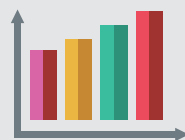


DIGITAL TECHNOLOGY FIRMS IN ATLANTIC CANADA

The digital economy in Atlantic Canada is evolving rapidly but its size and impact have been largely unknown until now. APEC undertook this research on behalf of TechImpact to better understand the importance and role of digital technology firms in Atlantic Canada.

APEC identified 463 digital technology firms in Atlantic Canada. The industry is a large and growing contributor to the Atlantic economy, accounting for **\$6.1 billion** of revenue in 2017, up from **\$5.2 billion** in 2014. However, Atlantic Canada's digital economy as a share of GDP is smaller than in Canada and the US.



\$6.1 billion

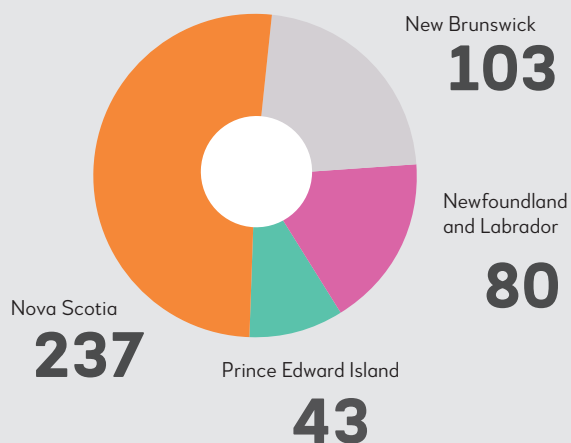
in digital technology revenues



463

digital technology firms in Atlantic Canada

Digital firms by province



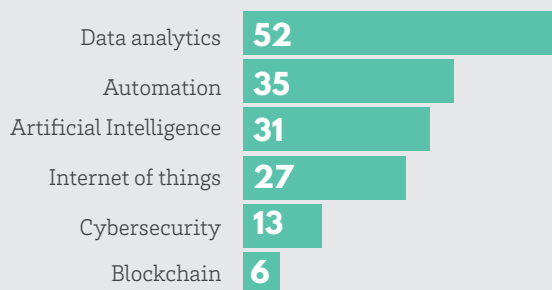
DIGITAL FIRMS: INNOVATIVE AND EXPORT FOCUSED

The digital technology industry is very innovative with digital technology firms driving the recent surge in business spending on R&D in Atlantic Canada.

Digital technology firms attract a majority of the region's venture capital with increasing success in acquiring such funding. However, obtaining financing is a significant obstacle to growth for about **40%** of Atlantic digital technology firms, especially as businesses are scaling up. APEC estimates that Atlantic digital technology exports totalled **\$1.6 billion** in 2017.

Over half of digital technology firms surveyed in Atlantic Canada have a focus on data analytics, with a high proportion also involved in the Internet of Things, automation and artificial intelligence. Only a small share of firms are currently active in cybersecurity and blockchain. Many digital technology firms are using multiple specialties to develop products. The most common pairings are automation and data analytics (**26%** of firms) and AI and data analytics (**24%**).

Share of Respondents Active in Digital Technology Specialties (%)



\$156 million

in business led ICT R&D (2016)



\$1.6 billion

of exports (2017)



DIGITAL LABOUR FORCE KEY TO FUTURE GROWTH

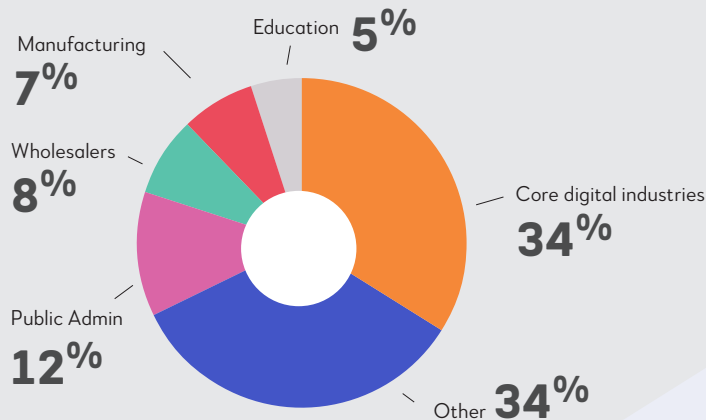
APEC estimates there were **43,000** people in Atlantic Canada's digital industry labour force in 2016. About two-thirds of digital employees are in industries outside the core digital sector. Over **90%** of Atlantic digital technology firms are located in the larger cities. Halifax and Fredericton have the highest rates of digital workers in Atlantic Canada.

Females account for **23%** of the digital labour force in Atlantic Canada and Canada, compared to nearly half for all occupations. Atlantic digital technology firms report that **11%** of employees were recent immigrants and only **1.5%** were Indigenous workers.

LABOUR CHALLENGES

Significant growth in the digital labour force is needed to sustain progress in this industry. The region is not producing enough graduates to fill the current demand for new workers with labour identified as the number one challenge for digital technology firms in APEC's survey. Over half of survey respondents are having difficulty finding software developers.

Digital Occupations by Industry, 2016



43,000

people in Atlantic Canada's digital industry labour force



52%

of surveyed firms cited labour as a significant obstacle to growth

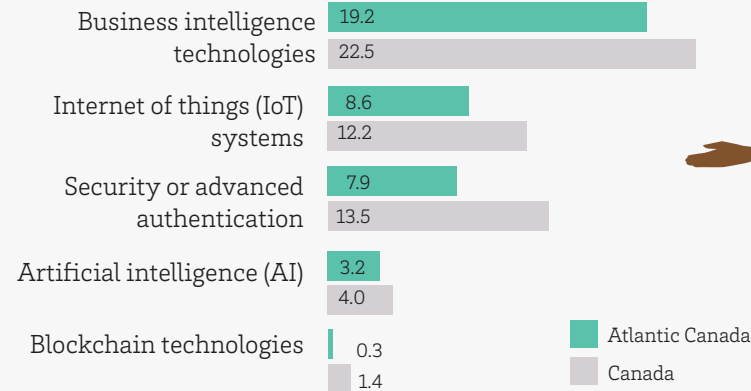


WEAK DIGITAL ADOPTION IN ATLANTIC CANADA

Many of the region's digital technology firms, led by larger local and international companies, are creating new products and technologies that will drive the region's productivity in the future.

In terms of the broader adoption of digital technologies, APEC found that Atlantic Canadian firms trail in adoption in every one of the emerging digital technologies. This is partly due to the small size of firms in Atlantic Canada. Weak technology adoption poses a risk to Atlantic Canada's future growth and competitiveness.

Share of Firms Using Advanced or Emerging Technologies, 2017



TOP POLICY PRIORITIES

Increase the digital technology industry labour supply. Forecasts suggest that annual demand for digital workers in Atlantic Canada will be about 2,000 per year over the next few years while supply was about 1,350 from Atlantic post-secondary institutions in 2017. Increasing participation by women, immigrants and Indigenous workers should all be part of the labour force solution. Responsive post-secondary institutions, effective immigration and a commitment by firms to train employees are also critical for future growth.

Larger digital firms are needed. Small firms are less resilient to the challenges of global competition than large companies with resources for research and acquiring skilled talent. Funding and resources to support firms as they scale-up is currently limited.



Improve digital technology adoption rates by all firms. Atlantic Canadian firms are falling behind in technology adoption. This creates challenges for digital technology firms looking to test or sell their products in the local market. Atlantic digital technology firms can support technology adoption and improve productivity of other firms in Atlantic Canada.