

Towards measuring a digitalized economy



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STATISTICS CANADA

ONE HUNDRED YEARS AND COUNTING

May 2018



Statistics
Canada

Statistique
Canada

Canada

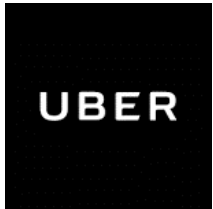
What is the Digital Economy?

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➤ It is part old, new, distribution, product, platform, international, national...

➤ The digital economy is pervasive – touching most aspects of the national accounts.



➤ The digital economy is a particular challenge for national accountants because our traditional data sources and methods need a fundamental re-think.



Digital Economy

- The change in the nature of the product, the way they are delivered / consumed and who delivers them are having a significant impact on national accounting.
- From the perspective of the Canadian national accounts these changes can be grouped into the following broad categories:
 - ✓ The emergence of **global consumers**
 - ✓ Substantial increases in **household production**
 - ✓ The emergence of new **digital platforms and products**
 - ✓ An increase in **data driven** business models with data increasingly becoming a revenue generating asset.

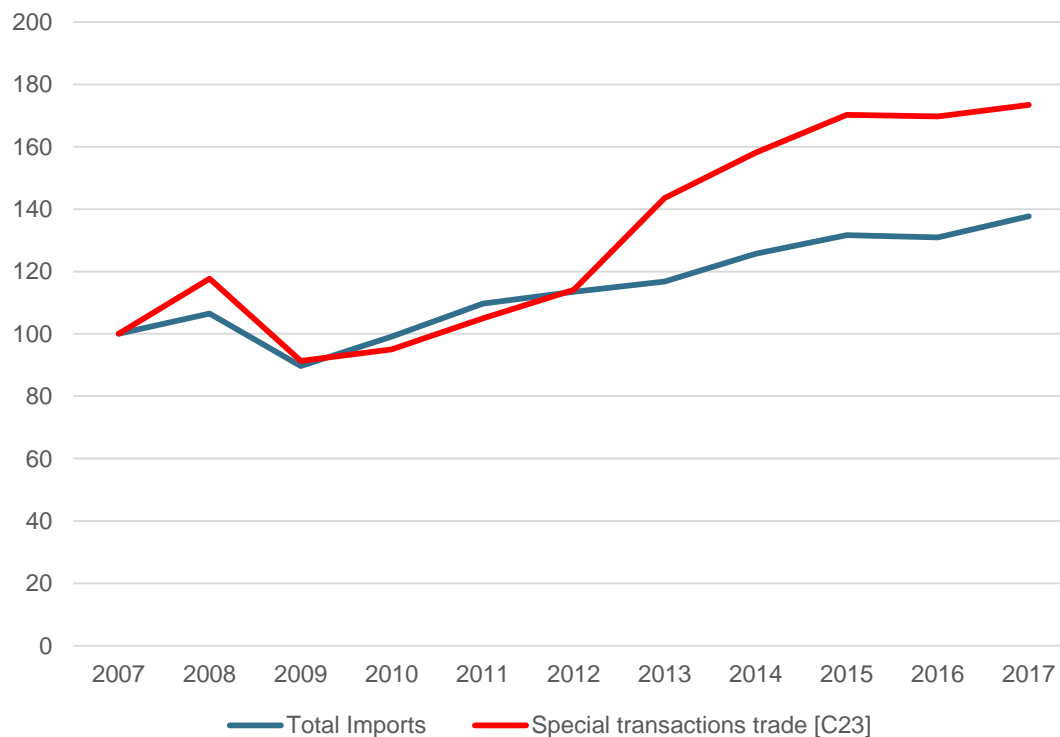


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Global Consumer

- The digital economy facilitates global consumption.
- Local retailers now need to compete internationally.
- Households are becoming direct importers and are importing more and more digital services and small items (e.g. gambling, gaming, travel services)

Total imports and special transactions imports
(2007=100)



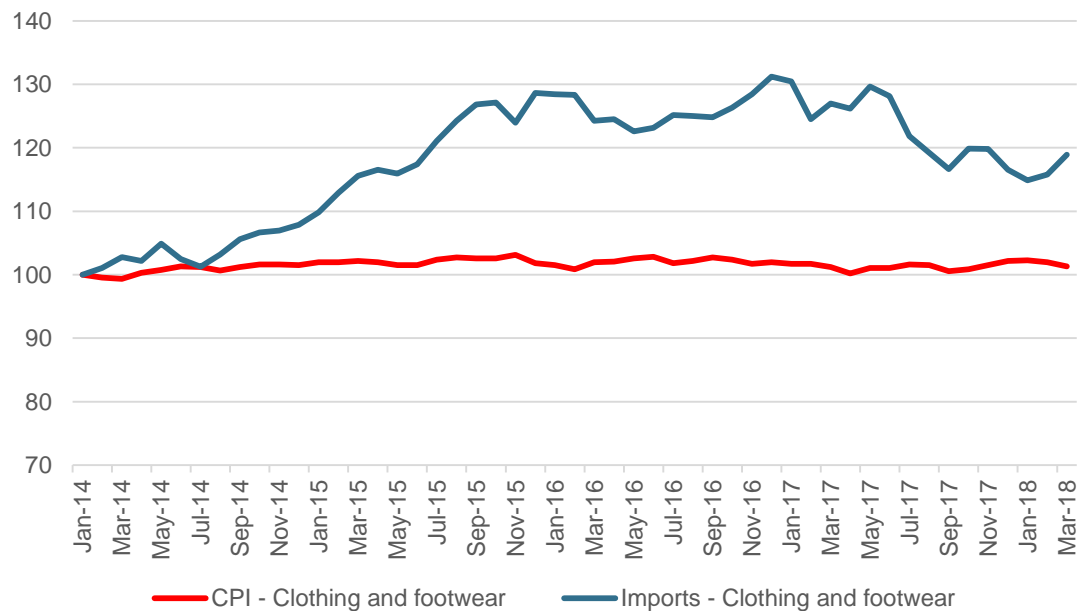
Global Consumer

- Global consumers now face both domestic and international prices.

- A global purchase often bundles goods and services together (such as financial services, transportation services and the cost of the good). What is the appropriate price of the 'good' and 'service'.

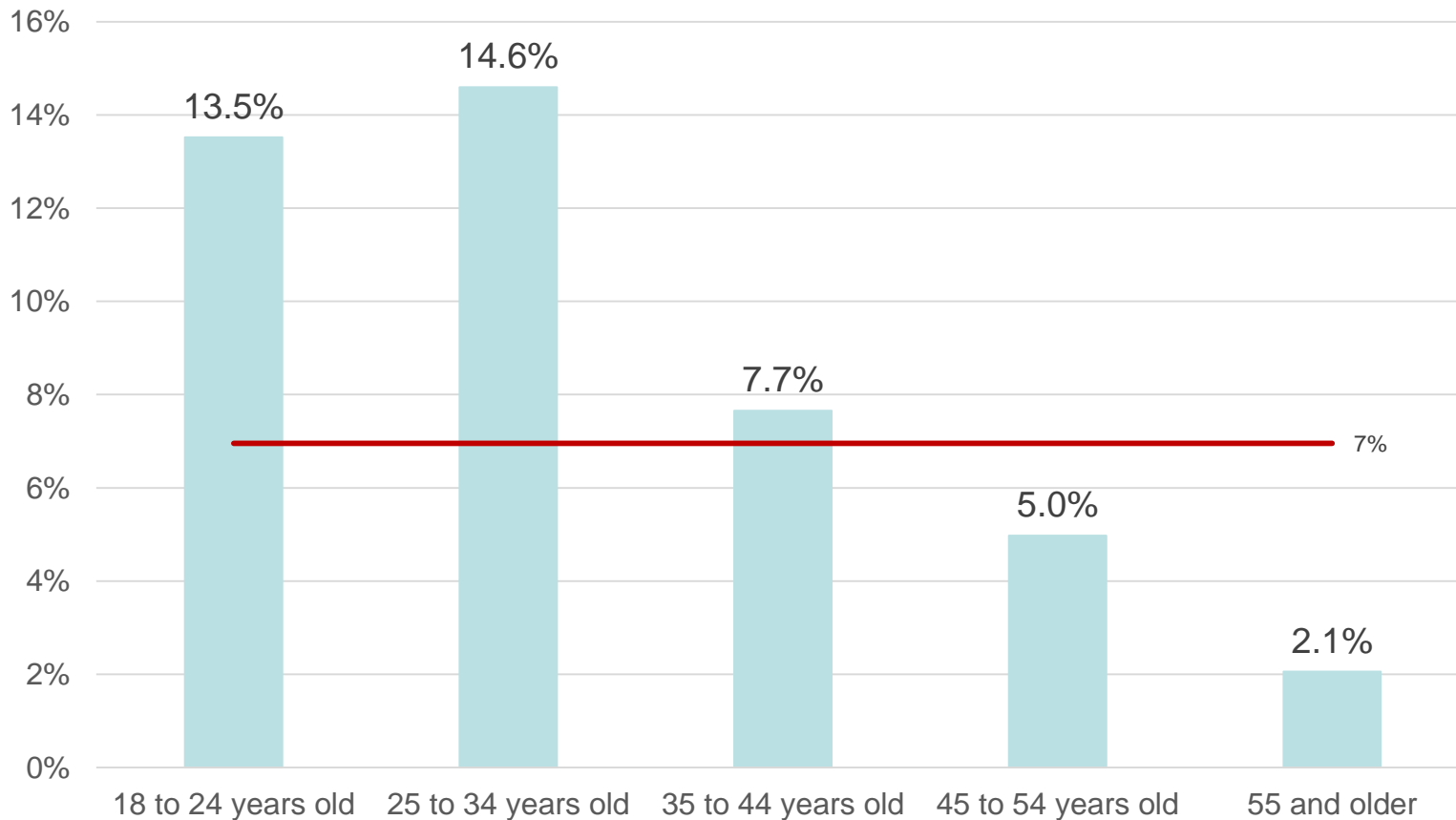


Import prices and Consumer Prices
Clothing and Footwear



Household Production

Proportion of the adult population who used peer-to-peer ride services, Canada



Household Production

AirBnB listings in Canada – 2014 and 2017

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Listing in 2014



Listing in 2017



Household Production

Canadian household accommodation sales revenue
by province and territory

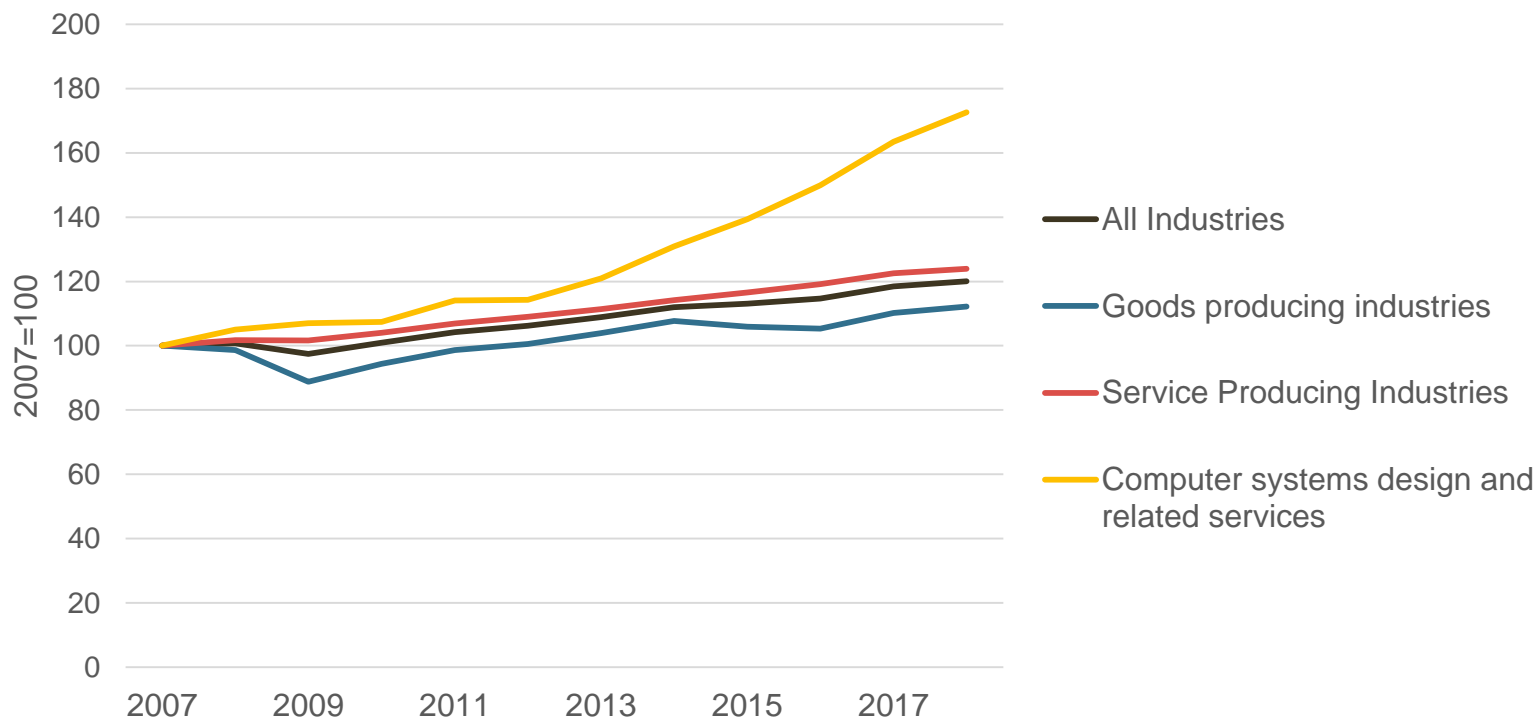
| | 2015 | 2016 | 2017 |
|-----------------------|-------------|-------------|---------------|
| Canada | 206,575,000 | 635,219,000 | 1,496,258,000 |
| Newfoundland | - | 2,022,000 | 14,139,000 |
| Prince Edward Island | - | 5,337,000 | 14,933,000 |
| Nova Scotia | - | 14,537,000 | 34,711,000 |
| New Brunswick | 113,000 | 3,075,000 | 9,524,000 |
| Quebec | 50,882,000 | 171,122,000 | 362,721,000 |
| Ontario | 74,194,000 | 199,067,000 | 487,108,000 |
| Manitoba | 1,220,000 | 3,447,000 | 7,585,000 |
| Saskatchewan | 634,000 | 1,904,000 | 5,012,000 |
| Alberta | 6,079,000 | 22,389,000 | 75,169,000 |
| British Columbia | 73,222,000 | 211,018,000 | 481,049,000 |
| Yukon | 226,000 | 820,000 | 2,152,000 |
| Northwest Territories | 9,000 | 464,000 | 1,981,000 |
| Nunavut | - | 24,000 | 180,000 |



Digital Products – Clouds

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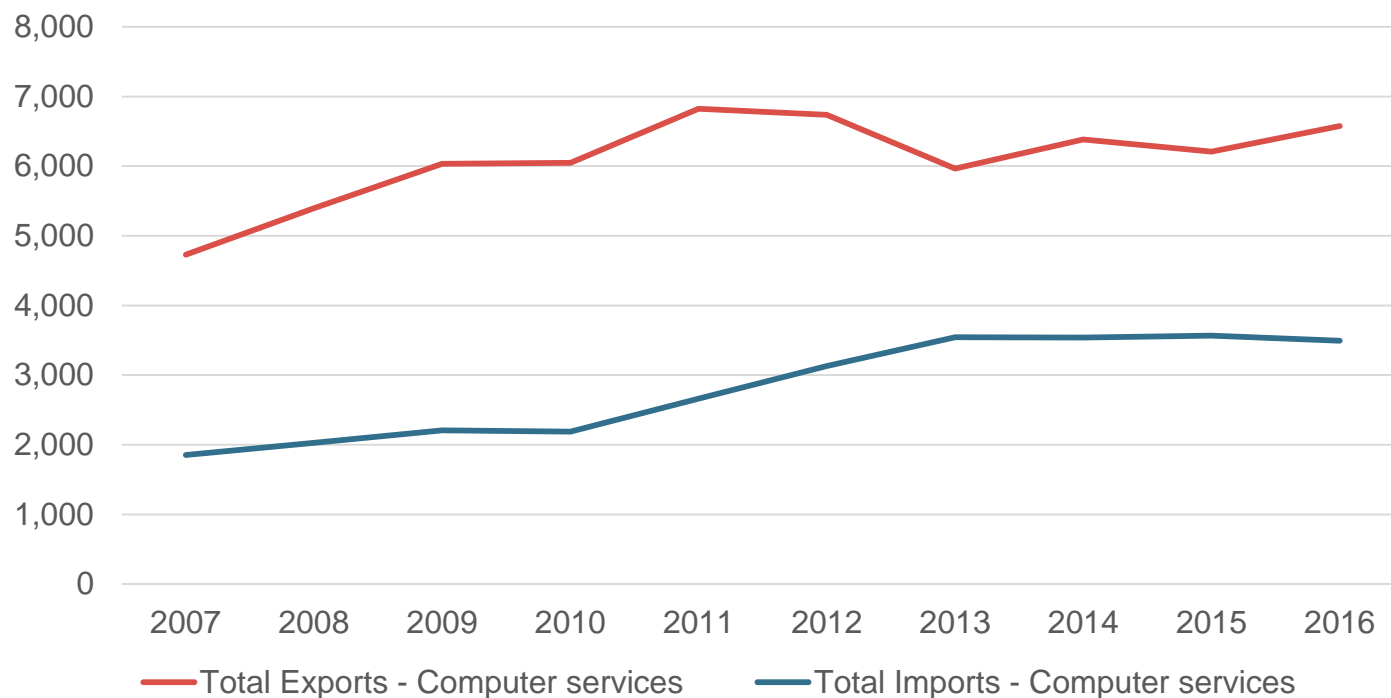
Value Added Index (2007=100) - Computer systems design and related services



Digital Products – Clouds

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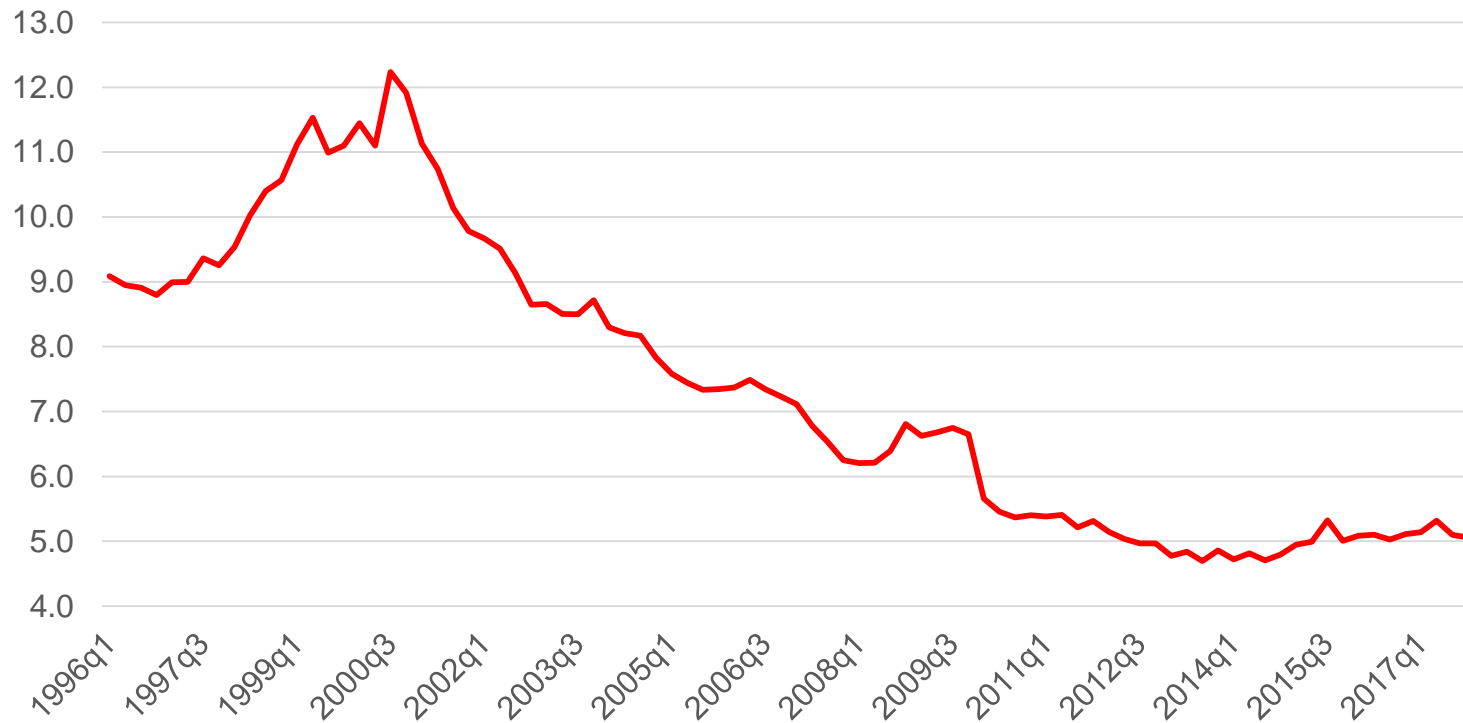
Total Imports and Exports - Computer Services



Digital Products – Clouds

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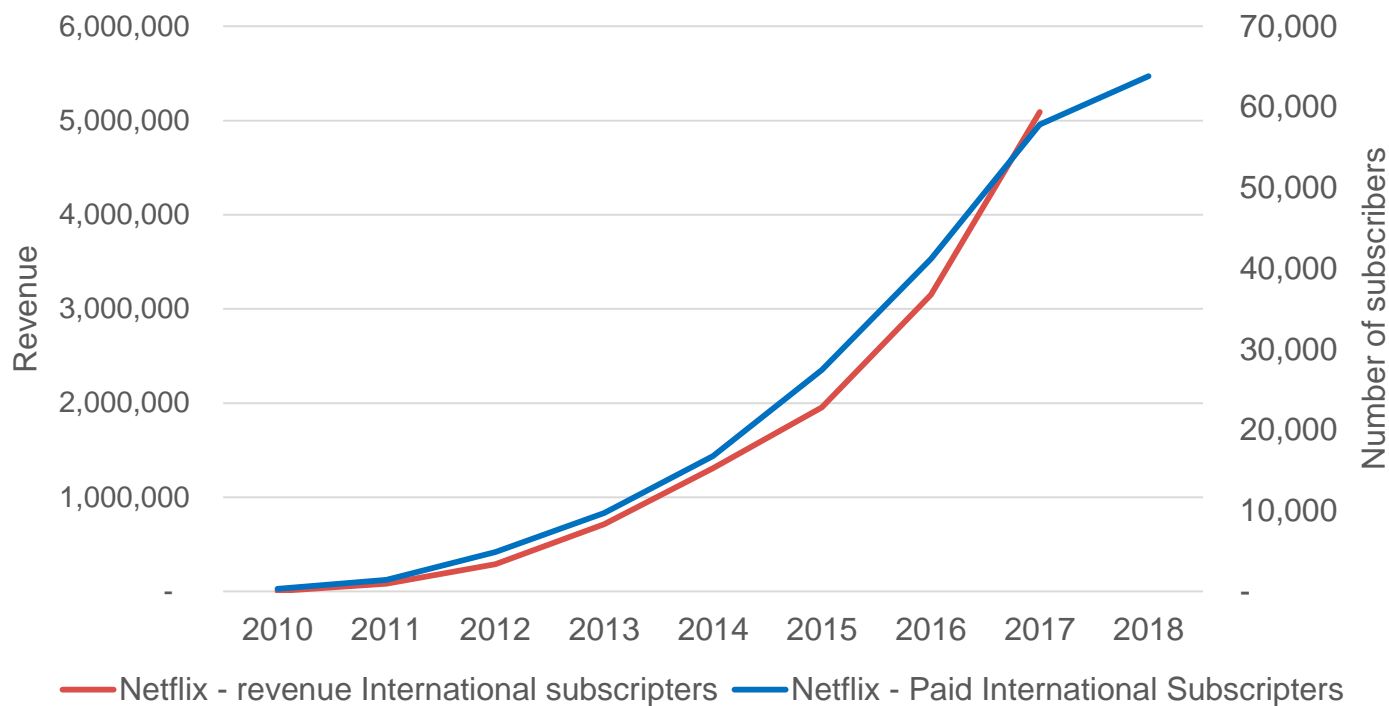
ICT share of GFCF in Canada is declining



Digital Products – Subscriptions

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Netflix International Revenue and International Subscribers



Data Driven Business - Data as an asset



Some back of the envelope estimates for Canada

| | 2015 | 2015 |
|--|----------|----------|
| Estimated total cost of investment on own-account software development | \$ 9,239 | \$ 9,239 |
| Of which: DB development (NOC = 2172) | \$ 828 | \$ 844 |
| Adding capital service costs (Option 1) - 3% interest rate | | \$ 185 |
| Total | \$ 9,239 | \$ 9,424 |
| Estimated total cost of investment on own-account database development | | |
| 1422 - Data Entry Clerks and 2172 - Database analysts | \$ 2,434 | \$ 2,434 |
| Adding capital service costs (Option 1) - 3% interest rate | | \$ 49 |
| Total | \$ 2,434 | \$ 2,483 |
| Incremental effect on DB development by adding auxiliary professions | \$ 927 | \$ 927 |
| Adding capital service costs (Option 1) - 3% interest rate | | \$ 19 |
| Total | \$ 927 | \$ 946 |

What's Next – Financial Industries

Are we prepared for when/if the financial services industry is disrupted?

- How would we classify crypto-currencies in the national accounts?
- What production is associated with crypto-currencies?
- How do we account for electronic wallets on the household balance sheet?
- What if individuals start to develop their own digital currencies by creating a bid for their own services or what do we make of Initial Coin Offerings (ICOs)?



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What's Next – Canadian Digital GDP

Pulling it all together

- The Canadian study will replicate the BEA study for the years 2010-2017.
- The Canadian study will also attempt to develop estimates for known data gaps in the area of household provision and consumption of transportation, accommodation and cultural services.
- The main sources of data will be Canadian Supply and Use Tables along with a number of administrative data acquired by Statistics Canada and results from a special household survey on the digital economy.

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