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# ARTIFICIAL INTELLIGENCE TRENDS 2019 ROUNDUP

March 2019

The artificial intelligence (AI) ecosystem is complex and in a state of constant flux. Though far from perfect, one thing is certain: Many business leaders are already bullish about AI's ability to improve operations. eMarketer has curated this Roundup of articles, insights and interviews to help you understand the latest trends in AI.

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# SPONSOR MESSAGE

Braze is a customer engagement platform that delivers messaging experiences across push, email, apps and more. Braze is set apart as the platform that allows for real-time and continuous data streaming, replacing decades-old databases that aren't built for today's on-demand, always-connected customer.

The Braze Intelligence Suite is a set of features built to help you answer the what, when, and who of your marketing campaigns by targeting the right customers, selecting the strongest message, and delivering it all at the optimal time for each individual customer, at scale. Braze has been at the forefront of embracing AI to automate decision making at key engagement points in the customer journey. We're glad to bring you the latest data and best practices on the future trends of AI to explore how you can use AI to enhance your customer experiences.

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# OVERVIEW

**The AI ecosystem is complex and in a state of constant flux. Though far from perfect, one thing is for certain: Many business leaders are already bullish about AI's ability to improve operations. In a 2018 survey, the Economist Intelligence Unit (EIU) found that senior executives worldwide expect AI to improve growth, productivity, innovation and job creation in their respective countries and industries.**

**Which Operational Areas Do Senior Executives Worldwide Expect AI to Improve in the Next 5 Years?**  
% of respondents, 2018



Note: those responding "expect improvement"  
Source: The Economist Intelligence Unit (EIU), "Intelligent Economies: AI's transformation of industries and society" sponsored by Microsoft, July 29, 2018  
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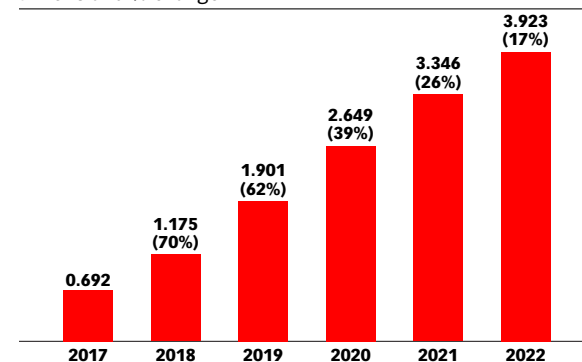
As a result, AI is attracting significant investment. A December 2018 forecast from tech research firm Tractica estimated that the worldwide market for AI software was worth \$5.4 billion in 2017, and would grow to \$105.8 billion by 2025. This amounts to 45% compound annual growth over an eight-year forecast period.

Measured another way, Gartner estimated in 2018 that the business value derived from AI among enterprises worldwide—based on its impact on customer experience, new revenues and cost reduction—would hit \$3.923 trillion by 2022, up from \$692 billion in 2017.

Among AI's top selling points is its ability to help humans make quicker and more informed decisions that lead to greater efficiency. The EIU research found that businesses were applying AI technology to a variety of use cases across the enterprise. The most common included predictive analytics, real-time operations management, customer service, risk management, unearthing customer insights and improving customer experiences.

## Businesses are in various stages of implementation.

**Business Value of Artificial Intelligence Among Enterprises Worldwide, 2017-2022**  
trillions and % change



Note: defined as value derived from AI's impact on customer experience, new revenues and cost reduction  
Source: Gartner as cited in press release, April 25, 2018  
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And April 2018 research by UBM found that tech professionals in North America expected AI to have the most impact on enterprises for its ability to provide new operational intelligence, automate repetitive tasks and improve workforce productivity.

Businesses are in various stages of implementation. A December 2018 PwC report found that 27% of companies surveyed had already deployed it in multiple areas of their organization, while another 20% planned to implement it throughout the enterprise in 2019.

## What Do Senior Executives Worldwide See as the Top Use Cases for AI?

% of respondents, 2018



Source: The Economist Intelligence Unit (EIU), "Intelligent Economies: AI's transformation of industries and society" sponsored by Microsoft, July 29, 2018

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AI is no longer a futuristic, sci-fi trope. After years of development, AI technologies—including machine learning (ML), natural language processing (NLP) and computer vision—are transforming organizations and freeing up employees to do higher-value work. For marketers and advertisers, AI is already disrupting core functions, including ad targeting, media buying, content creation and propensity modeling. This Roundup will explore these AI trends to help you get started.

## AI [...] is freeing up employees to do higher-value work.

## In Which Areas Do Tech Professionals in North America Expect AI to Have the Most Impact on Enterprise Business?

% of respondents, April 2018



Note: maximum 3 responses allowed

Source: UBM Technology Group, "AI: Hype or Substance," July 16, 2018

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# EXPLAIN YOURSELF, AI

## 61% of execs say creating provable AI methods is a critical step this year

**As use of AI grows (27% of executives in a PwC study have already implemented AI), so do calls for ways to interpret how AI models make decisions. This has given rise to a new buzzword: explainable AI, which refers to algorithms that make decisions humans can explain. PwC, for example, says it “integrates risk mitigation and ethical concerns into algorithms and data sets from the start.”**

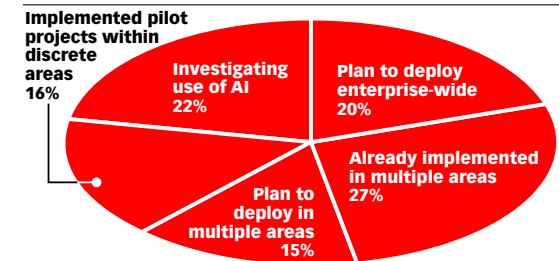
Sixty-one percent of executives surveyed by PwC said creating transparent, explainable, provable AI methods was a step they planned to take in 2019.

Krishna Gade, a former engineering manager of Facebook’s News Feed, and Amit Paka, who worked on Samsung’s shopping apps, saw a need for a platform that could clearly explain to company shareholders how AI models make decisions. They founded Fiddler Labs to do just that.

Samsung used machine-learning systems to recommend products to users, but it was difficult to measure return on investment (ROI) and compare new models to older ones, Paka told CNBC. At Facebook, Gade’s challenge was measuring how well the News Feed was working on any given day. “We needed to build tools and platforms to unlock this thing and provide those insights to an engineer all the way to an executive within Facebook,” he said.

## New buzzword: explainable AI

**How Far Along Are US Executives in Deploying AI?**  
% of respondents, 2018



Note: n=633 at companies that are investigating or implementing AI  
Source: PwC, “2019 AI Predictions: Six AI Priorities You Can’t Afford to Ignore,” Dec 1, 2018

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# THE AI TERMS YOU NEED TO KNOW

## An Overview of AI Tech

**In its most broadly understood definition, AI involves the ability of machines to emulate human thinking, reasoning and decision-making. But the terminology can often get confusing. Here is a rundown of some common AI terms.**

**Machine learning (ML):** The branch of AI computing that involves training algorithms to perform tasks by learning from previous data and examples rather than explicit commands programmed by humans. Marketers often use ML when they want to optimize processes. Over time, these algorithms develop abilities and improve their own performance. Most AI technologies—including computer vision and natural language processing—are rooted in machine learning and its more complex descendant, deep learning. When companies talk about AI capabilities in their products and services, they are frequently talking about machine learning.

**Deep learning:** A complex branch of ML that involves building and training neural networks with multiple layers. Each network layer can use output from the layer above it to learn and make intelligent decisions on its own. Deep networks shine when sorting and classifying data and identifying anomalies in data patterns and excel at image and speech recognition, but they need more powerful machines than ML, and it's often difficult for humans to understand how they work.

**Neural networks:** ML algorithms and computational models designed to function like neurons in the human brain. Neural networks are trained with specific sets of data points, which they use to guess at an answer to a query. The network's guess is then compared with the correct answer for each data point. If errors occur, the "neurons" are tweaked and the process repeats itself until the error levels decrease. This algorithmic approach, called backpropagation, is similar to statistical regression.

**Computer vision:** Also called machine vision. The branch of AI that deals with interpreting and extracting meaning from visual elements in the real world, including printed characters or images such as faces, objects and scenes.

It also incorporates image processing, pattern recognition and image understanding (turning images into descriptions that can be used in other applications). Computer vision underpins many up-and-coming innovations, including self-driving cars and cashierless stores.

**Natural language processing (NLP):** A branch of AI that deals with a machine's ability to understand spoken or printed words in human (natural) languages, as opposed to computer programming languages. These technologies power conversational interfaces, including chatbots and virtual digital assistants and are heavily used by search engines for spam filtering and their ability to extract information from large and complex documents.

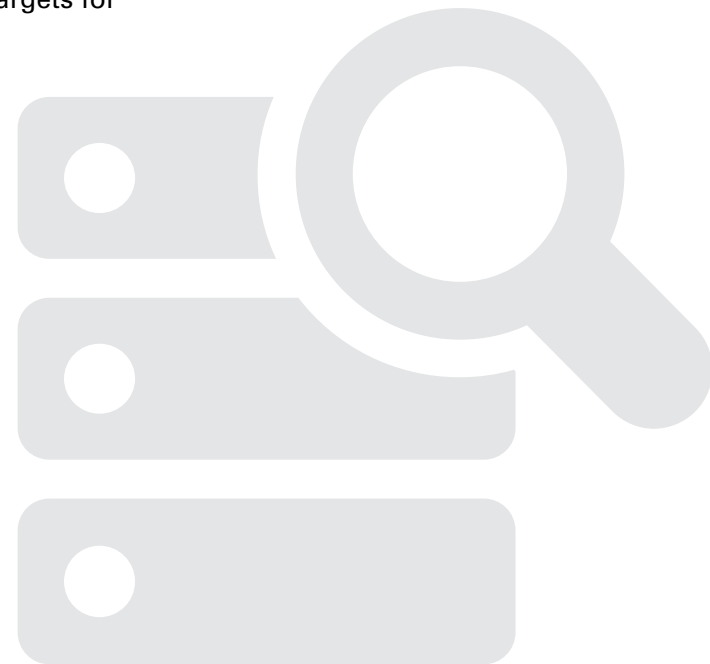
**Natural language generation (NLG):** A subset of natural language processing in which a computer makes decisions about how to comprehend a specific concept and put it into words. The technology can be used to automate manual processes for data analysis, such as personalized form letters and other types of communication at scale. It can also dynamically create communications—including basic news articles and real estate listings—that meet specific goals.

**Chatbot:** A computer program that uses a set of rules to conduct a speech- or text-based conversation with a human over an online chat interface. Chatbots are increasingly powered by AI and use NLP and NLG to mimic human conversation. Marketers often choose applications powered by this type of conversational AI when they want to interact with an audience.

**Virtual digital assistants:** A more sophisticated version of a chatbot, also known as an intelligent agent, voice assistant, virtual intelligent assistant, automated assistant or virtual agent. Such assistants can organize, store and output information based on the user's location and can answer voice- or text-based queries from the user with information from a multitude of online sources (e.g., weather forecasts, maps, stock prices or transportation schedules). Examples include Apple's Siri, Google Assistant, Amazon Alexa and Microsoft's Cortana.

**Recommender systems:** Also known as recommendation engines. AI-driven information filtering systems that can automatically predict user preferences and responses to queries based on past behavior, one user's relationship to other users, similarity among items being compared and context. High-profile examples of recommender systems include Amazon's "frequently bought together" feature and Netflix's CineMatch algorithm. Similar algorithms are also used by social networks such as Facebook, LinkedIn and Ancestry.com to find connections among people and data and to identify targets for marketing campaigns.

**Predictive analytics:** Programs that use a combination of techniques from data science, statistics and AI to analyze sets of structured and unstructured data, uncover patterns and relationships, and use them to make predictions about probable future outcomes and events. Predictive analytics models are closely related to prescriptive analytics models, which incorporate a predictive model but go a step further to produce actionable data and track outcomes.





# MAKING SENSE OF LARGE DATA SETS IS AI'S STRENGTH

## A handy timesaver

**With investment in artificial intelligence poised to grow, people are finding creative ways to deploy the emerging technology. While AI is known for the way it automates various tasks from ad buying to song writing, its greatest strength may be in how it helps business professionals quickly make sense of large amounts of information.**

In a February 2018 Globant survey of 679 senior-level decision-makers in the marketing, IT and operations fields, about half of respondents said that AI could immediately improve their business by helping them surface consumer insights from massive data sets. For workers crunched on time, this is a promising feature.

For marketers, using AI to parse through data sets can be a handy tool to better target and reach users. In a May 2018 survey of 400 worldwide digital advertising professionals conducted by Econsultancy and MediaMath, just one-fifth of respondents said they don't plan to use AI for audience targeting or audience segmentation. Nearly half already use AI for these purposes.

As the amount of data that marketers rely on continues to grow, AI vendors may find that their niche is in helping digital marketers swiftly parse through the complexity that stands between them and their users

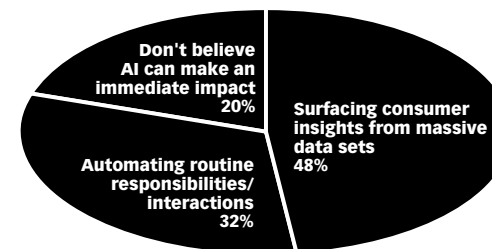
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**For workers crunched on time, [AI] is a promising feature.**

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**Which Type of Artificial Intelligence Do US Decision-Makers Think Would Make the Most Immediate Improvement to Their Business? Feb 2018**  
% of respondents

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Source: Globant, "2018 Artificial Intelligence Technology Business Guide," Sep 17, 2018  
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# ENTHUSIASM RUNS HIGH FOR AI, BUT MANY ARE STILL ON LEARNING CURVE

## Majority of business leaders see potential, but implementation takes time

**No longer a futurist's daydream, artificial intelligence is attracting significant investment and growing quickly. According to a December 2018 estimate from tech research firm Tractica, the direct and indirect application of AI software generated \$5.4 billion in worldwide revenues in 2017, and is forecast to produce a whopping \$105.8 billion by 2025.**

Business leaders are enthusiastic about AI's potential to make their organizations more efficient. Ninety percent of global senior executives surveyed by the Economist Intelligence Unit (EIU) in 2018 said they expected AI to positively impact growth, and 86% said that it would impact productivity.

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**16% of companies said they had pilot projects using AI**

While the enthusiasm is there, the implementation of AI technologies does require some time to get started. A December 2018 PwC report found that just 27% of companies had already implemented AI in multiple areas, while 20% planned to deploy it across their enterprises in 2019. Another 16% of respondents said they had pilot projects using AI within discrete areas.

Data from UBM suggests that tech professionals are in the early phases of getting AI off the ground—and were still in a bit of a learning curve. The April 2018 survey of 182 tech professionals in North America involved in tech purchases for their employers found that 30% had plans to learn from the success and failure of early adopters in the next 12 months, 26% had plans to get advice from third-party experts, and 23% planned to train existing staff in the upcoming year.

### An Investment Worth Making

AI promises to free up employees to focus on higher-value work without being stuck doing the same, repetitive tasks. Christian Monberg, CTO of Zeta Global, cites how data analysts can use AI to make informed business decisions. For example, instead of running SQL queries all day, data analysts can look at the graphs to determine brand engagement over time, or even conduct frequency analyses to understand how to optimize journeys for individuals across channels.

To convince stakeholders that AI is worth their time, Raj Balasundaram, vice president of solutions and strategic services at Emarsys, takes a step-by-step approach. “We map out [the stakeholders’] entire journey and say, ‘Your bottlenecks are here and here.’ We can reduce the time they’re spending [on certain activities] by replacing them with algorithms and machine learning,” he said.

## Marketing Departments Gear Up

So far, marketing and advertising have been among the top early applications of AI. A 2018 survey from Accenture, SAS and Intel found that marketing functions were some of the most popular areas for deploying AI among business executives worldwide. More than 70% of respondents said they had deployed AI for external communications work, and 66% said it was currently being used in the marketing/sales department. In his job as chief product officer at MadisonLogic, Sonjoy Ganguly sees marketers using AI in four main areas: segmentation, messaging, media activation and analytics. A July 2018 study by Adobe and Econsultancy had similar conclusions.

As AI continues to evolve, marketers are raising their expectations for what it can do. On the agenda includes a better understanding of what customers need and connecting the online and in-store experience.

### What Are Agency vs. Client-Side Creative & Design Professionals Worldwide Using Artificial Intelligence for? Jan 2018

% of respondents

	Client-side	Agency
Analysis of data	54%	45%
Email marketing	29%	40%
Creative and design work	29%	28%
Programmatic advertising	24%	34%
Automated campaigns	22%	36%
Content creation	22%	34%
On-site personalization	22%	36%
Optimization and testing	20%	28%
Video recognition or processing	20%	21%
Image recognition or processing	17%	23%
Digital asset management	15%	19%
Automated offers (e.g., coupon codes)	7%	21%
Other	2%	4%
Don't know	2%	4%

Note: agency n=47; client-side n=41

Source: Econsultancy and Adobe, "2018 Digital Trends for Creative and Design Leaders," July 3, 2018

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### What Do Consumer/Retail Executives in Select Countries See as the Greatest Opportunities Offered by AI?

% of respondents, Sep 2018

	US	UK	Switzerland	China	Total
Greater understanding of customer needs and deeper consumer insights	48%	38%	44%	48%	45%
Connection between online and in-store experiences	42%	50%	42%	34%	42%
Enhanced ability to personalize the customer experience	36%	34%	38%	60%	42%
More streamlined customer journey	32%	48%	36%	30%	37%
Frictionless mobile experience	28%	26%	40%	14%	27%

Source: Boyden, "AI and the Consumer & Retail Revolution" conducted by FTI Consulting, Nov 13, 2018

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## Marketers are using AI for segmentation, messaging, media and analytics.



# WHY MARKETERS USE AI FOR AUDIENCE TARGETING

## Nielsen, IBM and Salesforce have invested millions in AI products

**There are many ways that marketers can use artificial intelligence (AI), but so far, targeting and audience segmenting are among the most common uses for the emerging technology.**

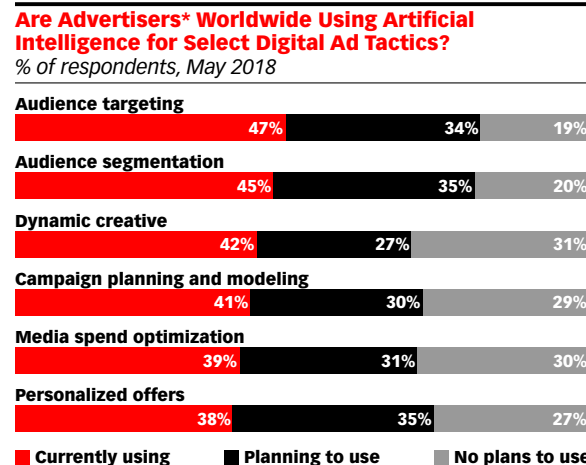
In a May 2018 survey of 400 digital advertising professionals worldwide conducted by Econsultancy and MediaMath, just one-fifth of respondents said they didn't plan to use AI for audience targeting or audience segmentation. Nearly half of those polled already used AI for these purposes.

Using AI to group together and reach users is simply a pragmatic way to utilize the technology. In a January 2018 survey of 450 advertisers, publishers and tech developers in North America by Winterberry Group and the Data & Marketing Association (DMA), 62.0% of respondents said that improving audience segmentation to support better ad targeting was one of their top campaign management priorities.

Given that improving audience segmentation is considered by many advertisers to be their top campaign management goal, it makes sense that large cloud companies like Nielsen, IBM and Salesforce have invested millions in AI products that automate the creation of custom audience segments for marketers.

About four in 10 of the advertisers surveyed by MediaMath and Econsultancy said they use AI for media spend optimization. This is another application of AI that is increasing among marketers as their demand-side platforms add AI features to increase the probability that a given programmatic bid will win its auction.

AI products can require significant investment. However, the technology's uptake is poised to grow. In a May 2018 Forrester Consulting survey of 433 decision-makers in Western Europe and the US, nearly half of those polled said they plan to make a major investment in AI within the next year.



Note: n=260; \*includes ad agencies, brand advertisers and tech vendors  
Source: Econsultancy, "Dream vs. Reality: The State of Consumer-First and Omnichannel Marketing" in partnership with MediaMath, Sep 10, 2018  
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# SUCCESSFUL AI ADOPTION REQUIRES CLEAR STRATEGIES

## Getting AI products off the ground takes a lot of effort

**One of the most crucial aspects of setting up AI products is making sure that a clear strategy is driving its adoption.**

In a McKinsey & Company survey of 2,135 professionals at companies from various industries worldwide, 43% of respondents said a lack of a clear strategy was one of the most significant barriers their organizations faced in adopting AI. Just 18% said their companies had clear AI strategies in place.

“Strategy is a huge component for many companies, because it’s hard for people to wrap their heads around what AI can be used for,” said Paul Bannister, executive vice president of strategy at CafeMedia. “Unlike prior industry transformative technologies—like moving from paper to digital—it’s hard for many businesspeople to understand how the tech works and how to apply it to their business needs, so the strategy part is really about connecting the dots there.”

Good AI strategies are built around multidisciplinary internal teams, according to Bannister. To have a successful AI strategy, it’s critical for companies to connect their technology, data and business teams. It’s

beneficial to have technologists working on business teams and people with a business background working within technology groups, he said.

“A clear strategy will add trust in the organization to overcome psychological barriers and add funding in the right places to overcome technological and infrastructure barriers,” said Omri Mendellevich, co-founder and CTO of DynamicYield.

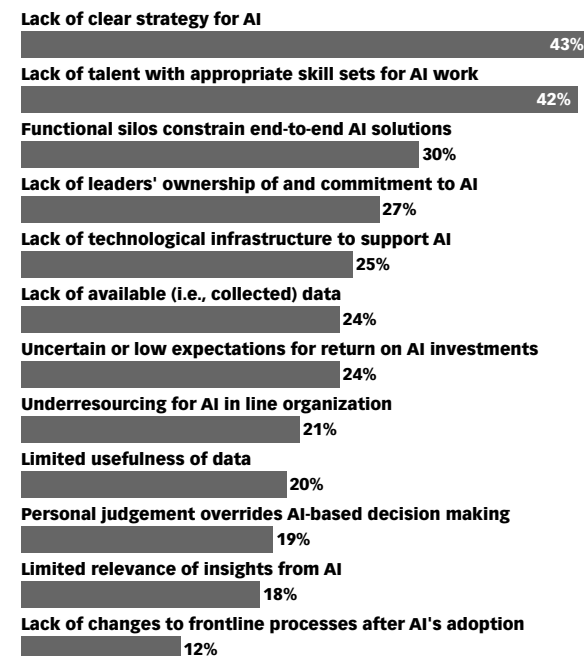
Another issue is that some companies apply AI to problems where AI isn’t the appropriate solution, according to Arnab Bhadury, data scientist at Flipboard.

“AI may not be the right solution, and it may even create more issues, especially if you don’t fully understand the algorithms,” Bhadury said.

Getting AI products off the ground takes a lot of effort. In a July 2018 survey of 200 US and European IT executives conducted by Databricks and International Data Group, 56% of respondents said that preparing large data sets is a very challenging aspect of moving AI concepts into production.

### What Do Professionals Worldwide See as the Most Significant Barriers Organizations Face in Adopting AI?

% of respondents, Feb 2018



Note: n=1,646 whose organization has piloted or embedded AI in at least 1 function or business unit; responses of "other" or "don't know/not applicable" not shown  
Source: McKinsey & Company, "AI Adoption Advances, but Foundational Barriers Remain," Nov 13, 2018

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# GET YOUR AI HOUSE IN ORDER

## Make Sure You're Ready to Embrace Customer Engagement's Data-Driven Future

This post was contributed and sponsored by [Braze](#).

**Many brands think they're behind in leveraging artificial intelligence (AI) for their customer engagement efforts—maybe you're one of them. But while it can be tempting to jump ahead and dive into AI full bore, you first need to ensure you're prepared to leverage it effectively.**

Even if you don't have AI systems on your radar now, ensure your company has taken the table-stakes steps to make the most of this kind of technology. The future is looking increasingly data-driven, and companies that pile on data debt instead of taking steps to get their houses in order simply won't be able to respond effectively to the changing landscape they'll face.

From the beginning, make sure you're collecting customer information and other data in ethical, sustainable ways. New legislation like the EU's General Data Protection Regulation (GDPR) and the 2018 California Privacy Act are putting a spotlight on how companies are managing user data, and it's increasingly likely that brands' ability to Hoover up endlessly huge quantities of data will go away in the coming years. As a result, it's going

to become even more essential to gather and protect the customer data you do have access to in a thoughtful, deliberate way.

Once you've tightened up your data, it's time to take a good, hard look at your business' goals. AI is a means to an end, and to use it effectively you should be crystal clear about what that end is. That means understanding where your company is today and where it's likely to be in ten years, and identifying places where AI can positively impact your path there. By creating that sort of strategic roadmap, you're creating a framework for your company to actually start looking at automating parts of your efforts using AI.

A common trap is assuming that AI will solve problems that you don't understand, or that it will help your business in some kind of vague, general way, as if there's a button you can press that says "Engage my customers... better." That's just not how AI works, and investing in it without being clear about what you're trying to accomplish is a recipe for failure.

Another common downfall? Not understanding what's possible and what isn't with the AI systems available to your business. Before you start trying to use AI to

support your efforts, make sure you're clear about the capabilities the systems you're looking at can really bring. Study up on what machine learning is good at doing, what the real applications are—both because there's a lot of snake oil and because AI is only going to become more important.

It's like this: if you're doing yardwork, look outside and figure out what has to happen and what tools you need to accomplish everything. If you need to build a stone wall, don't buy a chainsaw—only buy a chainsaw if you really need to cut down a bunch of trees (and definitely don't buy a chainsaw just because you read that chainsaw-ownership is the mark of an innovative brand). You need to know what AI can accomplish and what your goals are. Once you have that, then you can figure out how to apply it to your business. And that, ultimately, is how you make a difference for your customers. Unless the killer robots get us first ;-)

—Kevin Wang, Vice President of Product, [Braze](#)

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**you reminded Ted about the cartful of  
items he **already** purchased?**

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# CAN AI AND GDPR CO-EXIST?

## AI says, 'Give me more data!'; GDPR says, 'Slow down, buddy!'

**Training an artificial intelligence (AI) algorithm requires data—lots of data. But staying GDPR-compliant while acquiring that data can be almost impossible.**

Here's the problem: To make a decision about someone—e.g., that they like the color blue and should be targeted with blue advertisements—an AI algorithm combines their personal data with other data inside its big black box, and spits out the answer. To get the data the AI needs, GDPR requires companies to get consent to use that personal data, tell that person exactly what it's being used for, and guarantee it won't be used for anything else. But companies have no idea what's happening inside that black box, so true consent becomes a myth.

Article 22 of GDPR complicates the issue by giving consumers the right to not have an automated process make a decision about them that has legal repercussions or otherwise "significantly effects them." It also states that if someone asks for an explanation of how a decision was reached, a company must explain the reasoning. But once again, only the algorithm itself can explain its decision-making.

"It's one thing to look at a picture and say it's a cat or a dog. It's a totally different thing when you reject a medical claim on an insurance provider, the patient died and you're looking at a \$40 million lawsuit," said Ganesh Padmanabhan, vice president and head of marketing and business development at Cognitive Scale.

Adobe's product marketing manager Tatiana Mejia echoed his sentiment: "It can be particularly sensitive depending on the industry or geography, and there's a responsibility to give insight into what can be in a black box."

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**Only the algorithm itself can explain its decision-making.**





# RETAILERS AND SHOPPERS ARE ON TOTALLY DIFFERENT PAGES ABOUT TECH

## AI could save retailers \$340 billion annually

Retail executives and consumers in the US, the UK and Australia have widely disparate expectations about artificial intelligence's and virtual reality's effects on the retail sector.

A survey from Oracle NetSuite—conducted in partnership with Wakefield Research and Bob Phibbs, the Retail Doctor—found that 79% of retail executives in the three countries expected the presence of such technologies in stores to drive up sales. But just 14% thought AI and VR could significantly impact their purchase decisions.

These lukewarm findings coincide with other data gauging consumer interest in VR. Bizrate Insights polling from December 2018 found that half of US Internet users had never used VR or AR (augmented reality) while shopping and had no interest in doing so. More than one in 10 weren't even familiar with these technologies.

### How Interested Are US Internet Users in Using AR\* and VR While Shopping?

% of respondents, by demographic, Dec 2018

#### Gender



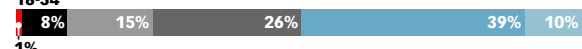
1%

#### Male



1%

#### Age



1%



1%



2%



1%

- Use it regularly
- Have used before, but don't use regularly
- Have not used, but very interested
- Have not used, but somewhat interested
- Have not used and not interested
- Don't know what this is

Note: ages 18-65; numbers may not add up to 100% due to rounding; \*for example: trying on clothing or makeup by superimposing an image onto yourself

Source: "The eMarketer Ecommerce Survey" conducted in December 2018 by Bizrate Insights, Dec 18, 2018

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[AI] can help retailers in not-so-obvious ways from the shopper's perspective.

The data suggests that newer technologies with the potential to fundamentally reshape how people shop may still be mired in the "inflated expectations" stage of Gartner's famed "Hype Cycle."

But that doesn't mean radical changes in the retail sector won't ever happen. AI, for example, has the potential to introduce a host of customer-facing, labor-saving practices such as chatbots and self-checkout. It can also help retailers in not-so-obvious ways from the shopper's perspective.

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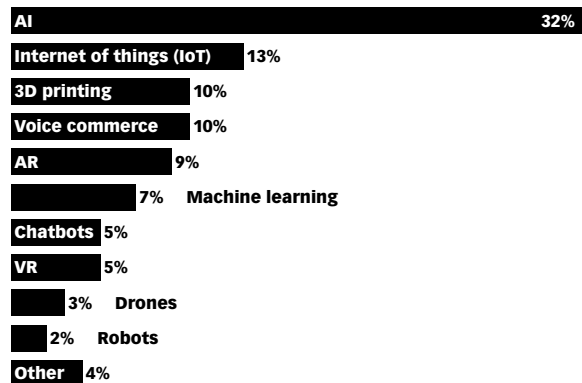
According to an August 2018 Capgemini survey of 400 retail executives worldwide, AI could save retailers \$340 billion annually as soon as 2022, with most of those savings resulting from the supply chain and return improvements.

Additional data from Total Retail, Radial and NAPCO Media found that nearly one-third of US retail industry professionals polled in late 2018 expected AI to have the biggest effect on the retail sector in 2019.

AI is revolutionizing the retail industry by making it cost-effective to deliver a completely personalized, immersive and optimized experience for every consumer at massive scale," said Daniel Druker, CMO of Instart.

## Which Technology Do US Retail Industry Professionals Think Will Have the Biggest Effect on the Retail Industry During 2019?

% of respondents



Note: n=198; more than 80% of respondents were retailers  
Source: Total Retail, Radial and NAPCO Media, "The 2018-2019 Retail Technology Report," Dec 13, 2018

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# HOW FINANCIAL BRANDS CREATE VIRTUAL ASSISTANTS THAT RESPECT USERS' PRIVACY



## HOSSEIN RAHNAMA

Founder, CEO

**Flybits**

**As virtual assistants like Apple's Siri and Google Assistant become a bigger part of consumers' lives, companies in Canada are exploring how to move beyond chatbots and create predictive "concierge" experiences for their customers. But it's a challenge to build a service that adds value, and isn't just a flashy use of artificial intelligence (AI). eMarketer's Paul Briggs spoke with Hossein Rahnama, founder and CEO of fintech AI firm Flybits, about why financial brands are ahead of the pack, and how they're creating and measuring these services.**

**eMarketer:** What brand categories are well-suited for these predictive, AI-based concierge services?

**Hossein Rahnama:** Our current focus is the financial services sector because these organizations have a lot of valuable data. They can use that data ecology to engage with their customers in a meaningful, micro-personalized fashion.

We see the same happening in other industries. Textile companies, for example, are getting into insurance because they're putting sensors in clothing, so they understand biological behavior and use that data to be relevant in the insurance business.

Data is also shifting these companies from one vertical to another. High-end retail brands like Louis Vuitton are getting into the hospitality business by building luxury hotels because they know their customers' purchasing patterns.

**eMarketer:** What are the primary use cases of AI for financial services companies?

**Hossein Rahnama:** They fall under three core areas of the financial sector. One of them is retail banking—under that is lending, mortgages, card services, fraud management and branch services. Banks are looking to add value through lifestyle customer engagement initiatives that go beyond just offering products.

Another vertical is asset and wealth management, which includes robo-advisors, bringing financial and investment data and applying it to the daily life of the customer to improve financial behaviors.

The third area is insurance—using AI data to make insurance products more understandable and usable.

**eMarketer:** What's an example of a concierge service in the financial sector?

**Hossein Rahnama:** TD Bank is one of our largest customers, and they serve close to 2 million people on a daily basis using TD For Me. Think about it as that embedded Siri or Google Now that understands the context and preferences of the user and tries to give them information and content that is relevant and contextual without compromising their privacy.

TD didn't want to have two different channels—one for customer engagement and one for core banking—so they decided to enable their existing mobile channel, which is their main mobile banking app. Their IT team put our SDK [software development kit] and capabilities into their app and gave all the control to the marketing department to deliver these micropersonalized experiences.

TD has a shared service unit called Digital Channels, which works with different business units across TD—card services, insurance or lending—and brings new concierge solutions to market.

**eMarketer:** In a highly regulated sector like financial services, what are the implications for solution design?

**Hossein Rahnama:** In terms of regulations, it's different from jurisdiction to jurisdiction. We offer all our services using GDPR [General Data Protection Regulation] compliance, which is originally a European directive, but is becoming globally recognized. It's the model in which the end customer owns the data and they share some aspects of that data with the bank in exchange for services.

We are also the ambassador of the program called Privacy By Design, which started in Ontario by the Privacy and Information Commissioner and is now receiving a lot of international recognition. The program's position is that we should not create a tradeoff between functionality and privacy. We should design systems with privacy in mind so that we can deliver great services to the customers, while respecting their privacy.

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*“The qualitative metrics demonstrate the value that the end customer receives and how much they interact with it.”*

**eMarketer:** What metrics are most important for AI-powered concierge services?

**Hossein Rahnama:** We categorize them into a qualitative bucket and a quantitative bucket. The qualitative metrics demonstrate the value that the end customer receives and how much they interact with it.

The quantitative business metrics are much easier to follow. These are things such as mortgage renewals, credit card upselling and cross sales, insurance policy activation and fraud prevention.

Some of these measures are being calculated on an aggregate basis on a community or neighborhood level, and some of them are on an individual level.

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