

# ARTIFICIAL INTELLIGENCE INCUBATORS

**Why Canada's Hubs for AI  
Research Are Attracting  
Global Tech**

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# ARTIFICIAL INTELLIGENCE INCUBATORS: WHY CANADA'S HUBS FOR AI RESEARCH ARE ATTRACTING GLOBAL TECH

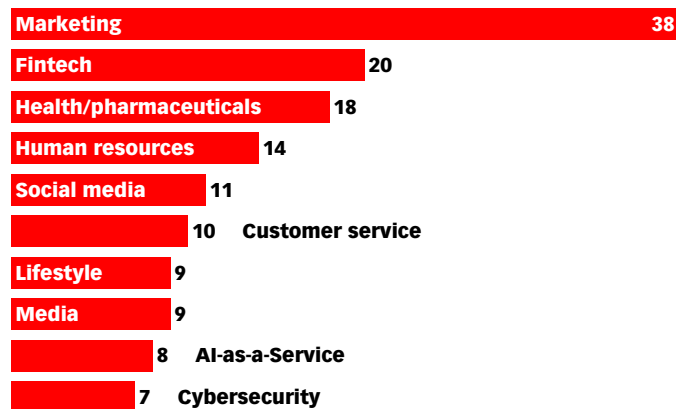
Canada is among the pioneers when it comes to AI research and development. It's home to a bustling scene that pairs academia with industry, with the aid of government funding. Machine learning is touching a variety of disciplines, but the marketing field is emerging as the primary area for designing real-world business applications.

- **Why is Canada attracting global tech companies for artificial intelligence research?** Canada's AI ecosystem is thriving. Particularly in Montreal, Toronto and Edmonton, clusters of AI innovation have developed to tie private enterprise to academia, where advanced machine-learning research attracts top talent.
- **What do consumers think of their engagement with artificial intelligence?** Consumer perceptions of their engagement with AI is low, likely due to the behind-the-scenes nature of the technology. Algorithms for pervasive consumer services from Facebook, Google, Amazon and others rely on AI to provide more personalized experiences, but a large portion of consumers do not see the connection.
- **Which industry uses artificial intelligence effectively?** Applications in marketing have become the most mature business AI deployments. Programmatic advertising channels deliver optimization built with machine learning, chatbots have become a proven method of customer engagement and recommendation engines power better ecommerce experiences.

**WHAT'S IN THIS REPORT?** This report looks at the why and how of Canada's thriving AI scene. It covers the research and development infrastructure, consumer attitudes toward machine learning and the top applications for brands and marketers.

## Marketing Is Top Focus for Artificial Intelligence Firms in Canada, 2017

ranked by number of firms



Source: Green Technology Asia Pte Ltd, "The Canadian AI Ecosystem: A 2018 Profile," Feb 12, 2018

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**KEY STAT:** AI startups cover a range of industries, but marketing is the top area for machine-learning testing and development, with no less than 38 firms working on AI for marketing solutions in Canada.

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## A NORTHERN AI INCUBATOR

**Artificial intelligence (AI) is touching every industry, as technologists begin shaping practical applications and executives attempt to understand how it will influence profitability and competitive differentiation. More than just a business opportunity, consumers are also being educated about AI's potential—and potential threats, like rampant automation resulting in the loss of certain types of jobs.**

The specter of AI isn't new. After all, Steven Spielberg's film "AI" was released in 2001. A couple of decades before then, in 1983, The Canadian Institute for Advanced Research (CIFAR) created a group called Artificial Intelligence, Robotics and Society. It was led by Geoffrey Hinton, a University of Toronto-based AI pioneer (Hinton now works for Google in addition to his duties at the university).

Back then, AI had been heavily researched in academia, but computing power fell short of what was required for meaningful machine learning (a synonym for AI). The advent of cloud computing, big data systems and increased processing power in recent years has made practical applications of AI a reality today. Companies like Google, Facebook, Apple, IBM and Amazon have built AI into their algorithms and services to deliver more personalization every day.

Canada is on a shortlist of global AI leaders, punching above its weight due to AI pioneers like Hinton, Yoshua Bengio of the University of Montreal and startup Element.ai and the University of Alberta's Rich Sutton. These academics have built some of the finest AI degree programs in the world.

In 2017, the federal government in Ottawa announced the Pan-Canadian Artificial Intelligence Strategy, a CA\$125 million five-year commitment to fund research led by groups centered around the pioneering scientists: the Montreal Institute for Learning Algorithms (MILA), The Alberta Machine Intelligence Institute (AMII) in Edmonton, and the Vector Institute for Artificial Intelligence, based in Toronto.

Provincial governments are also joining the funding party. The Quebec government has provided \$100 million to its local AI community in Montreal and Ontario has committed \$50 million for Vector.

These announcements prompted Google's executive chairman Eric Schmidt to tweet last fall that Canada "quadrupled down" on AI with a smart mix of four key elements: government, universities, large companies and startups.

The City of Montreal has drawn significant investment from global tech giants interested in cutting edge AI research and talent. These moves represent a broader strategy by corporate leaders to establish close ties with academia, especially in advanced computing disciplines like AI. Consider the following announcements in the past couple of years to situate corporate research centers near the cluster of innovation emanating from the Universities of Montreal and McGill:

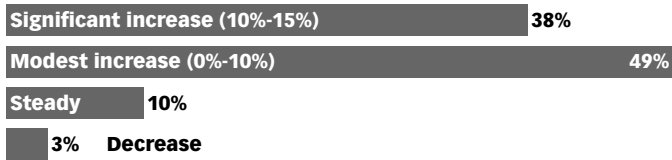
- Facebook: opened a FAIR (Facebook Artificial Intelligence Research) lab in Montreal in September 2017
- Google: Google Brain opened a lab in November 2016, led by Montreal-based deep learning scientists
- Microsoft: acquired Maluuba in January 2017, a Montreal-based AI lab
- Samsung: Its Samsung Electronics Advanced Institute of Technology (SAIT) opened a lab in September 2017.
- Thales SA: announced plans to open a lab in Montreal in October 2017

In addition to industry commitment to the AI scene in Canada, the political landscape in North America reinforces the sector's strength. In 2016, there was a noticeable "brain drain" of AI talent from Canada to the US industry prior to the election of Donald Trump. But a survey of the membership of MaRS, the Toronto-based innovation incubator, reported that 53% of companies saw more international applicants in 2017 compared with 2016, primarily from the US. The Trump administration's repeal of the International Entrepreneur Rule, which enables immigrants to grow a business for up to five years without visa expiry, has made Canada a more attractive place for skilled technologists.

The buzz surrounding the AI sector in Canada appears to be influencing private industry's openness to invest. Executives in Canada are increasingly bullish on AI investment in the next three to five years—more so than those in the US and the global average, according to "AI Looks North: Bridging Canada's Corporate Artificial Intelligence Gap," a May 2018 report from McKinsey & Company.

## How Much Do Executives in Canada Expect Their AI Investment to Change in the Next 3 Years?

% of respondents, Dec 2017



Note: n=120

Source: McKinsey & Company, "AI looks North: Bridging Canada's corporate artificial intelligence gap," May 14, 2018

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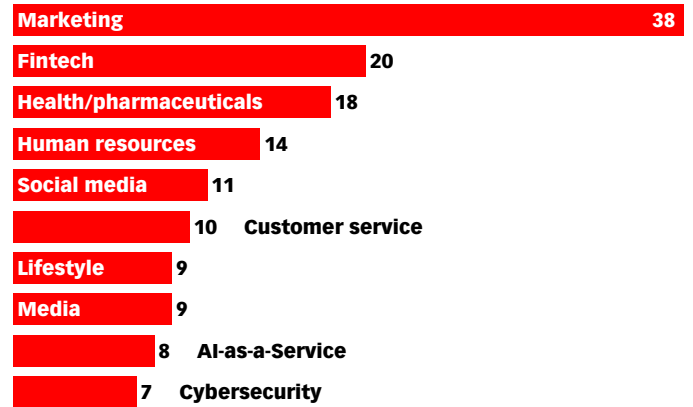
Venture capital is readily available for AI startups in Canada. PwC Canada reported that 2017 was a record year for AI investments in the country, with startups raising CA\$191 million. PwC and CB Insights' "Money Tree" report showed that investments in Canadian AI companies increased 88% year over year in Q1 2018, with eight deals totaling CA\$83 million.

In "The Pulse on Fintech 2018," KPMG reported similar heavy venture capital funding and merger and acquisition activity in Canada. "AI continued to be one of the dominant focus areas for investors in Canadian fintech. Canada is increasingly regarded as a global leader in AI innovation with highly regarded specialists in Toronto, Montreal and Edmonton attracting significant investments to those cities. A number of banks have also acquired companies in the AI space, in part as a talent grab to fuel their own innovation activities," the report stated.

Much of the innovation is being applied to the marketing discipline, the focus of many AI startups. According to "The Canadian AI Ecosystem: A 2018 Profile," conducted by Green Technology Asia, marketing is the top industry judging by the number of AI firms in Canada. The researcher found 38 AI startups with a marketing focus, almost double the number of the next largest industry, fintech.

## Marketing Is Top Focus for Artificial Intelligence Firms in Canada, 2017

ranked by number of firms



Source: Green Technology Asia Pte Ltd, "The Canadian AI Ecosystem: A 2018 Profile," Feb 12, 2018

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"The opportunity for AI experts is to simplify concepts like machine learning and contextual computing for non-computer scientists," said Hossein Rahnama, CEO and founder of Flybits, a Toronto-based AI fintech firm. "This allows people to focus more on use cases, like in marketing and customer engagement, rather than worrying about algorithmic and IT complexities."

## CONSUMER PERSPECTIVES ON AI

**Consumer understanding and acceptance of AI is growing, due in part to the amount of popular culture references and media coverage of the burgeoning technology. Greater appreciation of AI's pervasiveness has resulted from wide coverage of Facebook's platform exposures and the algorithms it uses to produce the newsfeed. Google's much publicized algorithm updates are also well covered. What this all means is consumers now better understand how AI underpins much of their interactions in daily life.**

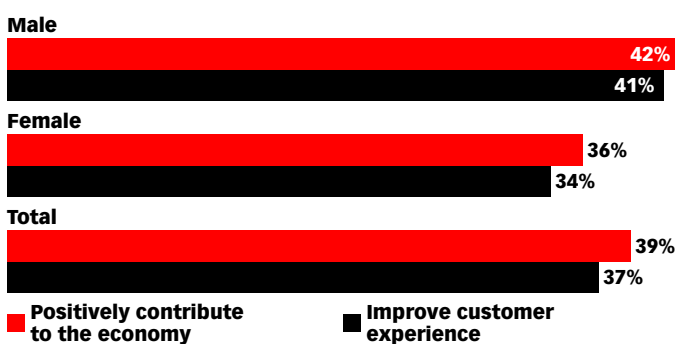
Global tech's investment in Canada is rooted in the deep and culturally diverse talent pool within the country's universities and startup community. And consumer testing of AI attracts international players because of the diversity within Canada's urban centers full of digitally savvy consumers.

AI literacy has grown, but many consumers in Canada are less accepting of the technology than those in the US and UK. About a quarter of consumers in Canada don't know how they feel about AI's growth in the country, according to a 2018 survey by OpenText. More than a third of respondents (37%) didn't know if they had interacted with AI technology.

Proof's "CanTrust Index 2018" also shows internet users in Canada are skeptical about AI. Fewer than four in 10 respondents trust that AI will have a positive effect on the economy and customer experiences. This somewhat contradicts the Proof finding that 67% of respondents trust brands like Google, who are active in the AI arena.

### Do Internet Users in Canada Trust Artificial Intelligence to Have a Positive Effect on the Economy and Customer Experience? Feb 2018

% of respondents, by gender



Note: ages 18+; top 3 responses on 7-point scale where 1=trust very little and 7=trust a lot  
Source: Proof Inc., "CanTrust Index 2018," April 10, 2018

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When asked about which AI use cases were acceptable, Canada internet users in response to an Ipsos and Communitech poll in May 2018 were more open to passive applications of AI—like video surveillance, which topped the list, at 63%. When it came to replacing jobs and other workplace issues, respondents were more resistant, at 18% and 22% respectively.

### How Acceptable Are Select Uses of Artificial Intelligence (AI) and Algorithms According to Internet Users in Canada? May 2018

% of respondents

AI video surveillance could determine and levy charges for traffic violations	63%
Could be introduced to your line of work and help you make decisions that lead to better outcome or greater efficiency	57%
Could objectively examine the plans and policies of a political party and inform the public of the actual costs, benefits and likely unintended consequences offering voters more information	57%
Use AI instead of people to decide on shifting your investments into new areas to maximize your returns	52%
AI could report sports news without human input	48%
Use AI instead of people to decide on air traffic, where and when planes land at an airport	47%
AI video surveillance could determine and levy charges for serious criminal offences like assault, robbery, etc.	46%
AI could report the political news without human input	44%
AI video surveillance refereeing sporting events*	42%
Use AI instead of people to decide health and dental insurance claims	36%
Use AI instead of people to determine access to government support programs for such as employment insurance	33%
Use AI instead of people to decide which medical interventions are best for you and your family during an illness or after an accident	32%
Use AI instead of people to decide implementation of government policies such as who can immigrate to Canada	28%
Use AI instead of people to decide whether a person gets a job	22%
AI could replace your job entirely	18%

Note: n=2,001 ages 18+; top 2 box "very acceptable" and "somewhat acceptable"; \*e.g., game 7 of the Stanley Cup could see AI-driven technology calling a penalty shot in the final minute of play  
Source: Ipsos and Communitech, "Tech for Good: A Canadian Perspective," May 23, 2018

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The survey showed that people were more accepting of AI applications that augmented their decision making. They were neutral on applications that were lower touch, like reporting the news, and less accepting of applications that had real-world consequences, as in AI medical diagnosis and advice. Only 8% of respondents said they were very knowledgeable about AI, while 12% said they were not at all knowledgeable.

Canada's consumers aren't as comfortable using AI-powered chatbots as their counterparts in the US and Mexico. comScore and UPS surveyed digital buyers in each country about a range of chatbot utilities, and respondents in Canada were roundly less comfortable with getting product information, completing orders, returning products and receiving product updates.

## Digital Buyers in Canada, Mexico and the US Who Are Comfortable Using Chatbots for Select Shopping-Related Activities, 2017

% of respondents

	Mexico	US	Canada
Getting product information	65%	42%	36%
Completing my order	63%	39%	33%
New product updates	62%	39%	33%
Ordering products	61%	38%	33%
Returning products	58%	39%	30%

Note: ages 18+; \*includes Mexico

Source: UPS and comScore Inc., "UPS Pulse of the Online Shopper Study - Global Study Executive Summary," April 11, 2018

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The Canadian Artificial Intelligence Tracker, a 2017 survey of consumers conducted by Sklar Wilton & Associates, found that many people have still-developing views on who the leaders are in AI. Almost half (43%) stated they did not know who a leading AI company was. Of those who did have an opinion, Google topped the list, at 29%, followed by Apple, Tesla, Microsoft, IBM, Amazon and Facebook.

## REAL-WORLD AI FOR MARKETERS

The marketing industry has relied on and been responsible for groundbreaking advances in AI. The much-publicized algorithms from Facebook, Google and Amazon—to name an obvious few—are designed to improve the relevancy of their services, make them indispensable and monetize a targeted audience for marketers.

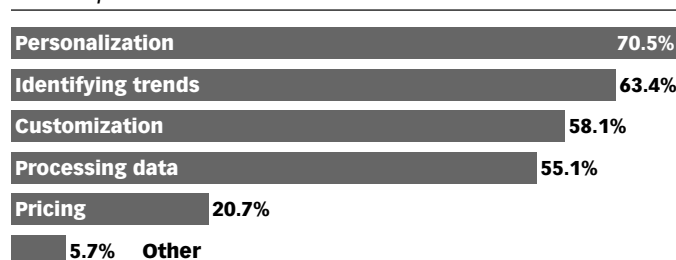
The top digital advertising formats—search and display—rely on AI-based campaign optimization working beneath the surface. For example, the automated captions that appear on soundless Facebook ads are generated by AI tools. Programmatic ad channels are inherently machine learning-based, continually tuning bids to garner specified results for advertisers in display.

"We've seen a significant shift with AI, particularly in programmatic, from a performance standpoint," said Shawn Lowe, vice president of growth and partnerships at Time and Space Media, a Halifax-based media agency. "We would see eight to 10 campaigns generally across the span of a 12-month period, and we find that when an AI tech set is deployed, it continues to improve across those different campaigns by up to 30%."

For brand marketers, AI has also become relevant in a few key areas that they can control. Personalization tops the list, cited by 70.5% of business-to-business (B2B) marketers in North America in a Q1 2018 poll conducted by EverString and Heinz Marketing. Identifying trends also rate highly, cited by 63.4% of respondents, as did customization (58.1%), and processing data (55.1%). However, the same survey showed that 13.7% of B2B marketers in North America indicated that they did not "fully understand what AI is."

## Areas in Which B2B Marketers in North America Are Most Interested in Using Artificial Intelligence to Support Their Marketing Strategy, Q1 2018

% of respondents



Source: EverString and Heinz Marketing, "The State of Artificial Intelligence in B2B Marketing," June 28, 2018

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For retailers, and ecommerce professionals in particular, the utility of AI is clearer. Client-side ecommerce professionals worldwide surveyed for the "Ecommerce Performance Report 2018," by Econsultancy and Conversion, rated conversational commerce (e.g. chatbots and personal assistants) as the top digital technology they planned to experiment with by 2020. A full 59% of respondents said they would test it, and another 55% said they would utilize AI for personalization.

**Digital Technologies that Agency\* vs. Client-Side\*\*  
Ecommerce Professionals Worldwide Plan to  
Experiment with by 2020**  
% of respondents

	Agency*	Client-side**
Conversational commerce (e.g., chatbots, personal assistants)	40%	59%
Artificial intelligence for personalization	39%	55%
Digital wallets/mobile payments	40%	44%
Social commerce	48%	40%
Voice technology	18%	18%
Beacon technology	15%	15%
Different interfaces (e.g., smart watches, internet of things)	14%	13%
None of these	18%	16%

Note: \*includes ecommerce service providers (i.e., agencies, platform implementers, software vendors); \*\*includes client-side/brand marketers at ecommerce companies

Source: Econsultancy and Conversion, "Ecommerce Performance Report 2018," Jan 18, 2018

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"Retail globally is being transformed at every single level, and it's at that perfect catching point to benefit from AI," said Kerry Liu, CEO of Toronto-based Rubikloud Technologies, which designs AI tools for retailers worldwide. "The problems that retailers historically have around their business—like personalization—are really good problems for AI to come in and solve."

For more information on AI applications in marketing, read eMarketer's report, "[Artificial Intelligence for Marketers 2018: Finding Value Beyond the Hype.](#)"

## CHATBOTS

When Facebook opened up its Messenger platform to developers in spring 2017, the notion of chatbots working for brands on messaging platforms had been tested, but not proven. Messaging platform Kik had tested bots since 2015, and there were many examples of bots working seamlessly in Asia on localized platforms, such as Line in Japan and WeChat in China. But the Facebook move brought the idea of conversational marketing via chatbots into the mainstream. Today, the vast majority of bot development and launches happen on Facebook Messenger. (The company also announced in August 2018 an application programming interface (API) for WhatsApp, which may lead to a more multi-platform approach to bots.)

"The overwhelming majority of developer and startup interest is on Facebook Messenger in North America," said Andy Mauro, CEO and co-founder of Automat.ai, a Montreal-based conversational marketing developer. "We get asked about WhatsApp now that it's open. iMessage is really interesting, but Apple's careful with how they open it up. They're making the same early mistake that Facebook made, which is they thought it was all about customer service."

Facebook reported that there were 8 billion monthly messages between users and businesses as of May 2018, up fourfold from the year before. More than 300,000 bots are on the platform.

Early testing of bots was primarily focused on a single use case: customer service, allowing a disaffected or challenged customer to get a problem resolved quickly. While still viable, cost savings—reduced resourcing in a call center, for instance—rarely paid back adequately. Most recent chatbot development efforts are for engaging consumers during their purchase journey, answering product questions and facilitating a smoother, quicker path to purchase.

"The hype around chatbots is certainly way down," Mauro said. "It's very much like in the early days of email marketing, when people did not want to get emails from companies. You hear people saying that about messaging now."

According to Dan Code-McNeil, head of sales at Ada Support, "AI-powered automation reduces agent wait times and allows companies to scale their offerings to match growth, while maintaining existing support budgets." Understanding what metrics matter to gauge the efficacy of a chatbot is maturing, and includes the following according to Code-McNeil, whose Toronto-based firm has deployed chatbots for several customers in the market:

- Engagement rate: ratio of conversations that were engaged vs. abandoned
- Satisfaction rate: percentage of all reviews that were positive
- Recognition rate: percentage of questions the bot recognized and answered with anything other than "not understood"
- Handoff rate: percentage of conversations the bot hands off to an agent

As use cases expand, bot metrics have veered more toward demand generation aims like minutes per engagement and average revenue per user. Automat.ai published a Vichy case study in June 2018 showing some key metrics about the L’Oreal subsidiary’s bot Vicky, a virtual beauty consultant, which offers a diagnostic service (the conversion trigger) based on skin conditions. Some results from the campaign on Facebook Messenger were compared with results of the diagnostic offered on its website:

- Conversion: 87% of users took the chatbot’s diagnostic, a rate four times higher than the website
- Sales: 74% increase in items added to a user’s cart and 35% greater revenue per user (defined as a user who took the diagnostic) compared with website results

“In the case of Vicky, in absolute numbers, we’ve seen up to 11 minutes of brand engagement,” Mauro said, whose firm developed the bot. “The average is in the 5- to 7-minute range.” After users receive their skincare recommendations, the system informs back-end systems of consumer preferences to help with future offers and follow-up content.

Like the beauty industry, airlines have been an early adopter of chatbots. In 2017, 78% of airline IT executives worldwide indicated they have implemented or plan to implement chatbots, according to Circle Research’s report on airline IT trends.

WestJet became the first carrier in Canada to launch a chatbot in August 2018. Dubbed Juliet, the bot enables flight shopping, itinerary information and flight booking. It’s also designed to handle customer support queries.

“The initial way we will gauge success hasn’t anything to do with sales, marketing or revenue,” said Alfredo Tan, chief digital and innovation officer, WestJet. “It’s the speed at which we can process guest issues, deflecting them from the call center.”

WestJet estimates that “tens of thousands” of calls will be averted in the call center. The key metric that WestJet tracked initially was percentage of queries handled by the bot without the need to connect to the call center. The bot has been programmed to handle 700 query scenarios, according to Tan. Eventually, the company plans to expand the AI tool beyond that of a messenger to its mobile app and website.

“Other messaging platforms and voice interfaces on the front end such as Google Home and Amazon Alexa will be a part of the roadmap over time,” Tan said.

## CONCIERGE BANKING

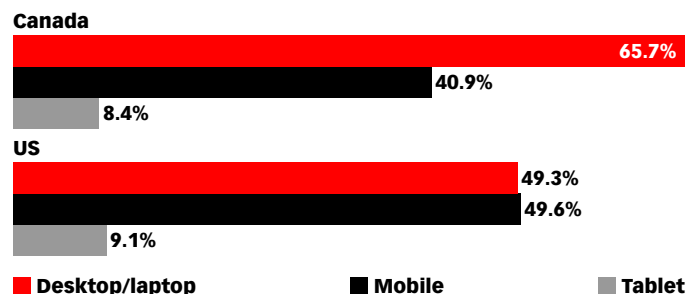
Financial services firms in Canada have taken the lead in expanding chatbot capabilities into a fuller and more curated “concierge” experience. Fintech AI firms have zeroed in on retail banking to augment how banks and financial institutions interact with customers.

Concierge banking includes three primary use cases: retail banking, which includes products like lending, mortgages, card services, fraud detection and branch services; wealth management, including robo-advisors and investments; and insurance, using AI to help make sense of complicated products.

“If you look at the consumer sector, you see the arrival of predictive, AI-based concierge services,” Flybits’ Rahnama said. “You have Siri on Apple, Google Assistant on Android, Cortana on Microsoft, so the question for a Fortune 500 company is how to build a predictive concierge service.”

Consumers in Canada are heavy digital and mobile bankers, using financial services for checking account balances, paying bills and purchasing additional services from lenders. According to GlobalWebIndex reporting on Q3 2017, 65.7% of internet users in Canada banked from a desktop/laptop, 40.9% from a mobile phone and 8.4% from a tablet.

### Internet Users in North America Who Use Digital Banking, by Device, Q3 2017 % of respondents



Note: ages 16-64; in the past month  
Source: GlobalWebIndex, Feb 20, 2018

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Applying AI to highly sensitive personal information like finances is a hard sell. People are ultra-conservative when it comes to money matters, and trust in AI is still low among some segments of the population. To overcome these hurdles, the concierge apps from banks need to have super utility—using the best aspects of AI to make them indispensable recommendation engines.

“Our philosophy is that all marketing channels in the future want to have an embedded recommendation service,” Rahnama said. “Instead of the user searching for the information they want, the right information will find them when they need it. Companies can do this based on their own first-party data, and external sources like social media data.”

The recommendation engine concept was popularized by Amazon and Netflix. According to Rahnama, Amazon surfaces products and services based on about 12 data points, while the Netflix recommendation utility uses about five data points from viewership history.

In 2016, TD Bank launched TD for Me, a mobile app-based experience that aims to curate personalized banking. Today, almost 2 million of its customers are using the service, which is now powered by AI learning.

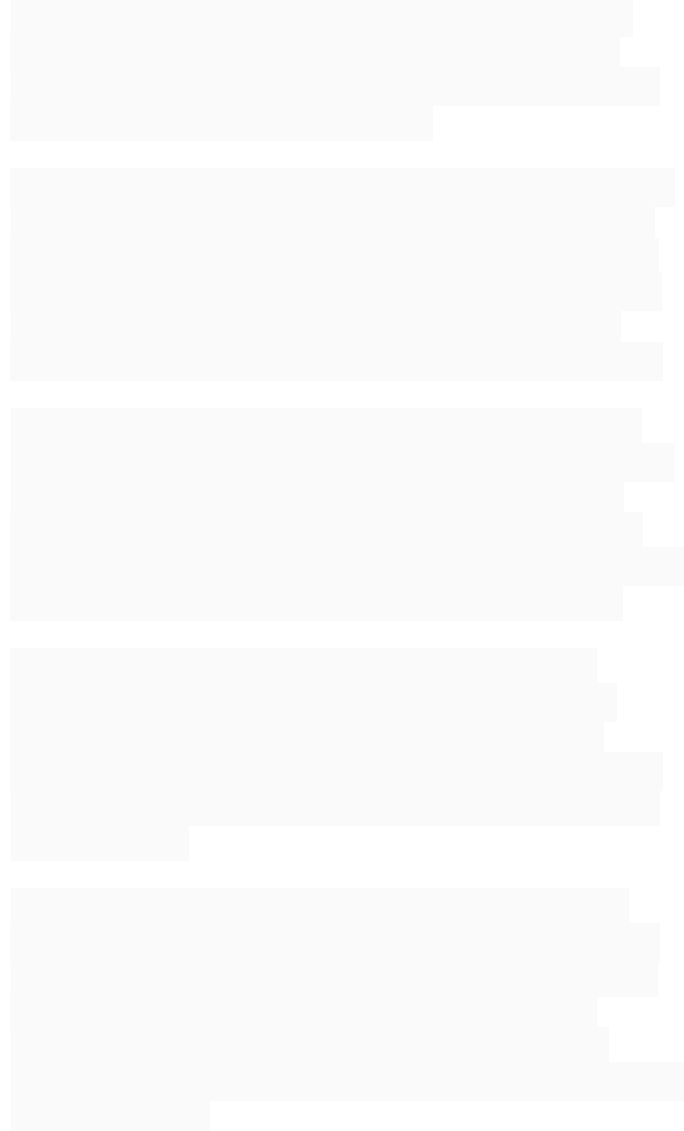
To measure the efficacy of the app, TD relies on both qualitative and quantitative metrics. The qualitative ones include engagement rate and session times. The quantitative metrics are more business related, and include mortgage renewals, credit card upsells, insurance policy activation and fraud prevention.

TD’s digital channels team—a mix of marketing and IT resources—developed on top of FlyBits’ software development kit to bring the concierge capabilities to its digital platforms, including its mobile app and website. In the end, TD decided to embed Flybits’ tech into its existing mobile app.

In Alberta, ATB Financial pioneered AI in western Canada in 2017 with the introduction of a banking concierge product, what it claimed to be the “world’s first fully featured virtual assistant.”

“We’re committed to offering alternative channels for consumers to do their banking in a frictionless way,” said Curtis Stange, president and CEO of ATB. “The friction that exists in the movement of money is the trickiest to reduce.”

Stange said simple transactions are well used, but there is consumer education required to achieve that comfort level with more complex transactions like mortgage adjustments and investments. After almost a year in the hands of customers, the tool has provided lots of feedback on consumer attitudes and common issues discovered by the type of questions it fields.



## SEARCH

The world of search engine marketing (SEM) is being upended by a variety of AI tools that include campaign optimization, predictive search and voice queries, enabled by natural-language processing.

## SEM Optimization

Paid search efforts are traditionally straightforward, based on pay-per-click (PPC) pricing and defined budgets. Search ad spending in Canada will surpass US\$2.9 billion in 2018, according to our ad spending forecast.

SEM is done primarily through Google AdWords campaigns in Canada, as Google dominates search referral share in Canada with nearly 91% of the market, which is consistent with the worldwide average.

“We were looking for a tangible value proposition associated with applying AI to our media-buying operations,” Time and Space Media’s Lowe said. “What we found was an AI overlay that sits on top of our AdWords account and optimizes PPC performance. We are seeing the doubling of campaign performance on impressions and clicks without any incremental investment.”

Time and Space is using Acquisio’s AI search tool, reducing active workload by up to 40% for both small and large PPC client campaigns. The tedium of search campaign monitoring—measuring performance, bid adjusting, budget capping—is offloaded to the automated AI system. Acquisio’s algorithms continually tweak search campaigns to fit within a certain budget and optimize for specific days of the week that perform best.

“It’s self-learning bidding and budgeting for PPC,” said Beth Thouin, vice president of marketing for Montreal-based Acquisio, which was acquired by Web.com in 2017. “It’s 24 hours a day, constantly adjusting so that you’ll get the most clicks or conversions for a certain budget with never going over or under budget.”

Google offers a homegrown cost per acquisition (CPA) algorithm that operates on budget parameters and PPC thresholds set up by advertisers. But third-party solutions that optimize PPC over time have become valued by media buyers like Time and Space Media. One of the findings from the AI tool is that a lower PPC does not generate the best conversion outcomes. “If you pace it and let the machine learn throughout the month, you’ll end up with more conversions with the same budget at the end of the month, plus consistent conversion,” Thouin said.

## Predictive Search (aka Recommendation Engines)

Historically, search’s view to intent was clear, and ad products were simple and reliable. But predictive search tools that recommend products or content based on personalization are on many brands’ wish lists, especially those that sell online.

“Predictive search, which we define as the capability of a platform to anticipate what a consumer is most likely looking for, is growing for all of our clients,” said Devon MacDonald, CEO of Mindshare Canada. “As media platforms learn more about consumer behavior and intent through AI, there are incredible opportunities to provide information and product recommendations to consumers. Predictive search anticipates what the needs of the consumer are, based on their own and similar consumers’ previous behaviors, and in the process shortens the purchase cycle to a single view or click in some instances.”

Almost two thirds (65%) of senior retail marketers in North America and the UK surveyed by Monetate in late 2017 said they were actively using a product recommendation engine. Only 11% of respondents said they had no plans to implement one.

For retailers, recommendation engines “apply an AI lens to customer engagement, taking hundreds of thousands of marketing offers and promotions at a retail level and determining the best combination of product offers and messaging for an individual,” Rubikloud’s Liu said.

Predictive search doesn’t just apply to product recommendations. It can also serve content from websites and apps for customers on the buying journey. Also known as “insight engines,” these AI-enhanced content management tools suggest content for people to view based on their profile and digital history with the brand.

Montreal-based Coveo was a pioneer in the indexing space, which organizes companies’ internal content and makes it discoverable with search. Advances in AI have now made search predictive, and it has applications for both internal and customer-facing use cases.

“The industry has matured to where it is now, delivering predictive insights using machine learning and analytics,” said Diane Tetrault, senior director of product marketing at Coveo. “One of the primary use cases is for digital marketers and delivering personalized content from a website.”

Traditional websites are hard coded to present content based on what page a person surfs to on the site. With predictive capabilities, the website can recommend content based on user history or patterns in how they navigate a particular site. Coveo worked with Fasken, a legal services firm, to make its website capable of predictive search and recommended content. Fasken reported that time on its site increased 22%, a 32% increase in search utilization, a 46% increase clickthrough rate on suggestions made by machine learning and a 12% increase in registrations for webinars and email marketing.

## Voice Search

The popularity of smart speakers like Google Home and Amazon Echo has led many marketers to consider a voice strategy that includes search and conversational marketing. Search terms are different when spoken instead of typed, and brands need to understand the semantic nuances.

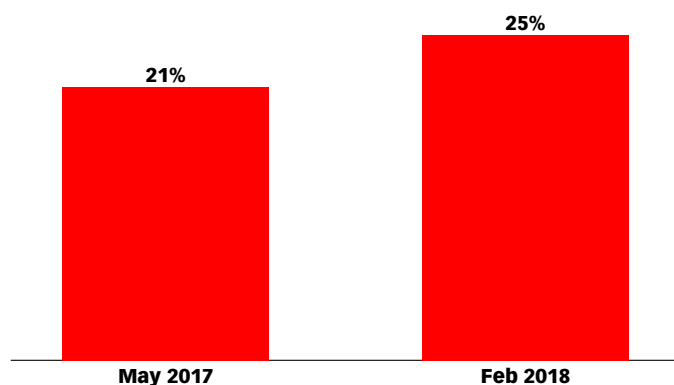
For more information on how brands are using voice technology to increase engagement in, read eMarketer's report, "[Marketing Beyond the Screen: Using Voice Technology to Boost Brand Engagement.](#)"

"Voice SEO will definitely be an important category in making sure that you can have semantic data attached to your products and content so that you're ranked highly," Automat.ai's Mauro said. "Brands are increasingly thinking about it as conversational AI, as a layer to their marketing staff."

A quarter of internet users in Canada surveyed by Solutions Research Group in February 2018 said they used a voice assistant, which was defined as any device like a smartphone, smart speaker or connected TV with voice recognition. That was up from 21% in May 2017.

### Internet Users in Canada Who Use a Voice Assistant, May 2017 & Feb 2018

% of respondents



Note: ages 12+; in the past week; e.g., Siri, Google Assistant, Cortana, Alexa; via any device such as smartphone, smart speaker or connected TV  
Source: Solutions Research Group (SRG), "Digital Life Canada" as cited in press release, April 16, 2018

238233

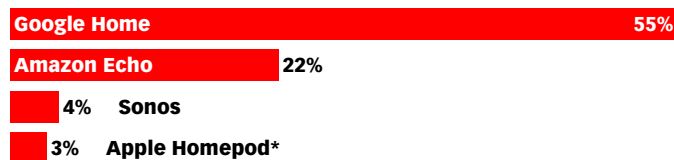
www.eMarketer.com

Specifically, smart speaker ownership was pegged at 8% of consumers, based on a representative survey sample by Edison and Triton Digital, also from February 2018.

Google Home was the most popular brand of smart speaker in Canada, owned by 55% of respondents in a May 2018 poll conducted by Media Technology Monitor. Fewer than a quarter (22%) of respondents owned an Amazon Echo, while 4% owned a speaker from Sonos and 3% owned Apple's HomePod, even though it hadn't officially launched in Canada at the time the survey was conducted (It launched in Canada on June 18).

### Smart Speaker Brands Owned by Smart Speaker Owners in Canada, May 2018

% of respondents



Note: ages 18+; \*not yet launched in Canada at the time of the survey  
Source: Media Technology Monitor and CBC/Radio Canada, "Top 5 Sneak Peek," June 21, 2018

239128

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While these penetration rates are still relatively low, growth is expected and will have an impact on how people search for products. One-third of worldwide ad professionals responding to a Marin Software poll for “The State of Digital Advertising 2018” report cited voice search as a challenge that will impact their business this year.

## KEY TAKEAWAYS

- **Brands in Canada are uniquely positioned to partner with AI innovators.** As a key research country for machine learning, several startups are based in the market and are willing partners focused on making digital marketing more effective. In cities like Montreal, Toronto and Edmonton, the CA\$125 million federal Pan-Canadian Artificial Intelligence Strategy is funding collaboration between academia and the private sector.
- **Marketing is among the primary disciplines for machine-learning research and development.** Better campaign management in search and programmatic display and customer engagement are just a couple of areas where brands can up their marketing game with AI.
- **Consumers in Canada are now more aware of their daily interactions with AI.** As a result, they are becoming more open to increased reliance on the technology on their phones (with virtual assistants like Siri) and in their homes (via smart speakers like Amazon Echo and Google Home). For marketers, this growing consumer acceptance of AI means an opportunity to design meaningful touchpoints that are mostly automated and increasingly predictive.
- **AI chatbots have become a popular testbed for automated routine consumer engagement.** The vast majority of chatbots in North America have been deployed on Facebook Messenger, which was opened up to developers in early 2017. Since then, brands have gone beyond using chatbots to handle customer service to more revenue-driving demand generation aims. In financial services, banks are developing fuller concierge-type services via mobile apps and websites that simplify transacting and recommend complementary services.

- **Recommendation engines have become instrumental in driving consumer actions, especially in online retail.** Amazon’s heavy investment in personalization based on purchase history and other inputs has shown that the buyer journey can be accelerated with predictive capabilities. For digital marketers, recommendation capabilities in delivering content has also developed to make website visits stickier.

## EMARKETER INTERVIEWS

### How Financial Brands Create Virtual Assistants that Respect Users’ Privacy



**Hossein Rahnama**  
CEO, Founder  
Flybits

*Interview conducted August 31, 2018*

### WestJet’s Chatbot Is an Ongoing Project—Not a One-Time Execution



**Alfredo Tan**  
Chief Digital and Innovation Officer  
WestJet

*Interview conducted September 5, 2018*



**Dan Code-McNeil**  
Head, Design  
Ada Support

*Interview conducted August 31, 2018*



**Kerry Liu**  
CEO  
Rubikloud Technologies

*Interview conducted September 1, 2018*



**Shawn Lowe**  
Vice President, Growth and Partnerships  
Time and Space Media

*Interview conducted August 22, 2018*



**Devon MacDonald**  
CEO  
Mindshare Canada

*Interview conducted September 13, 2018*



**Andy Mauro**  
CEO, Co-Founder  
Automat.ai

*Interview conducted August 21, 2018*



**Stephen Menon**

*Product Leader*

**Finn.ai**

*Interview conducted August 30, 2018*



**Curtis Stange**

*President, CEO*

**ATB Financial**

*Interview conducted September 11, 2018*



**Diane Tetrault**

*Senior Director, Product Marketing*

**Coveo**

*Interview conducted September 11, 2018*



**Beth Thouin**

*Vice President, Marketing*

**Acquisio**

*Interview conducted August 31, 2018*

**PwC**

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**Sklar Wilton & Associates**

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