Google's Economic Impact in Canada 2021

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PUBLICFIRST

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Google's Economic Impact in Canada - 2021

PUBLICFIRST

Public First is a global strategic consultancy that works to help organizations better understand public opinion, analyse economic trends and craft new policy proposals.

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Belle Wuthrich, BC

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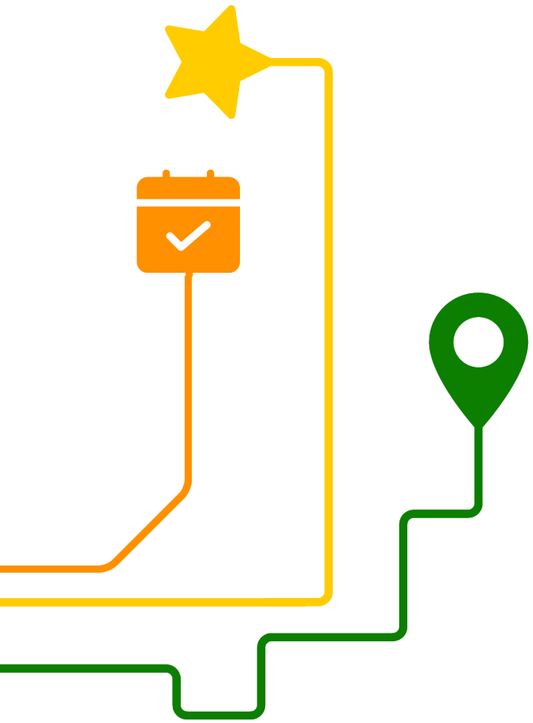
Key Findings

1

In 2021, Google Search, Google Play, YouTube, Google Cloud and Google advertising tools helped **provide $37B of economic activity** for Canadian businesses, nonprofits, publishers, creators and developers. This is equivalent to 1.5% of Canada's total GDP, which is more than the economic impact created by the forestry and aviation industries combined.



2

In 2021, Google helped drive **over 235M direct connections monthly**, including phone calls, requests for directions, messages, bookings and reviews for Canadian businesses

235m

3

In 2021, **more than 1.9 million Canadian businesses and sole traders** received phone calls, requests for directions, messages, bookings, reviews and other direct connections to their customers from Google.

1.9 m

4

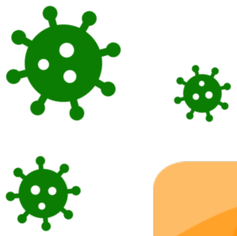
72% of all Google Search users said they found Search **important for helping them find a business**, while **71%** of businesses said online search was an **important way that customers found their business**.

72%

5

The equivalent of over **300,000 Canadian businesses** (24%) told us that it would have been impossible to keep their business running **without the use of online tools during the COVID-19 pandemic.**

300k

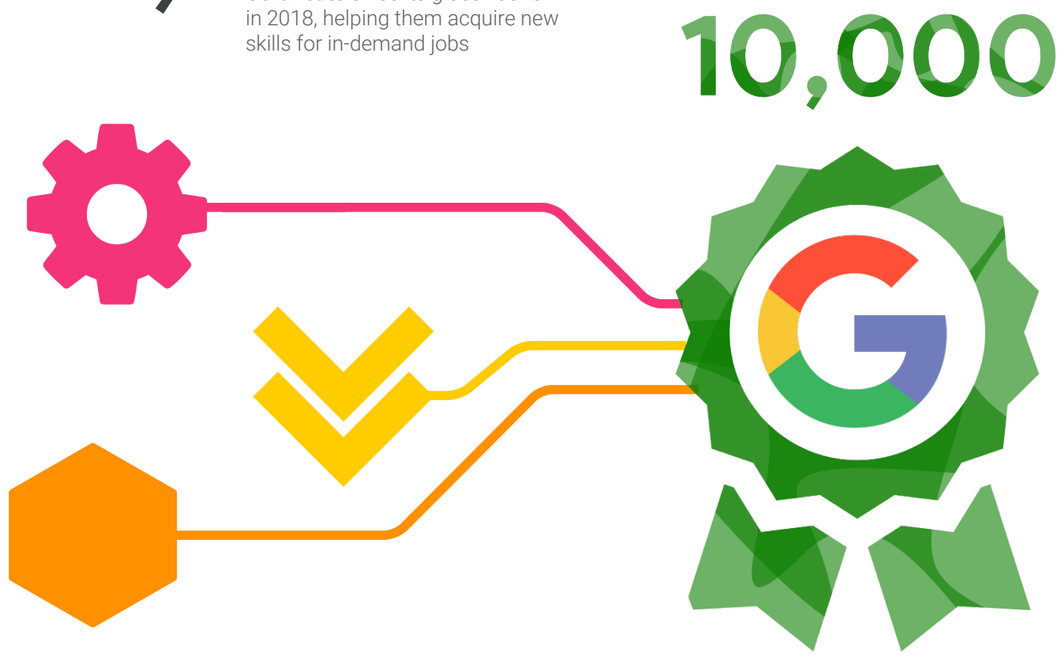


6 In total, we estimate that Google Search and Ads are supporting **$1.7 billion in exports** for the Canadian economy.

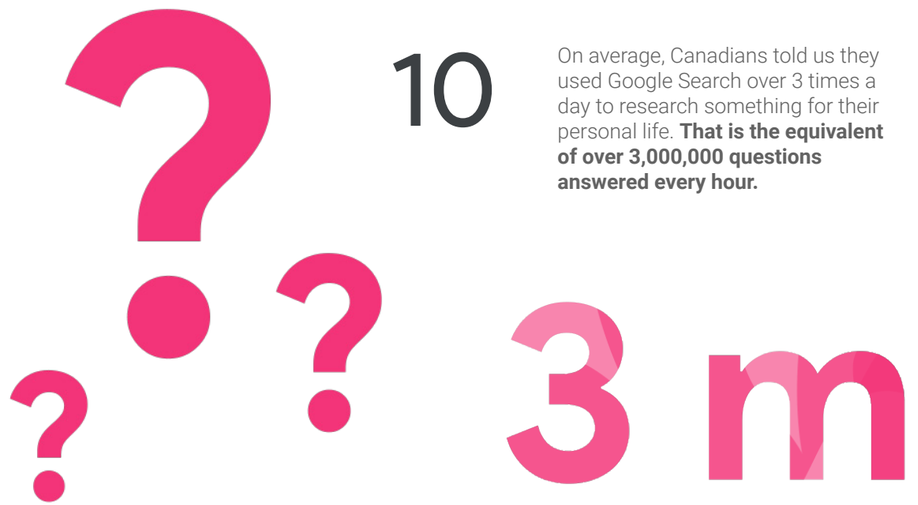
7 Based upon time saved, we estimate that in a given year, Google services could be producing a **$30 billion improvement in productivity for the Canadian economy.**

8 In total, we estimate that Android has saved developers in Canada **over 600,000 days - the equivalent of $240 million in reduced development costs.**

9 **More than 10,000 Canadians have completed a Google Career Certificate** since its global launch in 2018, helping them acquire new skills for in-demand jobs



10 On average, Canadians told us they used Google Search over 3 times a day to research something for their personal life. **That is the equivalent of over 3,000,000 questions answered every hour.**



Google's Impact per Province

$500m
The Territories

$4.55bn
British Columbia

$5.88bn
Alberta

$1.34bn
Saskatchewan

$1.39bn
Manitoba

$7.44bn
Québec

$750m
Newfoundland and Labrador

$130m
Prince Edward Island

$900m
Nova Scotia

$820m
New Brunswick

$13.44bn
Ontario

Introduction

If you wanted to find a new restaurant, local shop or business, where is the first place you would turn? What if you wanted to help a child with their homework, learn more about the background behind an issue such as climate change or just figure out where you'd seen that actor before? Watch someone demonstrate how to fix your boiler, or strum a new chord?

Google's mission is to "organize the world's information and make it universally accessible and useful." Google's products such as Search, YouTube, and Android have made it possible to navigate all the world's information, create new opportunities and make Canadians more productive in both their personal and work lives.

For a majority of Canadians, Google's tools such as Google Search, YouTube and Google Maps are an increasingly important part of everyday life. On average, Canadians told us they used Google Search over three times a day to research something for their personal life. In other words, Google answers over 3,000,000 questions for Canadians every hour.

When it comes to work, Google's tools are just as crucial. Every day, millions of Canadians collaborate through a Google Doc, learn a new skill on YouTube or stay connected with Android devices like Pixel and Samsung. Canadian businesses rely on services such as Google Business Profile as their digital front door, Google Cloud to enable digitization of their processes and Google Ads to grow customers in Canada and across the world.

To explore how Google products are helping Canadian families, workers, businesses, content creators, and nonprofits, Google has commissioned independent consultancy Public First. This report demonstrates that Google products are highly valued by Canadians and that Google is a significant driver of Canadian growth.

This report seeks to understand how Google supports Canada and Canadians in the following ways:

1) **Google's commitments to Canada,** including community support, workforce, and local programs such as ShopHERE powered by Google and Google for Startups Accelerator

2) **Google's impact on Canadian businesses and the economy,** helping enable new business models and connecting businesses with customers across the world

3) **The impact of Google's products and programs on individual Canadians and families,** helping them get more done, keep learning, find jobs, and reduce their environmental impact.

4) **The opportunities created from digital transformation,** specifically looking at the potential of key digital technologies, such as e-commerce, online advertising, digital payments, machine learning.

In total, we estimate that in 2021, Google Search, Google Play, YouTube, Google Cloud and Google advertising tools helped provide **$37B of economic activity** for Canadian businesses, nonprofits, publishers, creators, and developers.

This is equivalent to 1.5% of Canada's GDP, which is more than the economic impact created by the forestry and aviation industries combined.

How we quantified Google's impact in Canada

In this paper, we sought to use a range of different methods to quantify the economic impact and helpfulness of Google Search, YouTube, Android and other Google products:

- Building on the precedent of previous Google impact reports from markets including Canada, the United States, and the United Kingdom, we used traditional economic modelling built upon third-party estimates of Google Canada's market size, and standard returns on investment (ROI) to measure the economic activity driven by Google's core products.
- Working with independent providers Dynata, MSI and Maru Blue we conducted extensive polling of a representative sample of over 7,000 individuals representing every province and territory in Canada.
- At the same time, we polled 2,000 senior business leaders from small, medium and large businesses, representing a range of different industries.
- For YouTube, we incorporated Oxford Economics' estimate of YouTube's total economic impact in Canada in 2021.

To learn more about our modelling approach, please see the Methodology section in the report's appendix.

Public First is a member of the Market Research Society. The full tables for all the data used in this report is available to download from our website here and here.

While Google commissioned this report from Public First, all economic estimates are derived from official, third party and Public First's proprietary information.

Google's commitments to Canada

David Maxwell, NS

Supporting Canadian communities

Google has called Canada home for more than 20 years. In that time, the company has grown to **more than 3,000 employees** in **offices across Waterloo, Toronto, and Montréal,** with roles spanning in Engineering, AI Research, Sales and Marketing.

For the past two decades, Google has been supporting local communities throughout Canada with Google.org grants and investments in digital skills training. **In 2021, Google contributed CAD $10.24 million to Canadian non-profits**, looking to expand inclusive economic opportunity, contribute to furthering racial equity and help Canadians learn new skills, through funding of organizations such as NPower Canada, WeMatter, Indspire, and ComIT.

In addition, Google for Nonprofits provides in-kind product contributions to Canadian nonprofits, giving them access to digital tools that are integral to running their day-to-day operations. In 2021, **Google for Nonprofits provided over 10,000 Canadian nonprofits with Google Workspace for Nonprofits access, valued at more than CAD $30 million**. This contribution allows nonprofits to use Gmail, Google Drive, Google Meet and more, at no charge. Additionally, through Google Ad Grants, eligible nonprofits can access up to $10,000 USD of donated Google Search advertising every month. Nonprofits use this to attract donors, raise awareness for their organization, recruit volunteers, and more. In 2021, **the Google Ad Grants program provided more than CAD $100 million** in donated advertising to nonprofits across Canada.

Furthermore, in 2021 alone, **Googlers in Canada volunteered more than 4,000 hours** with nonprofits in the communities they call home.

Ann Maje Raider,
Liard Aboriginal Women's Society

liardaboriginalwomen.ca

More than 20 years ago, a small group of Indigenous women in northern Canada created an organization to address the impacts of abuse committed by residential schools in the region. Known today as the Liard Aboriginal Women's Society (LAWS), they offer leading-edge social development services to Kaska communities in southern Yukon and northern British Columbia. They address barriers to economic empowerment including gender discrimination, cultural displacement, addictions and violence.

Over the next 20 years they intend to help even more people by creating a virtual Centre to vastly improve services and support for Indigenous women. Using culturally informed training and mentorship, the Centre will strengthen access to safe, culturally appropriate practices that help Indigenous women recover from violence, realize their economic potential and improve their quality of life.

As they were planning their Centre, the team applied to the 2021 Google.org Impact Challenge for Women and Girls, a commitment of $25 million USD in funding for organizations that are creating pathways for women and girls to succeed. From a pool of over 8,000 applicants, LAWS was one of 34 organizations selected. This funding provided LAWS with the resources they needed to begin building the LAWS Centre Project for the 3,000-strong Kaska Nation, Indigenous women and service providers in the area. Through the Impact Challenge, LAWS was also chosen for an intensive four-month accelerator program, receiving mentorship from Google experts regarding user interface design for the Centre Project's online training and mentorship offerings.

In the words of Ann Maje Raider, Kaska Elder and Liard Aboriginal Women's Society Executive Director, "The assistance of the Google.org Impact Challenge for Women and Girls will enable the LAWS Centre Project to support Indigenous women, who are amongst the most marginalized in Canadian society, and help them overcome socio-economic barriers. This assistance comes at a crucial time and will be used to create an intra-community support system marked by Indigenous women supporting other Indigenous women."

Digital Main Street's ShopHERE powered by Google program

A digital presence brings businesses enormous opportunities for growth, innovation and jobs. Google has been committed to helping Canadian businesses realize these opportunities in partnership with Digital Main Street (DMS) and the delivery of the ShopHERE powered by Google program.

DMS ShopHERE powered by Google helps small businesses set up an e-commerce website for free, and provides consultation to small businesses looking to digitize their offerings to sell online. With the websites being built by recent post-secondary graduates, the program also offers practical opportunities for Canadian youth to gain work experience while building their digital skills. At the time of this report:

- **More than 39,000 Canadian businesses have signed up** for the ShopHERE powered by Google program, helping small businesses across Canada get online.
- Of the more than 39,000 Canadian businesses who have signed up for ShopHERE powered by Google, **63% identify as female and 25% identify as BIPOC**.
- **Over 879 university and college students and grads have been hired** to build websites for Canadian businesses through the ShopHERE powered by Google program
- Of the students and youth employed, **55% identify as female and 75% identify as BIPOC.**

Marcos Arcentales,
Bone & Quill

bone-quill-store.myshopify.com

Marcos Arcentales is a skilled jeweler, seasoned entrepreneur and Juno award nominee for his album "The Condor Meets the Eagle". With a desire to blend the materials and design of his southern Quechua-Mestizo ancestry with inspiration from the different Indigenous traditions across the North, Marcos has turned this passion into a thriving business at his Tkaronto-based shop Bone & Quill. The store features handcrafted earrings, pendants and rings, each inspired by the story "The Condor Meets the Eagle," which foretells Indigenous unity and solidarity between the north and the south.

When the global pandemic began to spread and lockdowns reduced in-person traffic, Marcos had to shut down his brick-and-mortar storefront and find a way to digitize his Indigenous-made accessories business as quickly as possible.

For Marcos, the ShopHERE powered by Google program was indispensable in getting Bone & Quill online and ready to fulfill orders. Through ShopHERE, Marcos received free support to build an e-commerce website, with access to one-on-one training on how to best manage and maintain his online store. And with seamless Shopify integration, Marcos can easily attract customers to his online store, take orders and payments, and post customer testimonials in one consolidated location.

Marcos uses lessons learned from his digital marketing training through ShopHERE when using Google Analytics. This gives him insights into which products are most popular, which helps him plan his marketing, predict inventory needs, and make savvy decisions about future product lines. And the analytics provided through Google Maps helps Marcos geolocate high-volume search locations for his shop, which he leverages to create strategic ad placements.

Since digitizing his business through the ShopHERE program, Marcos has seen a steady rise in Bone & Quill's online traffic. That means he has increased customer reach from local foot traffic, to buyers across Canada and the United States — from Vancouver to New Brunswick to Los Angeles and everywhere in between.

Google for Startups Accelerator

Google has also been helping Canadian businesses thrive in the digital age through programs such as Google for Startups Accelerator, a three-month accelerator for technology startups in cohorts such as the Seed to Series A, Women Founders and Black Founders programs.

The accelerators are designed to bring the best of Google's programs, products, and people to startups that leverage machine learning and AI. In addition to mentorship and technical project support, the accelerators also include deep dives and workshops focused on product design, customer acquisition and leadership development for founders.

To date, **60 Canadian businesses** have participated in North American Google for Startups Accelerator cohorts. In order to learn more about its impact, we ran a new survey of over 40 alumni of the Accelerator program.

95%

found it helpful

95% of graduate companies we spoke to said they found the program to be helpful

Almost

50%

expect to see revenue increase of more than 50%

48% of graduate companies we spoke to expect their revenue to increase by more than 50% in 2022, with another 23% expecting it to grow by over 10%

More than

40%

have raised over $2M since participating

Since taking part in the program, over 40% of the graduate companies we spoke to said they had raised more than $2 million in investment, and 15% had raised more than $5 million.

Valerie Song, AVA Technologies Inc.

avagrows.com

Valerie Song loves growing the food she cooks with — she believes it just tastes better. But she also knows that a lot of people don't have enough light or space to grow food at home. Valerie and her co-founder Chase started AVA Technologies Inc. to solve this problem by offering subscriptions for WiFi-enabled smart gardens, seed pods and seedlings to help people grow their own food at home.

AVA has quickly blossomed since it was founded in 2017. In 2021, the team joined the three-month long Google for Startups Accelerator Program led by Google Canada. The program connected the AVA team with experts to address challenges they were facing with the development of their smart garden AVA Byte.

It also helped them improve efficiencies. Creating charts and documentation for every experiment was inefficient, so the AVA team fed their data into the Google Data Studio platform instead. This generated important insights that helped the team to grow plants more effectively over time. The AVA team also learned about the importance of frameworks and processes in business decision making, and continue to run their operations with this mindset.

By finishing the Accelerator program, AVA was able to improve their search engine optimization ranking, develop a product development playbook, and reduce their in-app bug counts. After the program, the team at AVA used what they learned to run a Google Ads campaign for a new product launch. They used Google Search and Display Ads to generate over 500,000 impressions and 30,000 unique sessions.

The program also helped to demonstrate AVA's credibility and – because they had Google's support behind them to help drive brand awareness – AVA was exposed to new funding opportunities to grow their team. They now employ 20 people and offer 30 different seed pods and seedlings to their subscribers. As their team grows and product offerings branch out, AVA continues to build on its roots as a promising Canadian agri-tech startup.

Google's Impact on Businesses and the Economy

Jay Chrohm, AB

Connecting Businesses with Customers

Canadian businesses are increasingly turning to Google tools such as Search and Ads to help them connect with customers across Canada and around the world.

1.9m

In 2021, **more than 1.9 million Canadian businesses and sole traders** received phone calls, requests for directions, messages, bookings, reviews and other direct connections to their customers from Google.[1]

235m

Every month in 2021, Google helped drive over 235 million direct connections, including phone calls, requests for directions, messages, bookings and reviews for Canadian businesses.[2]

$1.7bn

In total, we estimate that Google Search and Ads are supporting **$1.7 billion in exports** for the Canadian economy.[3]

These connections enabled through Google have a ripple effect on businesses' abilities to cater to customer needs, particularly during times of turbulence and uncertainty such as the COVID-19 pandemic. In our business polling, the equivalent of over **300,000 Canadian businesses (24%) told us that it would have been impossible to keep their business running without the use of online tools during the COVID-19 pandemic** – and another 22% said that it would have been significantly more difficult.

1 Source: Google Internal Data, Dec 2021
2 Source: Google Internal Data, Dec 2021
3 Estimated by apportioning the total impact of Google Search and Ads by self-reported data from our business poll on the average proportion of their search engineering budget targeted at international customers.

Additionally, **71% of businesses said online search was an important way that customers found their business.** And individual Canadians agreed that tools like Search and Maps were an important means through which they found local businesses to try:

72%

of Google Search users said they found Search important for **helping them find a business**

82%

of Google Maps users said they found Google Maps helpful for **finding a nearby restaurant, bar or cafe**

75%

of Google Maps users said they found Google Maps helpful when **looking for a new business to try**

Online discoverability can be particularly important for small businesses to gain exposure. In our business poll, **63% of small businesses agreed that online search engines made it easier for local customers or clients to find their business.**[4]

Futhermore, on average, small businesses estimate Search is responsible for around 22% of their new customers, while the equivalent of **over 470,000 companies agreed that their business could not exist without customers from Search or online advertising.**

Frédéric Aubé,
Cozey

cozey.ca

During the pandemic, Frédéric Aubé saw how hard it was to buy and assemble furniture in Canada. He also saw an opportunity to make the process faster, easier, and more seamless. That's why Frédéric launched Cozey, a Montréal-based furniture company.

For the past two years, Frédéric and his team have modernized the Canadian home and living industry – one living room at a time. Cozey's sofas come in lots of small boxes rather than one big box, which makes them easier to transport and assemble. The sofas are also modular, and that lets customers modify and customize them instead of buying and building a brand-new living room set.

As a Direct-to-Consumer business, reaching customers directly is integral to Cozey's growth. Cozey understood that many Canadians begin their furniture search on Google, so they used Google Search and Shopping Ads to first raise awareness of their brand, and then Performance Max Campaigns to help potential customers find their perfect product. This has increased their website click-through rate by 24x since 2020, and 30% of their customers have directly interacted with a Cozey Google Ads Campaign. This sales growth through digital advertising has helped them expand from a team of three people to over 40 in just one and a half years.

Since 2020, Cozey has worked with a strategy team at Google Canada who specialize in personalized digital advertising support for high-potential Canadian businesses through marketing and campaign optimization advice. Cozey has since grown from only offering services in Québec to expanding their deliveries across Canada.

Cozey is confident in the opportunities that lie ahead. "Right now, we're only in the living room," says Felix Robitaille, Cozey's Director of Marketing. "We want to be able to sell what people need for the whole house. And we want to do it while keeping Cozey convenient, chic, and affordable."

4 We define small business as any business with less than 100 employees.

Google Ads

On average, Google **estimates that for every $1 a business spends on Google Ads, it receives $8 back in profit from Google Search and Ads.** This is based on two conservative assumptions:

- First, Google assumes that businesses generally make an average of $2 in revenue for every $1 they spend on Google Ads.
- Google's second assumption is that businesses overall receive an average of five clicks on their organic Search results for every one click on their Ads.

To be conservative, Google estimates that Search clicks are about 70% as valuable as Ad clicks, resulting in a net profit for advertisers of 8X what they spend on Google Ads. A more detailed explanation of this approach is available in the methodology section of the report, and at economicimpact.google.com/methodology.

In aggregate, the extra sales driven by Google leads to significant additional revenue for Canadian businesses. In 2021, we estimate that Google Search and Ads alone helped provide **$33 billion in economic activity for businesses in Canada**.

Android Developers

Thanks to its free-to-use open-source model, Android has been widely adopted by the vast majority of Original Equipment Manufacturers (OEMs) globally. For developers, that can save significant time and costs from porting and maintaining their applications for a new platform for every smartphone manufacturer. **In total, we estimate that Android has saved developers in Canada over 600,000 days - the equivalent of $240 million in reduced development costs.**

In total, in 2021 we estimate the Android App Economy **generated over $1 billion in revenue for Canadian developers,**[5] while **the Android developer ecosystem is supporting over 247,000 jobs across Canada**.[6]

5 Public First modelling
6 https://www.progressivepolicy.org/blogs/the-canadian-app-economy-in-2020/

YouTube Creators

Similarly, YouTube is providing a platform for creative entrepreneurs and Canadian content creators to build businesses and thrive both at home and abroad:

- In Canada, over 550 channels have over one million subscribers, which grew 20%, year over year.[7]
- In Canada, the number of YouTube channels making $100,000 or more in annual revenue (CAD) is up 35%, year over year. [8]
- Over 90% of watch time on content produced by Canadian channels comes from outside of Canada.[9] and according to polling data from Oxford Economics, 78% of creative entrepreneurs agree that YouTube helps them export their content to international audiences they wouldn't otherwise have access to[10].
- Additionally, according to research done by Oxford Economics, YouTube's creative ecosystem directly contributed **$1.1 billion CAD to Canada's GDP in 2021 and supported 34,600 full time equivalent (FTE) jobs in Canada.**[11]

"Beauty is diverse and my YouTube channel has served as a representation to every person across different ethnicities, especially Black women, to always be confident in their natural self."

Adanna Madueke,
YouTube Creator
youtube.com/AdannaMadueke

7 Source: YouTube Internal Data, Dec 2021
8 Source: YouTube Internal Data, Dec 2021
9 Source: YouTube Internal Data, Dec 2021
10 Source: Oxford Economics 2021 YouTube Canada Impact Report
11 Source: Oxford Economics 2021 YouTube Canada Impact Report

Denis Fortier,
YouTube Creator

youtube.com/DenisFortier

For millions of people around the world, health care can be hard to access and sometimes difficult to understand. But Québec-based physiotherapist, author, columnist and content creator Denis Fortier is changing that.

Denis has been a physiotherapist for more than 30 years. In that time, he's helped thousands of patients with simple solutions to help them live healthier lives. Now, he's doing the same thing for French-speaking audiences worldwide by sharing video tutorials on YouTube, helping to demystify health for his global audience of over 500,000 subscribers.

Denis' tutorials cover topics like treatments, pain reduction, joint health and managing the effects of aging. His focus in each video is making health and science easy to understand and showing people, step by step, how to maximize and maintain their health.

YouTube's analytics tools are a key part of that. Denis can track viewership and adapt his content to meet the health needs of his audience – keeping his practice personable and people-centred. "The human factor is fundamental to me," Denis says. "I am delighted that my channel helps to humanize health care for so many."

Denis says his conversations with viewers are rich and fruitful exchanges. For some people in his audience, his videos are a lifeline because physiotherapy and basic medical care are unavailable where they live. He regularly hears that his videos have helped viewers better understand their condition or encouraged them to seek professional help when they needed it. Other clinicians in the field have also used Denis' videos as supplementary material for their patients.

Denis' digital presence has allowed him to expand professional opportunities. He's been able to connect with other medical professionals and write eight books that are available in Canada, Belgium, France, and China.

Helping People and Families

While Google's impact is important to the Canadian economy as a whole, so is the value it creates for individual Canadian consumers and families. By making it easier to access the vast amount of information available through the Internet, Google's products help Canadians save time, learn new things and stay informed. Much of this value remains uncaptured by traditional economic measures like GDP.

The Impact of Search

Google's Chief Economist Hal Varian has estimated that on average Search users **save 23 hours a year from using Google Search compared to other forms of research.**[12] That is a whole extra day of free time a year to spend with friends and family or learn something new.

In our consumer polling, Canadians told us about the many different ways in which Google Search helps out in their everyday lives:

77%

of Google Search users said they found Search important in **helping them research a big purchase**

73%

of Google Search users said they found Search important for **getting help with a tech issue**

70%

of Google Search users said they found Search important in **helping them keep up to date with the news**

The information provided by Search makes a real difference to Canadians:

70%

of Canadians say Google Search is **important to them while at work**

74%

of Google Search users said that the majority of time, **using Search helps them solve a problem**

79%

of Google Search users said that the majority of time, **using Search saves them time**

12 Economic Value of Google, Hal Varian, 2011

Powering Job Searches & Upskilling

One of the most important types of information Canadians use Google Search for is to help them with their career and job search. In our polling we found this to be particularly true for young Canadians:

85%

of Google Search users under the age of 25 said that they found Search **important in helping them look for a job**

75%

of Google Search users under the age of 25 said that they found Search **important in helping them learn a new skill for their career**

63%

of Google Search users under the age of 25 said that they found Search **important in helping them get advice on their resume**

Google Career Certificates

As a direct support to Canadians searching for new jobs or looking to upskill, in 2021 Google Canada announced a CAD $2 million Google.org grant to train job seekers in Canada for new careers in technology over a six month period. This included a three-year Google.org grant to NPower Canada, helping them to provide wrap-around support for learners participating in the Google Career Certificate program, focusing specifically on young Canadian adults from underserved communities.

The impact of this has been significant:

10k

To date, there have been more than 10,000 Google Career Certificates graduates in Canada[13]

66%

of Google Career Certificate graduates in Canada identify as Asian, Black, or Latino.[14]

76%

of Google Career Certificate graduates in Canada report seeing a positive impact on their career within six months, including a raise or a new job.[15]

13 Source: Google Internal Data, Jul 2022
14 Source: Program graduates survey responses CA, 2021. Google-administered survey.
15 Source: Program graduates survey responses CA, 2021. Google-administered survey.

Jorge Gonzalez,
Google Career Certificates Graduate

As the oldest of three siblings, Jorge Gonzalez felt a deep responsibility from a young age to help financially support his family. He worked throughout high school to do this and even decided not to pursue post-secondary education so he could continue supporting his family. Jorge worked mostly as a security guard or in seasonal construction, but his true passion was in IT. But Jorge couldn't find meaningful employment in the field because he didn't have formal training or experience.

Everything changed when Jorge found himself out of work for two months following an injury. While he was recuperating, his siblings encouraged him to apply for a Google Career Certificate scholarship. They had already graduated from the program and knew it could help him achieve his goals. Jorge was accepted in January 2022 and was able to secure a new job in IT before his graduation.

"My family told me 'You can make it, but you have to focus,'" said Jorge, "You really have to work for it. I'd seen the results from my siblings, so I gave it a try and loved it."

NPower Canada complements the Google Career Certificates curriculum by dedicating 20% of class time to professional development including resumé building, networking, tips on how to communicate with your manager, and interview prep for its scholarship recipients. The program also offers career counselling to help learners like Jorge find jobs that fit their interests. As a graduate of the program, Jorge will continue to receive Google's support for five years.

In 2021, Google announced a $2 million grant over three years for NPower Canada to provide scholarships, instructional support, and wraparound support for Canadians participating in the Google Career Certificates program. After completing the program in Alberta, Jorge landed a role as a Product Support Technician with TouchBistro.

"This program changed my path," Jorge said, "It changed my family's path. Sometimes you can't see over a wall, and this program finally boosted me to see over that wall."

Google supports learning inside the classroom too

As technology continues to play a larger role in the lives of Canadians, Google Classroom has played an important role in supporting learning for parents and children, especially when schools couldn't stay open during the pandemic. **More than half (60%) of Canadian parents said their children had used Google Classroom**, and of those:

73%

said they found Google Classroom **easy to use**

75%

said they found Google Classroom **convenient**

73%

said that Google Classroom **helped keep their child learning**

Providing Sustainable Solutions with the help of Google Maps

Canada is the second largest country by area in the world. As Canadians turn to Google Maps to navigate the country, our polling revealed:

80%

of Google Maps users said they found **Google Maps helped them from getting lost**

74%

of Google Maps users said they found **Google Maps helpful when trying a new route to a familiar location**

64%

of Google Maps users said they found **Google Maps helpful for avoiding traffic congestion or public transport delays**

The time and kilometres Canadians save through using Google Maps also results in more efficiency for users and our planet. In total, we estimate that Google Maps helps save Canadians over 253 million hours in driving trips a year, **which in turn prevents over 2 million tons of CO2 emissions from vehicles per year. That is the equivalent of the emissions from over 840,000 flights.**

How much is this all worth to Canadians?

As part of our polling, we also asked Canadians directly how much they would have to be compensated to give up access to Google's products. Based on this, we produced estimates of the *consumer surplus* created by Google's services.

The consumer surplus is the difference between what you would theoretically be willing to pay, and what you actually do pay for a product. It measures this on an individual Canadian basis, rather than per-household, meaning that it measures the amount each person in a household would personally be willing to pay. In many cases, particularly for products that are free to access such as many of Google's, it can be a better measure of consumer welfare than GDP.

In total, we estimate Google's core products are creating a consumer surplus worth **$79 per month** for the average Canadian. If you added up the total consumer surplus created for every Canadian, the equivalent amount as a share of the economy would be as large or larger than our estimate of Google's economic impact on GDP.

Fe Ribiero, BC

Opportunities created from Digital Transformation

Diogo Pinheiro, ON

Digital technology is one of the most powerful drivers of increased productivity, leading to higher wages and improved living standards for ordinary Canadians.

A Forrester Consulting study estimated that the deployment of Google Workspace, including tools like Gmail, Drive, Calendar, Meet, Docs, Sheets and Slides had the potential to save employees between 15 minutes to two hours per week, in more efficient collaboration.[16] Based upon this, and other research on the time saved by Google Search,[17] we estimate that in a given year, Google services are producing **a $30 billion improvement in productivity for the Canadian economy.**[18]

Key emerging technologies continue to offer new opportunities for businesses to boost their growth and become more flexible:

- **Cloud tools.** Cloud tools such as online office suites or chat can make it easier for workers to collaborate, keep information in sync and move fast. On average, studies have found that even relatively basic tools such as enterprise resource planning (ERP) or customer relationship management (CRM) can boost a business' underlying productivity by 10-25%.[19]

- **Machine learning.** Tools like data science, big data and artificial intelligence will increasingly complement existing workers, automate existing workflows, and make business processes smarter and more targeted. Accenture estimates that artificial intelligence could boost worker productivity in Canada by as much as 23% by 2025.[20]

- **E-Commerce.** Tools like online advertising, electronic payments and wider e-commerce can make it easier for businesses to reach new customers, either domestically or globally. Previous studies have found that e-commerce can boost the overall revenue in a market from anywhere between 5-30%.[21]

Every day we're seeing small businesses across Canada embrace the web, and there is still more opportunity to take advantage of these new technologies. In our polling, we found that:

- **64%** of small and medium businesses were **advertising online.**
- Only **43%** of small and medium businesses **were making use of cloud computing.**
- Only **12%** of small and medium businesses were **using AI or machine learning.**

16 The Total Economic Impact of Google Apps for Work, Forrester Consulting, 2015, link
17 Economic Value of Google, Hal Varian, 2011
18 Public First estimate built upon Forrester Consulting (2015) and Varian (2011).
19 See, for example, OECD (2019) or ONS (2018)
20 https://www.accenture.com/ca-en/insight-artificial-intelligence-future-growth-canada
21 Public First literature review

As part of our polling, we also asked Canadian businesses to identify the biggest obstacles they faced in adopting new technologies. The most significant barriers they reported were rarely financial, with just 3% claiming that they were too expensive. Instead they pointed to:

- **Challenges in training staff with new tools.** Businesses said that one difficulty they faced was in encouraging adoption among their workforce.
- **Challenges in integrating with existing systems.** Many businesses worried about how well new technologies would work with their existing systems, and ensuring that vital information did not get lost in any transition.
- **A lack of time.** Other businesses worried about the transition time that would be needed to introduce and train staff up on new systems, with many also pointing to the challenges in keeping up with technologies that were seen to be constantly evolving.

If the adoption of core digital technologies could be boosted among small and medium businesses to match the levels seen in other advanced economies such as Finland or the Netherlands, we estimate that it could increase the total Canadian economy by over $80 billion.

The opportunities that the adoption of digital technology can uncover was made abundantly clear in our polling of Indigenous business owners, which we undertook in partnership with the Canadian Council for Aboriginal Business (CCAB). We found that **58% of Indigenous business owners described themselves as early adopters of new technologies**, compared with 25% of Canadian business owners. This trend is consistent with those seen in a 2017 TD Economics report, which indicated that compared to non-Indigenous firms, Indigenous businesses are more than twice as likely to have introduced a new product or service over the prior three years, and nearly three times more likely to have established a new way of doing things.[22]

22 TD Economics Special Report on Aboriginal Businesses Increasingly Embracing Innovation. (2017).

Indigenous-led businesses in Canada[23]

Research by the Canadian Council for Aboriginal Business (CCAB) found that while the majority of Indigenous-led businesses have an Internet connection, one third do not have reliable access. This is reflected in their finding that 63% of on-reserve businesses state they have Internet reliability compared to 72% of businesses that are off-reserve.[24]

Nonetheless, Indigenous-led businesses in Canada who we spoke to consistently used online tools more than the average Canadian business – from selling products or services online (**66%** vs **57%**) to taking payments (**77%** vs **68%**).

Additionally, we found in our research that Indigenous-led businesses are making use of online tools such as online search (**75%**) and online advertising (**61%**) to reach new customers. This trend has noticeably increased since the pandemic, with **57%** of Indigenous-led businesses we spoke to reporting having maintained or increased their Google Ads spend since March 2020. This approach has paid dividends for the businesses we engaged with, with **nearly a quarter** (24%) of Indigenous-led businesses saying that at least half of their new customers have found them through online search.

Regarding barriers to talent acquisition, **44%** of Indigenous-led businesses we spoke to said they found it difficult to find staff with good digital skills, compared to **31%** of businesses across Canada as a whole. However, technology skills are evidently highly valued - **49%** of Indigenous-led businesses said they employed programmers or developers, and **42%** said they employed data scientists or analysts, compared to **23%** and **11%** of all businesses in Canada respectively.

23 Public First spoke to 174 Senior decision makers at Canadian Indigenous-led Businesses both on and off First Nations reserves.
24 Canadian Council for Aboriginal Business. (2016).

"Canada's transition to the digital economy is already unfolding and this survey adds to the evidence that Indigenous peoples are poised to lead the way. Indigenous business owners are resilient innovators and have taken the initiative to rethink their business operations in the digital era, but they cannot do it alone. Additional support informed by Indigenous-focused research is required to ensure that they are prepared to meet the challenges of the new economy."

Ms. Tabatha Bull

President & CEO, Canadian Council for Aboriginal Business

This evidence means there is incredible potential for continued investment in digital skills training and adopting digital technologies. Furthermore, equipping people with digital skills can be a valuable catalyst for the wider economy. If Canada continues to invest in digital skills and could match the best performing countries in the OECD with regards to increasing its share of basic digital skills, **we estimate this would add over $9 billion to the Canadian economy.**

This is something Google is committed to addressing head on with Google Career Certificate courses, as well as through support to organizations such as ComIT; a non profit which, through educational programs, seeks to bridge the gap between local employers looking for highly skilled employees and job searchers who may be struggling with their career growth.

Pablo Listingart, ComIT

comit.org

In 2011, Pablo Listingart, founder and executive director of ComIT, founded a charity to help bridge the technology skills gap in his home country of Argentina. So when his family immigrated to Canada in 2015, Pablo wanted to repeat this success for newcomers, refugees, Indigenous communities and job seekers across Canada.

Enter ComIT: Pablo's Canadian charity helping people struggling to overcome unemployment barriers by linking them with companies searching for talented IT professionals. Over a three month period, ComIT's students spend eight hours a week learning basic coding logic and some common coding languages, including Java, .Net, and React.

Inspired by Pablo's mission, Google Canada has been supporting ComIT since its inception by providing employees time off to volunteer. Google volunteers not only teach students to code, but they also share advice on soft skills and how to build resumes to get interviews.

When ComIT ran its Canadian pilot in 2017, 12 of the 14 students who finished the program were offered jobs within just a few months. Since then, more than 1,000 students have completed ComIT's program, and more than 700 have found jobs across Canada.

ComIT is free for its students and is funded by grants and donations. Through two grant commitments from Google.org totalling $750,000 in 2020 and 2021, ComIT has been able to establish a new program that supports job seekers from Indigenous communities. More than 1,600 students have registered for this program so far.

ComIT gives people the educational opportunities they need to break into the tech industry. Pablo says the economic impact of ComIT's program is not only substantial, but personal. "We try to provide people with first chances," says Pablo, "We live in a world where first chances are not that common, but that's all some people need to change their lives."

Appendix: Methodology


Jalani Morgan, ON

Consumer Benefits

Google Search

Our headline estimate of the total consumer surplus of Google Search is calculated as the geometric average of:

- **Time saved.** Following the methodology of Varian (2011), we assume that using Google saves 15 minutes per question, with the average person asking 1 answerable question every 2 days. Time saved is valued at the self-reported polling data of average incomes, and we scale the overall estimate by third party estimates of Internet prevalence and polling information on Google Search usage. (More information on this overall approach can be found in the *Economic Value of Google*, a presentation by Google Chief Economist Hal Varian.)

- **Stated preference (Willingness to Accept).** As part of our polling, we asked participants a single discrete binary choice question of "Would you prefer to keep access to Google Search or go without access to Google Search for one month and get paid [Price]" with the price offered randomised between $1.25, $2.50, $5, $10, $20, $50, $100, $200 and $500. We linearly regressed the results of this poll to derive a demand curve and used this to calculate total consumer surplus per user. Finally, we scaled this estimate by third party estimates of Internet prevalence and polling information on Google Search usage.

Following Brynjolfsson et al (2017), we chose a Willingness to Accept (WTA) rather than Willingness to Pay format for our Stated Preference question as we believed this best matched the status quo, given that the majority of Google Services are free to the end user and required no up-front investment.

As with many other products, the mean consumer surplus is significantly higher than the median – or, in other words, a few dedicated users use it disproportionately more than the average.

In order to ensure that our household level figures were not misleading, we based them not on the mean household value for WTA compensation, but instead a separate estimate of the median WTA. We derived this by regressing our polling data again, using an exponential method which we judged was more likely to accurately represent the bottom of the distribution.

Google Maps

Our headline estimate of the total consumer surplus of Google Maps is calculated as the geometric average of:

- **Time saved.** We calculate time saved by Google Maps, using estimates of time saved by advanced traveller information systems from Levinson (2003) and total time spent travelling by mode from our polling, calibrated by Canadian data on the total time spent commuting. Time saved is valued at 37.5% of the estimated hourly income of Google Maps users.
- **Stated preference.** As with Google Search, we asked the participants of our poll a single discrete binary choice question of "Would you prefer to keep access to Google Maps or go without access to Google Maps for one month and get paid [Price]" with the price offered randomised between $1.25, $2.50, $5, $10, $20, $50, $100, $200 and $500. We linearly regressed the results of this poll to derive a demand curve and used this to calculate total consumer surplus per user. Finally, we scaled this estimate by third-party estimates of internet prevalence and polling information on usage.

In order to convert the time saved by Google Maps into an estimate of fuel saved, we first turn it into an estimated distance of driving kilometres saved by multiplying it by an assumed average speed for road traffic. We then combine this with IEA data on average fuel economy, allowing us to produce an estimate of total fuel saved.

In order to estimate the CO2 emissions avoided, we draw on OECD data on road transport emissions to estimate CO2 emissions per kilometre driven, and combine this with our above estimate of total driving kilometres avoided.

YouTube, Gmail and Google Docs

Given that we had no time saving estimates for these products, we instead relied on estimates drawn again from stated preferences, following the same procedure. We asked the participants of our poll a single discrete binary choice question: "Would you prefer to keep access to [Gmail / Google Docs] or go without access to [Gmail / Google Docs] for one month and get paid [Price]" with the price offered randomised between $1.25, $2.50, $5, $10, $20, $50, $100, $200 and $500. We linearly regressed the results of this poll to derive a demand curve and used this to calculate total consumer surplus per user. Finally, we scaled these estimates by third party estimates of internet prevalence and polling information on each product's usage. In addition, we constructed a separate estimate of the median WTA compensation for each product which we used for quoted per person and household estimates.

Android

In addition to measuring the consumer surplus individuals received for individual Google services, we also investigated the overall consumer surplus Canada receives from their smartphone.

We asked the participants of our poll a single discrete binary choice question: "Would you prefer to keep access to your smartphone or go without access to your smartphone for one month and get paid [Price]" with the price offered randomised between $1.25, $2.50, $5, $10, $20, $50, $100, $200 and $500.

We then scaled this number by Android's market share in Canada and Lee (2016)'s estimate of the proportion of net smartphone consumer surplus, excluding substitution value.

Given the overlap with individual services — one reason we value our phone is because it allows us to access Search, Maps, Gmail or YouTube — and the challenges in decomposing the value attributable to software and hardware, we did not include this estimate in our number for the overall value created by Google in Canada.

Business Benefits

Google Ads

Following the precedent of past Google impact reports, we use third-party data to estimate the total size of the Canadian Google Ads market, averaging two types of estimates:

- A **top-down estimate** combining PWC Global Entertainment & Media Outlook data on the total Canadian paid search market with other estimates of Google's market share.
- A **bottom-up estimate** combining estimates of the average number of Google Search ads seen by Canadians, with third-party data on average Cost Per Click (CPC) and Click Through Rates (CTR) drawn from WordStream (2018)

Following the methodology of the U.S. Google Economic Impact Report, we then scale this revenue by an assumed Return on Investment (ROI) factor of 8, from:

- Varian (2009) estimates that businesses make on average $2 for every $1 they spend on AdWords.
- Jansen and Spink (2009) estimate that businesses receive five clicks on their search results for every one click on their ads.
- http://think.storage.googleapis.com/docs/canada-economic-impact-report.pdf Google estimates that search clicks are about 70% as valuable as ad clicks.
- Total ROI is then 2 * spend + 70% * 5 * 2 * spend – spend = 8 (spend).

More information on this methodology is available at https://economicimpact.google.com/methodology/

As part of our business survey, we asked customers of Google Ads to estimate the proportion of their Google Ads spend that went on international customers. Based on this, we produced a conservative estimate of the proportion of Google's overall impact in Canada that goes towards increasing Canadian exports.

AdSense

In order to estimate total Canadian AdSense revenues, we scale Google's 2021 global Traffic Acquisition Costs to network members by Canada's share of global display spending, derived from PWC Global Entertainment & Media Outlook data.

In addition, when looking at the economic impact for Canada as a whole, we also include the estimated returns to advertisers, drawing on the estimated ROI of display advertising from Kireyev et al (2013).

Google Cloud

In order to estimate the total productivity impact of Google Cloud in Canada we combine:

- IDC data on total Google cloud revenue in 2021.
- An assumption that every dollar invested in Cloud services by our users generates a net return.

Business Time Savings

We create an estimate of the value of business time savings from Google Search by:

- Following the proportions in our consumer poll who said each tool was important at work, we assume **70**% of Canadians use Google Search at work and **46**% use Google Workspace.
- Following Forrester Consulting, we assume each user of Google Workspace saves between 15 minutes and 2 hours each per week.
- For Google Search, we conservatively assume that workers research one question per week, and that this saves them 15 minutes following Varian (2013).

We take the total number of hours and convert into a monetary equivalent by dividing by average Canadian output per hour.

Android

In order to estimate revenue for Android developers, we scale Business of Apps (2021 data on worldwide Google Play spend by Caribou Digital (2016)'s estimate of the Canadian share of total app store value captured, an estimated developer share of revenue and a multiplier to take account of associated consultancy jobs derived from Gigaom Research (2014).

For data on app economy jobs, we draw on existing data from Long (2021).

Digital Opportunities

Increasing business adoption of digital tools

In order to estimate the potential economic opportunity from greater digital transformation, we:

- Captured existing uptake of three key digital tools (cloud ERP, CRM) from our business polling for small, medium and large businesses.
- Compared this uptake for each tool to the highest level of take up seen across internal Public First data in other advanced economies (UK, France, Spain, Italy, Netherlands, Poland, Finland), to benchmark level of ambition for increasing adoption.
- Utilise the calculated average impact one year impact on business productivity of each class of tool from OECD (2019).

Increasing digital skills

In order to estimate the potential economic opportunity from increasing the supply of basic digital skills, we:

- Following the precedent of international DESI, used OECD data on the proportion of adults who have used word processing software in the last year as a proxy for basic digital skills.
- Assume that this increases to the maximum level seen across the OECD.
- Assume that gaining basic digital skills leads to an average 10% increase in wages, based on estimates from here and here, adjusted for Canada based on the OECD (2017)'s estimate of the relative impact on wages per country of increased ICT intensity of jobs.
- Apply this to an adult on a low wage, estimated at 66% of average wage

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