CHATBOTS ARE HERE TO STAY

So what are you waiting for?

Across industries, companies are discovering the potential of conversational bots—to help automate and streamline activities, improve enterprise productivity, and boost employee and customer engagement. While the earliest versions of conversational bots were simple response platforms, today's AI-powered bots are much more powerful—and will only become more sophisticated and capable in the coming years. And as recent Accenture research[1] reveals, executives clearly recognize bots' potential—as well as the challenges they need to overcome to realize the promise of this exciting emerging technology.

As digital continues to rewrite the rules of engagement across industries and markets, a new competitive reality is emerging: Companies will need to become intelligent enterprises to thrive and grow in the coming years. In the future, "being digital" won't be enough.

Organizations will use artificial intelligence and other technologies to help them make faster, more informed decisions, become far more efficient, and craft more personalized and relevant experiences for both customers and employees

One of the first stepping stones to this future are AI-powered messaging solutions, a category that includes a technology commonly referred to as conversational bots. A conversational bot is a computer program that works automatically and is skilled in communicating through various digital media—including intelligent virtual agents, organizations' apps, organizations' websites, social platforms and messenger platforms. Users can interact with such bots, using voice or text, to access information, complete tasks, or execute transactions.

Intelligent virtual assistants—such as Apple's Siri, Google Assistant and Amazon's Alexa—are themselves conversational bots, upon which third parties can build "skills" or unique conversational interactions by leveraging the Artificial Intelligence (AI), Natural Language Processing (NLP) and Machine Learning (ML) APIs/services these platform providers offer.

According to research by Accenture (see "About the Research"), CIOs and CTOs around the world believe conversational bots will play a critical role in the enterprise architecture of the future—and have the potential to make a huge impact on a company's operations:

Fifty-six percent say conversational bots are driving disruption in their industry, and 43 percent report their competitors are already implementing the technology.

Furthermore, 57 percent agree that conversational bots can deliver large return on investment for minimal effort.

In fact, executives expect conversational bots of the future to have a positive impact on their organizations in a variety of ways—particularly in helping to improve the customer and employee experiences (Figure 1).
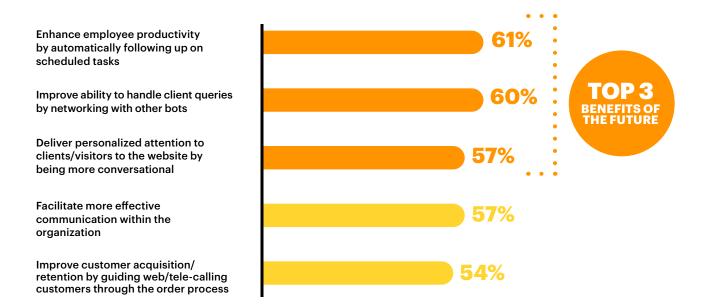
About six in 10 executives said bots can improve their organization's ability to handle customer queries by networking with other bots, and that they can deliver personalized attention to website visitors by being more conversational. Just over half believe bots can also help them improve customer acquisition and retention by guiding web and tele-calling customers through the order process.

Furthermore, 61 percent said bots can enhance employee productivity by automatically following

up on scheduled tasks, and 57 percent said they can facilitate more effective communication within the organization.

Additionally, executives said bots can help them provide 24x7 access to information, handle client queries more effectively, and improve customer acquisition and retention.

Interestingly, our research doesn't predict a wave of bots taking jobs from people. To the contrary, the ability to rationalize the company's headcount was the least-often cited impact of bots (about one in 10). In other words, ongoing reports in the media notwithstanding, bots and AI aren't expected to have a dramatic impact on the labor market.

Figure 1: How executives expect conversational bots of the future to help an organization.

Enhance employee productivity by automatically following up on scheduled tasks **61%**

Improve ability to handle client queries by networking with other bots **60%**

Deliver personalized attention to clients/visitors to the website by being more conversational **57%**

TOP 3 BENEFITS OF THE FUTURE

Facilitate more effective communication within the organization **57%**

Improve customer acquisition/retention by guiding web/tele-calling customers through the order process **54%**

Source: Accenture Experience Orchestration as a Service Survey, 2017

WHAT ARE THE TYPES OF CONVERSATIONAL BOTS?

Conversational bots come in four main "flavors."

Figure 2: The four common classes of conversational bots being deployed.

INFORMATIONAL ENTERPRISE PRODUCTIVITY TRANSACTIONAL DEVICE CONTROL

Informational

Informational bots uncover useful information and resolve customer and employee inquiries. They move beyond conventional search results to provide customer-and context-specific results that can be accessed via voice, text, or visuals, thereby reducing the effort required to get accurate results. Enterprises also can use these bots to push tailored product knowledge to customers or employees, which helps boost engagement.

Enterprise Productivity

Custom enterprise bots, an emerging application of the technology, can connect to enterprise data resources, streamline enterprise work activities, and improve efficiencies. Employees can use these bots to, for example, check sales numbers, determine the performance of marketing campaigns, or monitor inventory status. Enterprise productivity bots are great for scheduling meetings, speed and improve decision making, and foster greater collaboration.

Transactional

Transactional bots serve as powerful interfaces for mobile applications through which customers can book tickets, order food, and manage bank accounts. Such bots are still in their infancy—retailers, for instance, have launched bots to provide customer service or offer shoppers another way to browse, but the bots lack a payments functionality. This will change quickly as payments firms begin enabling bot purchasing. In fact, the success of voice-based conversational bots such as Alexa are helping to make voice a mainstream way to pay. Remittance firms also have been early adopters and are looking for ways to use bots to send funds to recipients.

Device Control

Device control bots support conversational interfaces that enable connected devices such as wearables, home appliances, and vehicles to interact with each other—thus enriching the user experience. For example, devices with virtual assistants such as smartphones and smart home speakers can work with smart home devices like thermostats, switches, and lights. That's a boon for home automation. Similarly, numerous automakers are rolling out their own Alexa-based capabilities. With just a few spoken commands, owners can check the fuel and charge levels of their cars or even start their vehicles from the comfort of their sofa.

WHERE DID BOTS COME FROM—AND WHERE ARE THEY HEADED?

Bots have been gradually evolving since the early days of simple text-based chatbots (Figure 3). In fact, bots that are prevalent today are a big step up from those of even just a few years ago.

The first version of conversational bots was built on simple response platforms—they could automate basic queries and be programmed to do specific tasks, thus improving efficiency and reducing costs. But they were limited to pre-programmed inputs and couldn't learn on their own.

Figure 3: The evolution of conversational bots

VERSION 1.0
Chatbot/Response Platforms

VERSION 2.0
First Generation of AI Powered Platforms

VERSION 3.0
Unsupervised Context Aware Learning Systems

VERSION 4.0
Multimodal Pervasive Systems

Source: Accenture Research

Today's bots, built on the first generation of AI-powered platforms, can learn over time and perform complex tasks combining one or more interfaces. But their learning is still supervised and limited to exposed datasets and information, they have limited interoperability between platforms, and they're dependent on hardware.

Soon, we'll see massive leaps in functionality as bots and associated technologies continue to advance. Within the next year, for example, bots will be able to act without human intervention and take relevant actions in light of a problem's context—although integration across nodes, interfaces, and ecosystems will remain a challenge.

Eventually, we expect bots to break through these constraints, working seamlessly across AI interfaces to become pervasive systems independent of modes.

Such highly evolved bots will remember context and previous conversations and generate responses based on this knowledge. At this point, conversational bots will be able to orchestrate complex and lengthy interactions such as co-creativity or advise on complex products such as pensions and life insurance.

The bottom line: The bot wave is building and the technology is poised to take center stage in the very near future—and companies need to begin preparing now.
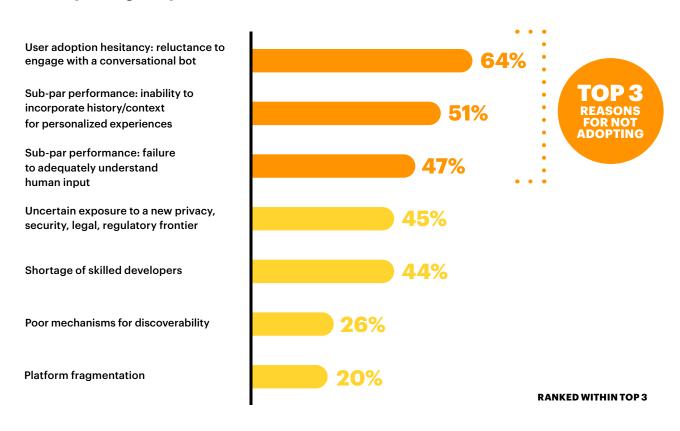
BUT MANY COMPANIES AREN'T SOLD ON BOTS—WHY?

Despite bots' potential benefits, a slight majority of companies are reluctant to embrace this new technology. Fifty-three percent of organizations in our research—primarily in the utilities and industrial equipment industries—have no plans to invest in conversational bots. Of these companies, 65 percent said their organization is taking a "wait and see" approach and just 9 percent reported having a clear strategy for leveraging conversational bots.

What's holding back these "rejecters"?

Executives reporting no plans to adopt conversational bots are most likely to cite three challenges they believe will make it difficult for bots to realize their potential (Figure 4). One is on the human side—they think users will be reluctant to engage with a bot—and that's critical because conversational bots, at their core, are communications channels, and if no one wants to use them, they won't have much impact.

Figure 4: Reasons executives reported their companies are not planning to implement bots.

Reason	%
User adoption hesitancy: reluctance to engage with a conversational bot	64%
Sub-par performance: inability to incorporate history/context for personalized experiences	51%
Sub-par performance: failure to adequately understand human input	47%
Uncertain exposure to a new privacy, security, legal, regulatory frontier	45%
Shortage of skilled developers	44%
Poor mechanisms for discoverability	26%
Platform fragmentation	20%

TOP 3 REASONS FOR NOT ADOPTING

RANKED WITHIN TOP 3

Source: Accenture Experience Orchestration as a Service Survey, 2017

The other two have more to do with bots' expected performance: Executives are skeptical that bots will be able to appropriately incorporate history and context to create personalized experiences and believe they won't be able to adequately understand human input.

Just under half of these executives also said concerns about security and privacy, the expense to acquire or build bots, and the immaturity of current solutions are important reasons for not implementing the technology. And another obstacle comes from the top: About four in 10 identified lack of senior leadership buy-in as a barrier to implementing conversational bots.

WHAT ABOUT BOT SUPPORTERS?

In contrast to bot rejecters are bot supporters: the 47 percent of executives Accenture surveyed representing companies that have already implemented bots or are planning to. These companies—which are most likely to operate in the health, communications, and banking industries—provide some initial hints as to how the bot landscape likely will unfold in the next few years.

Informational bots thus far are the focus of attention.

Informational bots are most popular in the health (64 percent), communications (59 percent), and banking (50 percent) industries.

A plurality (38 percent) of bot supporters have either already implemented informational bots or are planning to within the next three years.
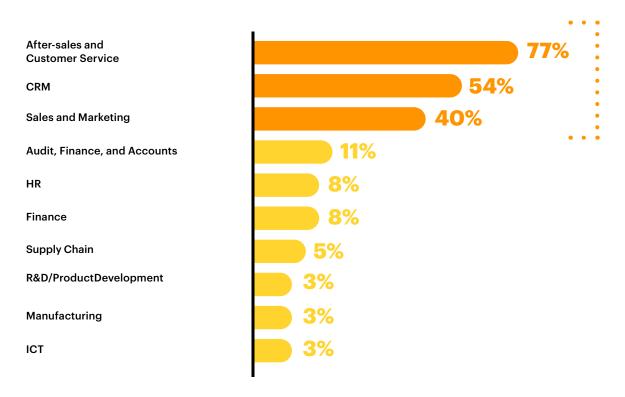
An additional one-quarter are using or planning to use enterprise productivity or transactional/commerce bots. Currently, only a small percentage are interested in bots for device control.
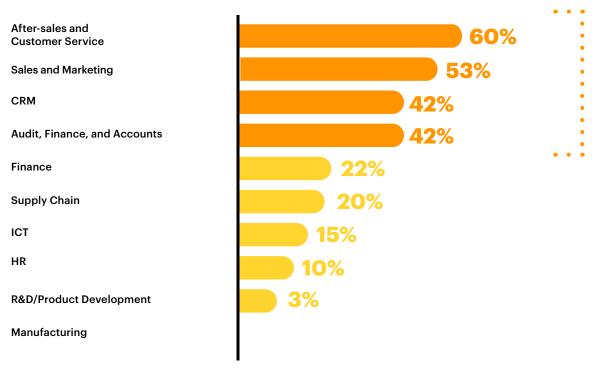
But regardless of the type of bots deployed, the vast majority of bots implemented to date have been customer focused (Figure 5). After-sales and customer service, CRM, and sales and marketing were far and away the most popular landing spots for bots currently in use. This trend looks to continue in the future (Figure 5), with the same three functions being the most-frequently cited for planned bot implementation—joined by audit, finance, and accounts. Not surprisingly, bots implemented in customer-related functions are overwhelmingly used to communicate externally, while those supporting audit, finance, and accounts have both external and internal communications duties.

Figure 5: Where executives have implemented or plan to implement conversational bots.
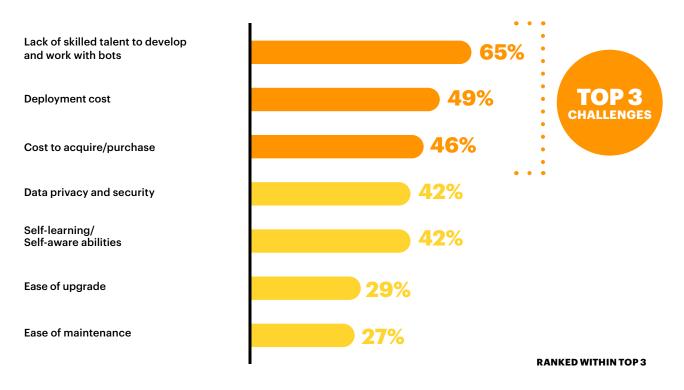
ALREADY IMPLEMENTED

After-sales and Customer Service	77%
CRM	54%
Sales and Marketing	40%
Audit, Finance, and Accounts	11%
HR	8%
Finance	8%
Supply Chain	5%
R&D/ProductDevelopment	3%
Manufacturing	3%
ICT	3%

PLANNING TO IMPLEMENT

After-sales and Customer Service	60%
Sales and Marketing	53%
CRM	42%
Audit, Finance, and Accounts	42%
Finance	22%
Supply Chain	20%
ICT	15%
HR	10%
R&D/Product Development	3%
Manufacturing	

Source: Accenture Experience Orchestration as a Service Survey, 2017

Yet even for bot supporters, bots are not without their challenges. Lack of skilled talent to develop and work with bots was cited by most executives as a challenge in implementing bot solutions, followed by deployment and acquisition costs (Figure 6). Data privacy and security are also prevalent concerns among bot supporters.

Figure 6: Challenges bot supporters have faced or expect to face when implementing bots.

Challenge	%
Lack of skilled talent to develop and work with bots	65%
Deployment cost	49%
Cost to acquire/purchase	46%
Data privacy and security	42%
Self-learning/Self-aware abilities	42%
Ease of upgrade	29%
Ease of maintenance	27%

TOP 3 CHALLENGES

RANKED WITHIN TOP 3

Source: Accenture Experience Orchestration as a Service Survey 2017

WHAT DOES THIS ALL MEAN FOR THE FUTURE?

Although challenges remain, the future for bots is, indeed, bright. The potential benefits are simply too difficult to ignore.

Just ask Amtrak, whose use of conversational bots has generated $1 million in customer service email cost savings annually—a reported 8x return[2]. Or communications firm Charter, where bots cut customer service costs by 44 percent in the first year and generated a 5x return in just six months[3]. Or soup ingredient maker Knorr, which saw a 50 percent increase in soup-stock cube consumption within just three months of launching a bot that gives recipe support to mothers[4]. Or even companies in the Accenture survey that have already implemented bots, 91 percent of which expect to see a 1x to 5x return on their investment within the first 12 months.

Such promise is no doubt a major reason why 78 percent of companies in the Accenture survey that have implemented bots, or intend to, plan to increase their investments in conversational bot technology in next three years—by an average of 3 percent.

Demand and supply indicators from other sources also suggest conversational technology is a high-growth market. Just one example: eMarketer expects the number of US millennials using voice-enabled digital assistants to rise from 29.9 million in 2017 to 39.5 million in 2019[5].

WHERE DO WE GO FROM HERE?

It's clear there's considerable momentum building for bot use, and we expect more companies to begin taking the plunge as early adopters' success with the technology grows. For companies that are just beginning the bot journey, the critical first step is to develop a bot strategy. This strategy should, among other things, address how the company makes its bots stand out in the sea of other bots customers will encounter; understands how customers will use bots and designs its bot experiences accordingly; fully integrates its bots with its mobile and web service; and deals with security and privacy. And it should be aligned with the company's broader technology vision and strategy and lead to a comprehensive road map that guides the company's bot efforts over time.

Beyond strategy, three other things are important to successful bot development, deployment, and use—and these apply to companies just dipping their toes into the bots water as well as those that have already begun.

01

Determine where and how to use them

Companies need to think about where to apply bots, and which type, to get the greatest return. Currently, informational bots are the most mature and have a proven track record in streamlining customer service and enhancing both customer and employee engagement. That's a good place to start—in many companies, it can be low-hanging fruit.

Take, for instance, Accenture's Code of Business Ethics (COBE) Chatbot. With today's complex business environment and ever-evolving legal and regulatory requirements, new situations arise where employees must carefully consider many factors to make the right decision. Accenture has created a well-defined code of business ethics that helps employees understand what's needed to act with integrity—and COBE gives them an easy way to access the information they need, when and how they need it. COBE enables employees to anonymously ask questions they may have about what's appropriate in certain circumstances—such as what are acceptable gifts for clients, whether they can use their work phone to make personal calls, or what to do if their computer is stolen. COBE is a powerful tool that can quickly and efficiently handle the business ethics information needs of Accenture's more than 435,000 people—and help Accenture sustain its commitment to ethical practices. COBE's foundation is Accenture's own Virtual agent BOT platform that integrates with most of the prominent third-party AI/NLP solutions and supports more than 10 channels through which users can to communicate.

Companies also need to understand how to effectively integrate bots with the workforce of the future. As the use of bots accelerates and becomes more pervasive over the next few years, their effectiveness will hinge on how well they work with a company's people. In fact, bots are really part of the first wave of intelligent machines that are revolutionizing how companies operate. In the coming years, an alliance between humans and increasingly sophisticated machines will enable companies to develop differentiated customer experiences; create entirely new products, services and markets; and boost employee productivity and enterprise efficiency. To fulfill this promise, companies must reimagine the nature of work today, redefine people's roles, shift the workforce to new business models, and scale up people's skills to harness these intelligent technologies.

02

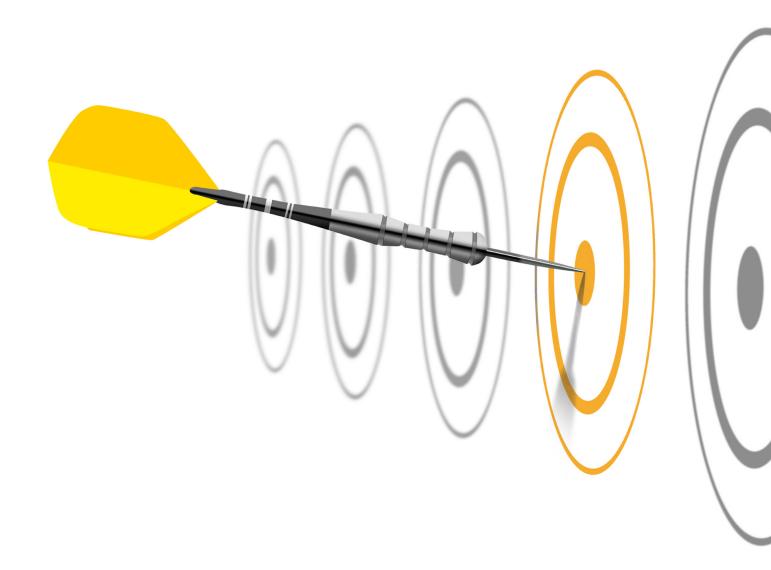## Set realistic expectations for returns

When it comes to ROI, conversational bots certainly have the potential to cut costs and increase revenue. But organizations should understand that a lot of what bots deliver can be intangible. For example, the top-or bottom-line impact of educating customers more effectively on a company's offerings, enhancing customer service workers' knowledge and productivity, or improving the customer journey experience is not always apparent. In other words, companies that implement bots need to be realistic about how they're measuring return and what kind of return they should expect.

03

Figure out the best way to get them built

There's also the talent crunch to contend with. Indeed, 60 percent of all executives in the Accenture research said their organization simply doesn't have the skills to develop and deploy bots in house. That's a major reason why 54 percent of bot supporters prefer to collaborate with external vendors to develop conversational bots or messaging solutions. Companies need to assess whether they're sufficiently equipped to handle bot implementation on their own and, if not, where to go to get the right help.

The fact is, with the AI future closer to becoming a reality, companies need to begin preparing to join that reality—or risk getting left behind. Bots are a small, manageable first step toward becoming an intelligent enterprise that can make better decisions more quickly, operate more efficiently, and create the experiences that keep customers and employees engaged.

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END NOTES

1   Source: Accenture Experience Orchestration as a Service Survey, 2017

2   Daniel Faggella, 7 Chatbot Use Cases That Actually Work, TechEmergence, September 15, 2017, https://www.techemergence.com/7-chatbot-use-cases-that-actually-work/; Helping a railroad service conduct business, Next IT Corp, http://nextit.com/case-studies/amtrak

3   Charter Communications improves speed of service, Next IT, http://nextit.com/case-studies/charter

4   LINE ChatBot case study: Knorr Auntie reply, Digital Training Academy, March 2017, http://www.digitaltrainingacademy.com/casestudies/2017/03/line_chatbot_case_study_knorr_auntie_reply.php

5   eMarketer, US Voice-Enabled Digital Assistant Users, by Generation, 2016-2019 (millions), May 3, 2017, https://www.emarketer.com/Chart/US-Voice-Enabled-Digital-Assistant-Users-by-Generation-2016-2019-millions/207532.

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ABOUT THE RESEARCH

Between August and September 2017, Accenture surveyed 97 chief information officers and 255 chief technology officers in 12 countries (Germany, Australia, Brazil, China, France, Ireland, Italy, Japan, Singapore, Spain, the United Kingdom, and the United States). Respondents represented companies across nine industries (banking, insurance, electronics and high-tech, communications, retail, consumer goods and services, health, utilities, and industrial equipment) with annual revenue of at least $500 million (one-quarter generate more than $15 billion in revenue). Slightly more than three-quarters (76.7 percent) of companies are business-to-consumer enterprises, while the remainder are business-to-business firms.

ABOUT ACCENTURE

Accenture is a leading global professional services company, providing a broad range of services and solutions in strategy, consulting, digital, technology and operations. Combining unmatched experience and specialized skills across more than 40 industries and all business functions – underpinned by the world's largest delivery network – Accenture works at the intersection of business and technology to help clients improve their performance and create sustainable value for their stakeholders. With more than 442,000 people serving clients in more than 120 countries, Accenture drives innovation to improve the way the world works and lives. Visit us at **www.accenture.com.**

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