



# CHATBOTS & CUSTOMER SERVICE

A Match Made in Heaven

# IQVIS

# CONTENTS

Summary .....	3
What is a Chatbot? .....	5
Why Chatbots Are Becoming Popular? .....	6
Chatbot Architecture .....	8
How Chatbot Works? .....	10
Chatbots in Customer Service .....	12
Will I Lose Control of My CX? .....	16
What to Expect from Your Chatbot? .....	18
How to Get Started? .....	20
About IQVIS .....	22
Our Core Expertise .....	22
Get a Free Assessment .....	22



# SUMMARY

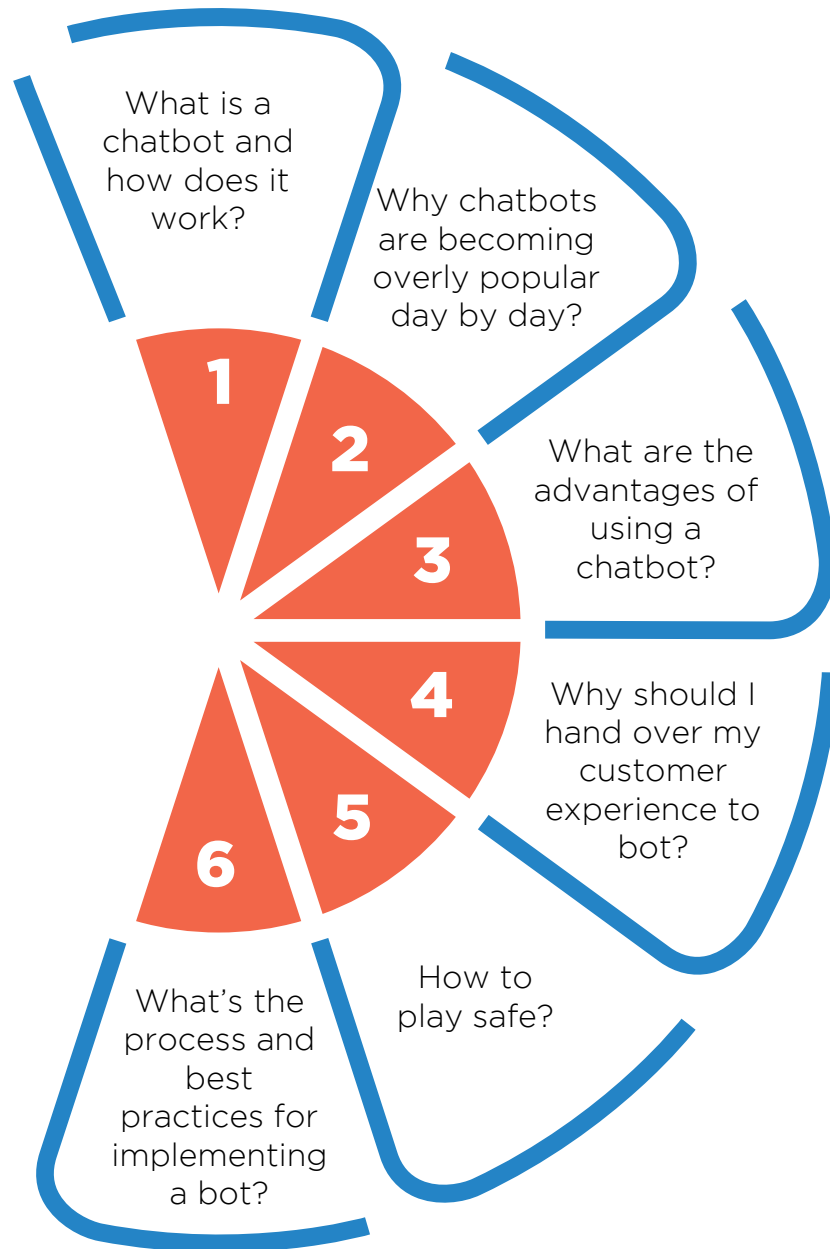


Chatbot is a computer program that you can talk to via text, chat windows or voice. Chatbots are becoming a huge growth area, with tech research giant Gartner predicting that by 2020, the average person will have more daily conversations with bots than they do with their spouse. The common advantages of chatbots include timely responses, 24/7 customer support, improved customer engagement, and reduction in CS cost by 30 to 70 percent.

Using AI-powered bots to communicate with customers can lead to better engagement and understanding. From handing out lifestyle advice to helping you find that perfect pair of shoes, chatbots are opening up a new era of business-customer interaction. According to IBM, businesses spend \$1.3 trillion on serving 245 billion customer inquiries every year, where the average cost of a phone interaction is between \$35 and \$50 but the cost of chat interaction is between \$8 and \$10/session.

This paper is aimed at helping you understand the conversational AI and how it's helping modern businesses in customer management and process optimization. You'll find out the answer to the basic questions surrounding chatbots, key concerns and their impact on customer service. At the end of this read, you'll be able to understand the following.

# SUMMARY



**While we do hope you enjoy this read, don't forget to share your critical feedback. Write us what you liked, did not like or didn't understand [info@iqvis.com](mailto:info@iqvis.com).**



# WHAT IS A CHATBOT?

Chatbot is a computer program that you can talk to via text, chat windows or voice. Also known as a talkbot, bot, or interactive agent, these programs are used in dialog systems for various practical purposes - like customer service.

While the trend of chatbots maybe new, but the term and concept is here for many years. Perhaps the earliest example was ELIZA, a program built by MIT in 1966 that simulated a therapist by using a script to respond to users typed questions with simple pattern matching. ELIZA's standard operating procedure involved the recognition of cue words or phrases in the input, and the output of corresponding pre-programmed responses that can move

the conversation forward in a meaningful way.

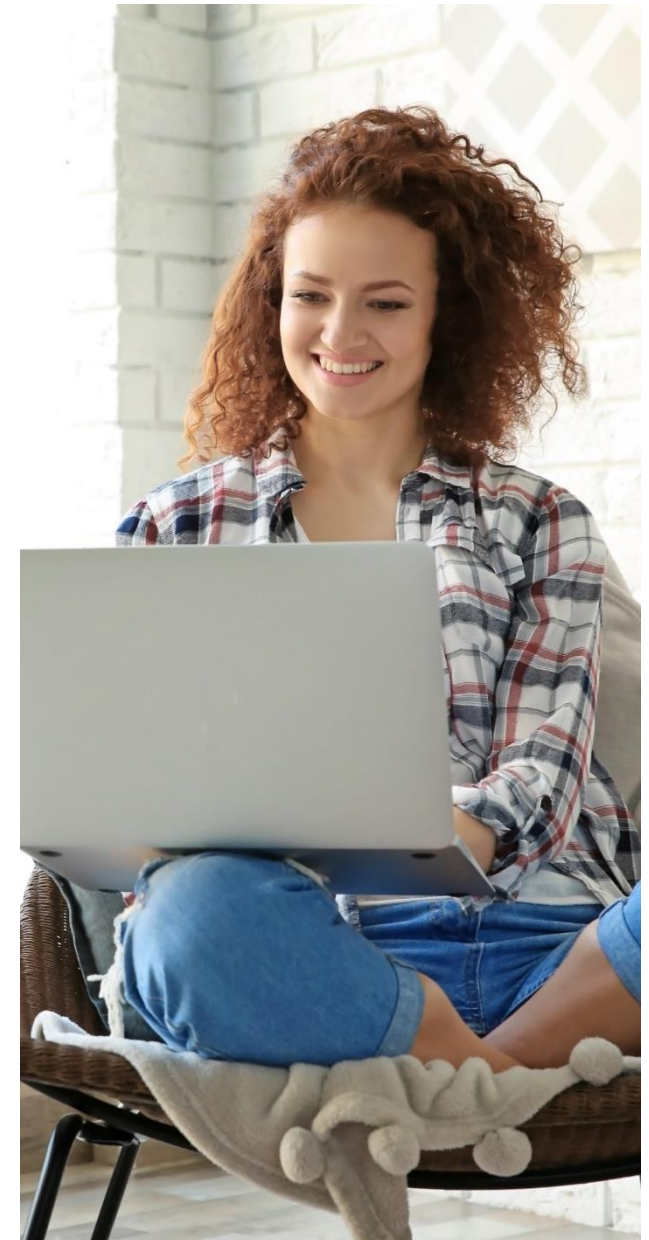
However, the term "chatterbot" was first coined and used by Michael Mauldin (also the creator of first Verbot, Julia) in 1994. He used these words in order to explain the conversational programs, powered by AI.

Today, chatbots are more powerful and dynamic, providing a wide range of services. Probably the most easy-to-understand example of chatbot is mobile virtual assistants such as Google Assistant and SIRI.

Since 2015, chatbots are one of the hottest trends in technology industry. Earlier, we had only Facebook and Skype (Microsoft) developer programs to support chatbot apps. Now,

smaller messaging platforms, such as Slack and Telegram, have also launched "bot stores" and investment funds to attract developers. Tech giants like Google are betting directly on a chatbot application (with apps like Allo) powered by its artificial intelligence.

Bots and conversational AI are becoming a big growth area as predicted by credible research firms. Gartner has predicted that by 2020, the average person will have more daily conversations with bots than they do with their spouse. This is the reason businesses are increasingly moving towards using chatbots as a source to engage, educate, and convert customers.



# WHY CHATBOTS ARE BECOMING POPULAR?

Their rise in the popularity of chatbots is being dubbed as the direct result of changing user behavior in the post-app mobile world and the maturing of key enabling technologies. Soaring penetration of mobile, popularity of the messaging apps, the explosion of the app ecosystem, advancements in artificial intelligence and cognitive technologies, wider reach of automation, and conversational user interfaces are some key factors that are motivating businesses to invest in conversational AI.

In 2015, Gartner had predicted that after eight years of searching for, downloading and using smartphone apps, users are maturing in their usage behaviors - and apps have largely stopped growing. Users are now spending an increasing amount of time in just five apps - and social and messaging apps emerge as big winners.

Another study by Twilio claims that 66 percent of the people would prefer to talk to brands on messaging platforms (like Facebook Messenger and WhatsApp) over any other medium. Therefore, chatbots can become mandatory tool for social customer service, and brand loyalty.

Another element contributing to chatbots' popularity is the user behavior of tech savvy Millennials. Customers, especially millennials, are increasingly turning away from calling for support and opting for messaging and other self-service channels.

The Generation Y seems more comfortable with text messaging and communicating with gadgets owing to their tech savvy behavior. There are approximately 1.7 billion worldwide users of WhatsApp, Line, Messenger, and WeChat, and that number is

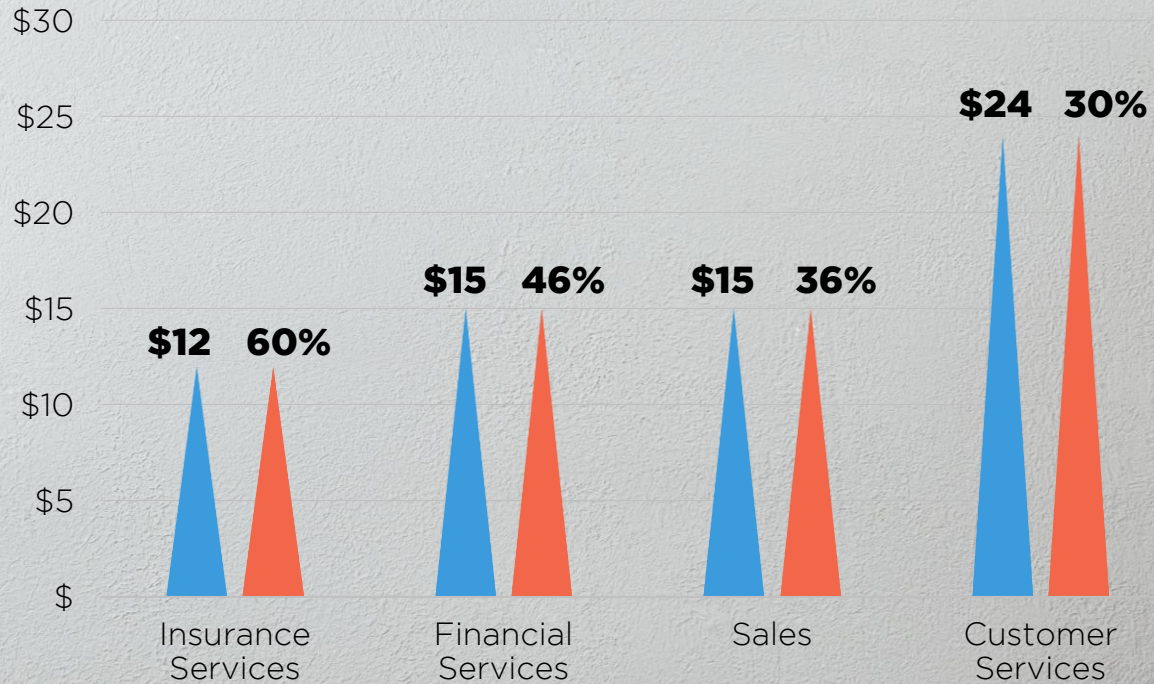
expected to reach two billion by the end of 2018. Chatbots represent a means of monetizing this huge audience.

Bots also provide a great relief to business in terms of cost of customer service. According to IBM Watson, businesses spend a whopping \$1.3 trillion on serving 245 billion customer inquiries every year. Chatbots can reduce these costs significantly when companies upgrade from inefficient IVR technology to chatbots and other new technologies. Chatbots are capable of helping businesses significantly cut labor costs.

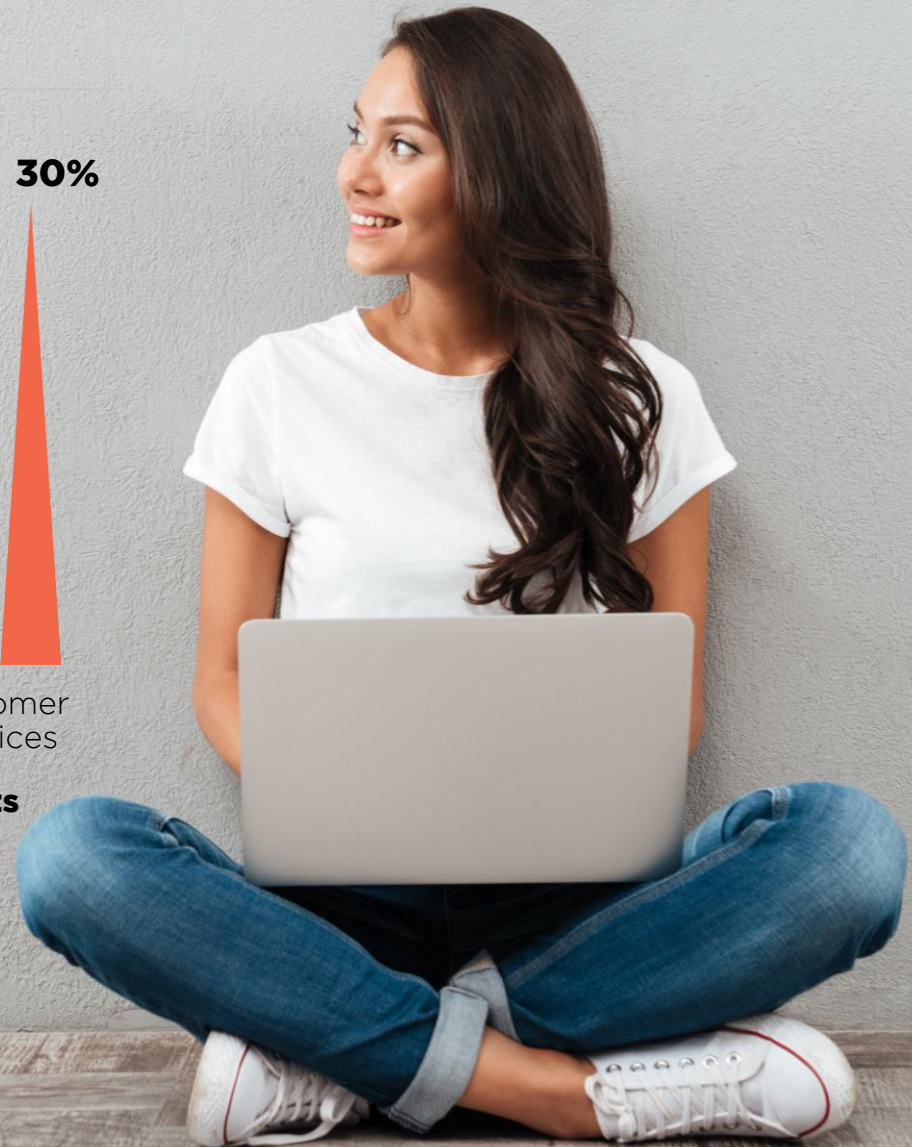


# WHY CHATBOTS ARE BECOMING POPULAR?

## Potential Cost Savings US Annual Salary Savings (\$bill)



**Source: Chatbot Magazine (BI Intelligence, the Chatbots Explainer, 2016)**



# CHATBOT ARCHITECTURE



User  
interface



Artificial  
Intelligence



System  
Integration



# CHATBOT ARCHITECTURE

1

## User Interface

This is the interface between the bot and the human, through an app or a website. Companies are increasingly using voice recognition and search services to enable faster inquiry and processing facility as we can see in Apple's Siri, Amazon's Alexa, and Google's Assistant. Here, Natural Language Processing is used to understand the customer inquiry, and the bot responds in line with pre-programmed templates and context.

2

## Artificial Intelligence

Intelligence enables the chatbot to understand the customer query and solve her problem. Most of the chatbots do problem-solving through the predefined templates and rules (in the decision tree). The other method is Machine Learning, which is yet to grow mature, but has already started to deliver results in certain fields.

Theoretically, bot with a human adult level of linguistic skills would be the ideal choice. However in practice, natural language processing (NLP) isn't fully implemented in bots, which reduces their efficiency. NLP-equipped bot can give the human (on the other end) a feeling that they're having a conversation, rather than poking through tedious software menus.

3

## System Integration

This part covers integration with other tools, applications, and workforce management system to access human agents in case of 'out of scope query'. Bot immediately transfers inquiry to the human agent if it is unable to understand the user's inquiry. Moreover, these integrations are also source of learning for the bots.

Facebook Messenger, Kik, Telegram, Skype, Twitter, SMS, Email, and Slack are some of the most popular messaging platforms where you can build customer service bots. Moreover, if you have an application or website, there are a number of frameworks that support chatbots' integration within your app or website.



# HOW CHATBOT WORKS?



Before we can fully explore chatbot capability, we first need to take a look at chatbot function — how it works. A chatbot works in much the same way as a human manning a help desk. When a customer puts forward some input (traditionally text-based) for bot, the chatbot is programmed to give a response based on its programming, pre-defined paths or machine learning. For a bot to accurately respond, it needs to understand what the user said.



Let's say you are interacting with a chatbot for a travel company. You input the following: "I want to fly to London, UK from New York, USA on December 23."



We assume that the chatbot has been programmed to understand the input, generally based on intent classification and pattern matching. Now, the chatbot has to understand the user's input and reply appropriately. It would likely perform an online search for tickets from New York to London for the given date. Those are essentially the first two steps, classifying the input and extracting information, in a Chatbot's design.

# HOW CHATBOT WORKS?

## So, what is going on behind a chatbot front end?

To answer this question we must understand that there are two types of chatbot. From the front end they both look similar and as a user, you may not be able to distinguish the difference.

As we mentioned before, all chatbots are a form of AI, and

they are supported by complex programming. However, they fall into two categories based on whether the dominant feature is hardcoded questions & answers, or Machine Learning.

Chatbots that function on a

structured questions and answers basis are less complex while the chatbots that operate purely on the machine learning harness the full power of artificial intelligence.

## Scripted and structured



A chatbot working on hardcoded questions/answers has a smaller knowledge base and skill set, and can only provide the correct output to specific instructions. This means our questions must fit with the programming they have been given.

## Free to expand



Machine learning bots harness the power of AI, which gives it a learning brain. It can understand language meaning the commands you give do not need to be so specific. An AI chatbot will figure out that umbrellas and brollys refer to rain, and therefore a deviation from the standard question will not phase them out.



# CHATBOTS IN CUSTOMER SERVICE



## **STORY OF KELLY!**

It's 2 AM on Thursday. Kelly, a product design engineer is preparing her mock presentation of a new adjustable standing desk. She's short on deadline and have to deliver the project on a short notice – before the weekend when she's off to a holiday destination. Kelly opens her product design app and starts the login process – but the application demands an activation code.

Kelly frantically looks for code in her email, cloud, and drive but all in vain. She takes up her phone and calls the software company's helpline with a hope they have 24/7 customer support. To her surprise, however, she was greeted with a recorded greetings, but no agent.

Suddenly, her attention is grabbed by the option of live virtual chat on the company's website. In less than 5 minutes, the Chatbot understood her question and walked her through the process of generating and accessing a new alphanumeric code.

A wave of relief washes over Kelly as she enters the code in her app and finds the needed files for presentation. After a couple of hours of sleep, she nails the presentation and earns a much needed vacation – and enjoys her time with family.

# CHATBOTS IN CUSTOMER SERVICE



## Real-life Application for Your Business



Imagine yourself being caught in the situation like this and one of your customers is frantically looking for something, but is unable to find the solution - and your bot leads to a happy ending.

Can anything be better for you (as a business) than providing faster response to your customers, and first call solution 24/7, 365 days a year?

According to IBM Watson, businesses spend a whopping \$1.3 trillion on serving 245 billion customer service inquiries every year. However, Sprout Social study finds that 80 percent of those inquiries (that require answer) do not get answered, ending up with a bad brand impression on the people - and losing a decent business opportunity.

## How Bots Provide Relief?



Bots allow for a two-way, personalized interaction between the consumer and a brand and provide an ease of access and immediacy that can't be achieved via email, filling out a form on a website or even through tweeting. There are a number of ways bots provide a great relief to the businesses. Three key reasons are mentioned below.

# HOW CHATBOT WORKS?

1

## **The Ability to Respond Immediately**

Customers get frustrated when they ask the same question again and again, lodge a complaint or make a suggestion, and then don't receive a response for days. As a business owner, you also understand the frustration of trying to be both responsive and thorough, but being criticized regardless of your effort. The chances of losing a customer is instantly reduced by replying through an automated Chatbot.

2

## **Unsatisfied Customers Do Not Return to the Brand**

Customer service has always been a crucial determination of success for any business as 91 percent of unsatisfied customers will not return for a repeat purchase or service. This is something you should take very seriously. A simple acknowledgement message by an automated bot letting them know that their complaint/inquiry has been received, and will be processed as the highest priority will be a big relief.

3

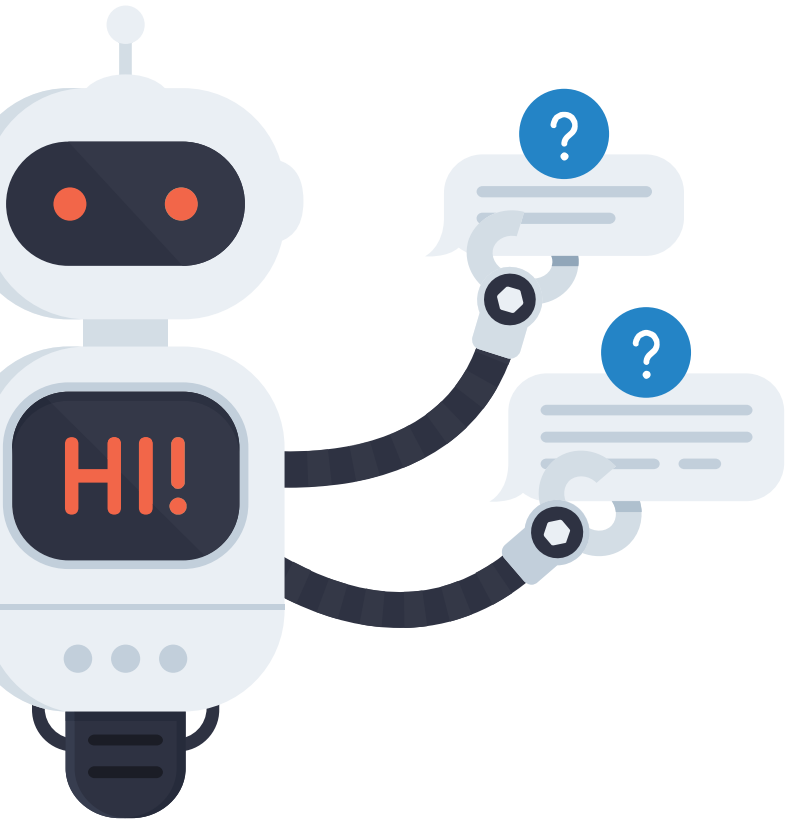
## **Enormous Cost Saving**

As noted in the previous section, chatbots reduce the interaction costs by up to 70 percent. Studies show that it's realistic to aim to deflect between 40% - 80% of common customer service inquiries to chatbots. IBM estimates that the average cost of a customer service phone interaction is around \$35 to \$50 per interaction. Conversely, Chatbot interaction is significantly low-cost, averaging around \$8 to \$10 per session.





# HOW CHATBOT WORKS?



4

## Round the Clock Customer Service

Taking a note from the story of Kelly in the introduction, we can take a very big corporate lesson. We live in different time-zones and there is a strong probability that your customer faced a problem when it was midnight at your home town. There is a strong probability that your customer service team will be unable to respond to the inquiry on the earliest, leaving a bad brand impression on the prospect. That is the point where chatbots come to rescue. They are always there and extremely active throughout the day ready to be engaged. If served on time, prospects will not only have a positive image of the brand but the chances of conversions significantly increase.

5

## Personalize Customer Experience

Since conversational AI tools keep on collecting consumers' data from support interactions and databases, they're intelligent in the formation of a personalized experience. The best thing about the chatbots is their ability to recognize human emotions such as anger, joy, confusion, and fear. If the chatbot detects that the customer is angry, it will instantly transfer the query to a human (customer support representative) to take care of it and assist the customer in a more humane manner.

6

## Reduce Human Error

One of the most obvious reasons we utilize chatbot is because we want to gain time for other (and important) things. Therefore, we outsource some of our tasks to bots, which don't have the human-like tendency to forget - hence chances of errors turn quite negligible.

Chatbots are developed with an objective to have access to huge data that can support them answer your customer's queries perfectly. Thanks to smart algorithms and programming, they are able to process the data accurately and provide the desired answers on demand.

# WILL I LOSE CONTROL OF MY CX?

This is one of the biggest fears of businesses as putting customer conversations in the hands of a machine can lead customers to receive a second-class customer service, leading to a damaged brand reputation. Is this risk worth-taking?

While this fear is not unfounded, there are some tested and practical ways to minimize this risk to a great extent. Using chatbots is like any other technology deployments, and as long as you take care of certain basic things, everything will go just fine.



# WILL I LOSE CONTROL OF MY CX?

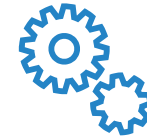
Here are some of the best practices we recommend every client.



Never implement Chatbot at full-scale. Just like applications are developed following an MVP Development Framework, use the same approach here. Run a pilot project, run some extensive in-house testing and measure the results.



You can put a note on your site (alongside Chatbot icon) that bot will respond to inquiries only – and request the customers to forward their complaints to the email or phone helpline. This will reduce the risk of serving an irritated customer poorly.



The best way to handle Chatbot operations is following “Hybrid Approach”. This means, your human agents supervising chatbots very closely, training it and intervening in the conversations where due.



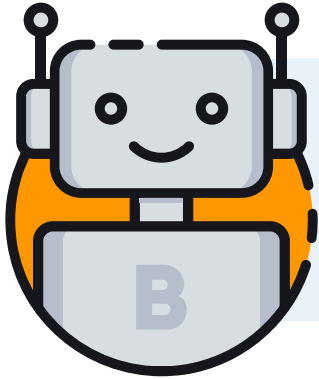
Fourth suggestion is to use a multi-dimensional team to build and train your Chatbot. We recommend using a team with skills across sales, marketing, design, engineering that could design messages that are consistent with your brand and have natural flow. Train your chatbot the way you train your human agents.



Always keep realistic expectations and don't over-promise what a chatbot can do for you. In order to ensure that your customers don't have a bad impressions, keep the bot to basics or relatively simple use cases. Expand it only when the basics have been delivered successfully – and the bot is mature for expansion.



# WHAT TO EXPECT FROM YOUR CHATBOT?



If the bot is implemented following the best practices, studies endorse that it's realistic to aim to deflect between 40% - 80% of common customer service inquiries to the bot, which would have otherwise been handled by a human agent.

## You can expect the following from your chatbot



24/7  
customer service



Timely responses and  
inquiry handling



Reduced cost of  
customer service



Enhanced customer  
engagement



Improved  
brand impression



Soaring customer  
satisfaction



Better understanding  
of customer behavior

# WHAT TO EXPECT FROM YOUR CHATBOT?

## There Is Only One Condition!

If you truly aspire to the breed the advantage offered by conversational AI, make sure to follow the best practices we shared in the earlier chapter. Keep the expectations realistic, and above all, never think of chatbot benefits purely in the cost perspective. Business benefits from chatbots in a number of ways (some have been mentioned above) and cost reduction will come

alongside the bot's scalability and maturity. In the beginning, keep most of the focus on customer experience and sense of service. A poor online customer experience will prevent 3 out of every 5 customers from making future purchases from a brand - which you no business can afford. At IQVIS, we always advise our prospects to follow the MVP Framework - scale

things up and down, as per the level of bot's maturity, business need, and available functionalities. Further, you can ask your chatbot development company to provide you an assessment of the scale, and when you should scale things up. Since they have market experience and tested expertise, their advice can be very helpful in setting realistic expectations.



# HOW TO GET STARTED?

Here are 4 key pre-requisites to effectively implement the conversational AI within your customer service process.



1

## **Understand the Trends**

Start with creating familiarity with how chatbots are being used, not just in your industry, but also in other places where your customers are likely to encounter them. If you are in the food or traveling industry, the probability of your customers getting exposure to chatbots is very high.

2

## **Find the Missing Part in Your Process**

If you are already using some chat support, conduct a diagnostic test within your organization on the chat history. Find out the common queries that your customers mostly put forward and list down the queries that could be handled by simply integrating a chatbot.

In case you do not use chat or messaging customer support, get a meeting with your team and analyze the call logs, email histories, and inbound inquiries. Find out the common issues or inquiries that could be handled via Chatbot.

# HOW TO GET STARTED?



**3**

## **Plan Your Pilot Test**

If you're convinced about using chatbot, pick a set of use cases to go for a trial with bot. Use your human customer service agents alongside the bot and plan your process accordingly. Use the pilot system to learn the outcome at a small scale, before moving to larger one.

**4**

## **Consult a Reliable Development Agency**

Consult and hire a reliable chatbot development company. Normally, these companies provide free assessment of the case and the scale of bot usage. Share your problem and findings with them and specify the immediate need. Rely on the professional advice about moving forward without causing any disturbance to your budget and business process.

**5**

## **Scale It Up**

Once you are satisfied with the outcomes of the pilot test, scale things up.



# ABOUT IQVIS



IQVIS is the next-generation technology company providing custom software solutions. We empower businesses to solve complex problems, reduce risks, and enhance operational excellence with disruptive technology solutions.

## Our Core Expertise



- Business Application Development (Mobile, Web, Cloud)
- Startup Product Engineering & Consultancy
- Conversational AI and Chatbots
- Blockchain and Smart Contracts Development
- Augmented and Virtual Reality Solutions

## Get a Free Assessment



We can help you build chatbots across various platforms including Facebook, Microsoft, WeChat, Telegram, Slack, Oracle and others. Book your free session with our technology consultants and receive your business use case assessment for chatbots

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