesa.ca/resources/essential-facts/>

8 Ibid.

9 IDC PERSPECTIVE, Immersive Technologies: Augmented Reality and Virtual Reality – What's the "Reality" in Canada? Manish Nargas and Nikhil Anand, April 2017

SMALL FIRMS DOMINATE THE SPACE

- 85% of Canadian ICT firms employ fewer than 10 people¹⁰
- Large firms make up only 0.2% of the sector while accounting for more than 34% of employment
- 78% of video game companies have 25 or fewer employees¹¹

CANADA HAS MANY STRENGTHS

- Strong clusters and start-up capacity, as well as a culturally diverse and creative society
- World-leading research institutions and globally recognized talent
- High innovation potential in data analytics, artificial intelligence, next-generation cybersecurity and mixed reality
- World leader in video games and animation and at the forefront of immersive reality experiences (AR/VR)
- Leadership in blockchain and quantum computing

CANADA FACES SOME CHALLENGES

- Investments in ICT (2.14% of GDP in 2015) are below OECD average and U.S. spending¹²
- By 2020, more than 1/3 of the desired core skill sets for most occupations will be comprised of skills that are not yet considered crucial to the job¹³
- Canada's domestic market for digital solutions is small, offering limited growth opportunity to firms that cannot break into global markets
- Global shortage of highly digitally skilled, consumer-facing and C-suite talent affects Canada
- Ability to use data is competitively essential but Canadian organizations face barriers related to data ownership, access, talent, infrastructure, governance, privacy, security and ethics

10 Innovation, Science and Economic Development, Canadian ICT Sector Profile 2016, https://www.ic.gc.ca/eic/site/ict-tic.nsf/eng/h_it07229.html

11 Entertainment Software Association of Canada, Essential Facts about the Video Game Industry 2017, <http://theesa.ca/resources/essential-facts/>

12 OECD Science, Technology and Industry Scoreboard 2017, http://www.oecd-ilibrary.org/science-and-technology/oecd-science-technology-and-industry-scoreboard-2017_9789264268821-en.

13 World Economic Forum, The Future of Jobs, January 2016, http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf

PRIORITY THEMES

Canada has many of the ingredients of a world-leading digitally driven and inclusive society. Seizing that opportunity demands focused action, a global mindset and dedication to fostering digital industries, recognizing that every industry will soon be digital. With this in mind, the Digital Industries Economic Strategy Table has identified industry leadership and public-private collaboration as the foundation for meaningful impact in the following interrelated priority themes:

1. INCREASING DOMESTIC UPTAKE OF DIGITAL INNOVATION

Increasing domestic uptake of digital innovation may be the single most important element to improving productivity. Industry research estimates a 1% increase in digital technology adoption could generate \$2.5 billion for Canada.¹⁴ At the same time, increased technology uptake will enable sustainable, inclusive growth, creating high-value jobs and making Canadian companies more globally competitive.

2. PROMOTING THE VALUE OF DATA BY LEVERAGING INTELLECTUAL PROPERTY (IP)

Data is the fundamental “natural resource” of the digital economy. Data is at the heart of the innovation economy and will be critical as Canada builds on its fundamental research advantages in artificial intelligence. Digital technologies transform data into insights that allow companies to be more innovative with products and services and compete more effectively in the global market. Marketplace frameworks that leverage and promote Canada’s data and IP assets at home and abroad will boost innovation and wealth creation in the global economy. International borders are porous; companies need to pay close attention to the strategic importance of data and IP as well as be confident they will reap returns on their investments in data tools and analytics.

3. FOSTERING THE GROWTH OF HOMEGROWN DIGITAL COMPANIES

Canada lags behind its trading partners in the creation of large digital technology firms and in having a community of successful high-growth firms. As a result, Canada lacks deep technology ecosystems to best support accelerated innovation and firm growth. Currently, ICT workers earn 58% more than the economy-wide average¹⁵, placing the scale-up imperative squarely with the high-value jobs created by technology firms and the associated multipliers for Canada’s inclusive growth.

4. GROWING THE DIGITAL TALENT BASE

Canada is ranked first in the G7 in the share of science, technology, engineering and math (STEM) PhD graduates¹⁶, yet fewer than half of Canadian high school graduates have senior credits in STEM, suggesting Canada has tremendous potential to expand the talent base. According to the World Economic Forum, creativity is one of the top three skills workers will need – digital solutions require both technical and creative skills. Education in STEM fields is required for 70% of Canada’s high-value jobs.¹⁷ Therefore, key actions to build Canada’s talent base include growing the number of students in science, technology, engineering, arts and math (STEAM); increasing participation by groups underrepresented in the technology workforce; encouraging continuous workplace learning; and addressing the challenges in attracting global talent and building our C-Suite capacity.

14 ICTC, Skills in the Digital Economy, 2016, <https://www.ictc-ctic.ca/wp-content/uploads/2016/05/Skills-in-the-Digital-Economy-Where-Canada-Stands-and-the-Way-Forward-.pdf>

15 Innovation, Science and Economic Development, Canadian ICT Sector Profile 2016, https://www.ic.gc.ca/eic/site/ict-tic.nsf/eng/h_it07229.html

16 OECD, Education at a Glance 2014, <http://www.oecd.org/education/Education-at-a-Glance-2014.pdf>

17 ICTC, Skills in the Digital Economy, 2016, <https://www.ictc-ctic.ca/wp-content/uploads/2016/05/Skills-in-the-Digital-Economy-Where-Canada-Stands-and-the-Way-Forward-.pdf>



■ WHAT'S NEXT

With the release of these interim reports, Tables will: work on establishing a vision and aspirational, top-down targets for long-term sectoral growth; integrate sectors' action-oriented proposals into one comprehensive report; develop an action plan that includes short-term early deliverables and long-term initiatives; and identify performance indicators to track and measure results.

Ongoing consultations and transparency are key components of the Economic Strategy Tables. Canadians are also invited to share their answers via the following email: ic.est-tsse.ic@gc.ca.

- What is your aspirational vision for your sector? What would success look like in 2025?
- It is often suggested that countries need to target their growth efforts toward areas of competitive advantage. In your sector, where does Canada have strength or emerging strength?
- What are the obstacles to innovation in your sector? (You may wish to think about investment, talent and skills, access to markets, rules or regulations, or demand.) How could these be overcome?
- What is, or will be, the most significant innovation globally in your sector for the next 10 years? What is needed to capitalize on this innovation and establish Canada as a world leader?
- To ensure that all Canadians benefit from accelerated economic growth, what actions and partnerships could governments, businesses, educational institutions and Canadians undertake?

To support a transparent process, Table minutes are posted at <http://www.ic.gc.ca/eic/site/098.nsf/eng/home>.

DIGITAL INDUSTRIES ECONOMIC STRATEGY TABLE MEMBERS

Chair

Tobias Lütke, Shopify, Digital Industries

Members

Allen Lau, Wattpad

Boris Wertz, Version One Ventures

Christian Dandeneau, ID Fusion Software

Derek Chen, Archiact

Eric Fournier, Moment Factory

Ian Crosby, Bench

Ian Rae, CloudOps

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