



Engaging customers with AI:
A guide for getting started today



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“AI promises to be the most disruptive class of technologies during the next 10 years, due to advances in computational power, volume, velocity and variety of data, as well as advances in deep neural networks.”

John-David Lovelock,
Research vice president at Gartner

Introduction

In 2014, a team of Ukrainian developers convinced 33 percent of the judges at London's Royal Society that their chatbot, 'Eugene', was in fact human.¹

Thought by many to be the first time in 65 years that a computer-based AI had passed the Turing Test, this was one of many milestones for AI over the last five years. And there have been two primary factors behind this seismic shift:

1 The cloud

The advent of the cloud, and relatively cheap, elastic computing, means that companies can simply hire the computing power they need – as and when they need it.

2 DNNs (deep neural networks)

Alongside the access to huge amounts of computing power in the cloud is the development of the algorithms themselves. One of the most important of these are deep neural networks (DNNs), where scientists have discovered a way to modify and improve existing neural networks. An example of DNNs is Microsoft's intelligent assistant, Cortana.

For Microsoft customers, AI's emergence as an enterprise-ready technology presents a host of new business opportunities. By working together with our Cloud Solution Architects, we collaborate with customers to help identify how data, AI, and Cognitive Services as a whole can help your organisation flourish.

In this guide, we will explain how AI can help your business grow, dispel some of the myths surrounding the technology, present key considerations, and look at what the future holds for AI.



¹Passing the test required more than 30% of judges to be fooled over a 5-minute interaction. Source: <http://www.bbc.co.uk/news/technology-27762088>

AI business benefits

Business decision makers are primarily focused on two things: making money and reducing costs. And, tactically, there are many ways to achieve this using AI.

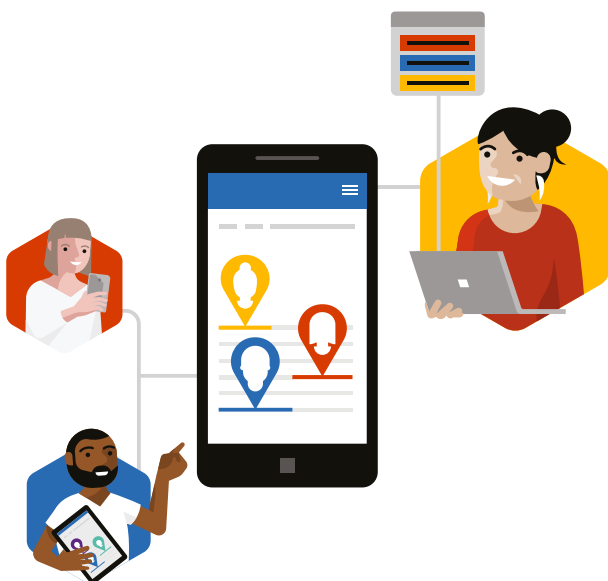
One of the most exciting areas of AI development is customer services. Thanks to AI, you can free up your most valuable front-line support staff, and put your talent where it really counts.

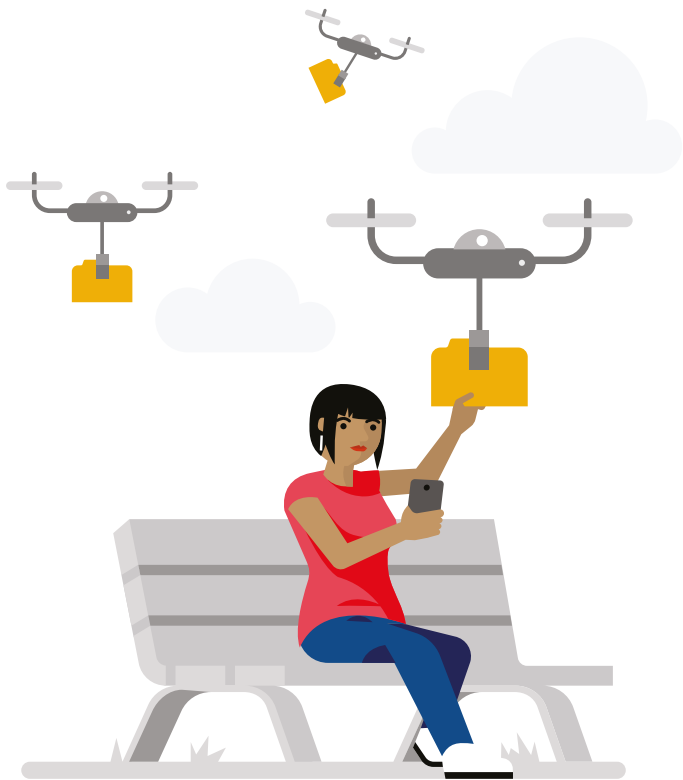
Humans rule. The people who have the trickiest problems are actually being dealt with by a human being, who's well trained and can help them, whereas the straightforward questions can be answered by AI.

With AI, you don't have to hire a whole bunch of extra people to meet the kind of SLAs required for answering calls and handling data. You can start doing that in a cost-neutral way, because you've moved your front-line staff into second- and third-line support. Simple questions are getting answered quickly using AI.

Free up your talent. For one customer, Microsoft managed to free up a HR person from admin duties, so they could get back to doing their job. Microsoft introduced a bot that answers questions about things such as holiday forms and maternity leave entitlement.

But AI can be used in a plethora of ways beyond customer service, injecting itself into an entire product process if necessary. At every stage along the business roadmap, AI can make real differences to improve the user experience and, more importantly, boost the customer's bottom line.





Managing chatbots

Managing chatbots has never been easier, especially with new offerings such as Azure Bot Service, the first public cloud bot service powered by the Microsoft Bot Framework and Azure. With Azure Bot Service, you can build, connect, deploy, and manage intelligent bots that interact on third-party platforms like Facebook Messenger or via Slack, Skype, Teams, Kik, and Office 365.

For more information, visit: <https://azure.microsoft.com/en-gb/services/bot-service/>

According to a 2017 report from Grand View Research, the global artificial intelligence chatbot market is expected to reach \$1.23 billion by 2025.



Big data and AI

You may have been collecting data for years, or even decades, without really knowing what you should be doing with it. A big data project can seem intimidating for businesses. This is where AI can be a huge help.

“We try and break things down into steps, to make them more manageable, and the first step is clustering and segmentation”, explains Gary Short, Cloud Solutions Architect at Microsoft. “We segment that data on a bunch of criteria, which could be gender, the number of years that you spent with the company, your buying history, and so on”.

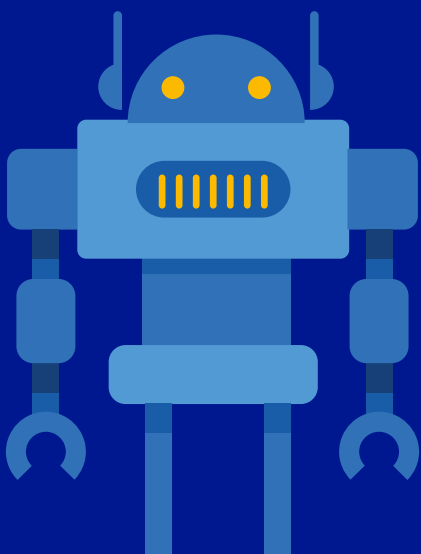
The team then attributes numerical values to all the data it has identified and then runs AI and custom algorithms over that data, looking for insight, such as where customers might cluster together, and what behaviours and characteristics they might share.

“Once we have these customers, we can then start drilling into them and trying to work out what it is in the features that make those particular segments of customers behave in a particular way”, says Short.

“Depending on the complexity of the project it can take a longer or shorter period of time depending on how much data you’ve got, how thoroughly you want to segment that customer data, and how many clusters you get out of it”.

Once the customer, with guidance from Microsoft Cloud Solution Architects, figures out what data they have, they can set up an architecture that takes advantage of AI and machine learning, to do whatever it is they want help with.

“Once we’ve worked through the likes of architecture, security, GDPR, and privacy, we may move on to a small proof of concept”, says Short. “At that point it’ll go into production, and the customer’s own engineers, or an outside agency, may get involved, to put it into production and to care for this particular application or model”.



Integrate chatbots with Microsoft Azure

If you’d like to learn more about integrating chatbots with Azure or simply want to see how easy it is, visit the [Azure Bot services page](#) and check out this introductory tutorial: **Publishing Bot to Azure and adding it to Skype (Microsoft Bot Framework)**.



“We try and break things down into steps, to make them more manageable, and the first step is clustering and segmentation”

Three things to consider

Working with our Cognitive Services Team at Microsoft, we can establish whether AI can help improve an area of your organisation. Here, we look at things to consider when scoping your AI project.



1 Cloud maturity

To use AI, you need access to your data. To safely and robustly put your data into the cloud, you must have the processes and support in place to move your data into the cloud.

For example, it's essential to have fast connections from your data centres, good access to the cloud and IT support. All of which Microsoft's team of experts can help with.

2 GDPR and privacy

A lot of the AI work that Microsoft does is general, rather than applied (natural-language understanding, for example). General-purpose systems with intelligence comparable to that of the human mind.

"You want to be able to feed the AI any kind of written text in English and have that AI understand what it has read", says Short.

"But if you think about propensity modelling, such as the work we might do in identifying a customer who is about to lapse, then we're looking at a specific individual's propensity of risk to churn".

To help you ascertain your compliance responsibilities, Microsoft has a number of services available via the **Microsoft Trust Center**. Microsoft is committed to the highest levels of trust, transparency, standards conformance, and regulatory compliance.



3 Time and resource

Consider time and resource requirements when embarking on an AI project. It isn't just a case of having copious quantities of data that you can train your AI on. That data must be labelled.

"If you're doing a very straightforward classification AI (where you categorise a person in Group A or in Group B, for example), you must have a large amount of labelled data that says people who look like this are in A, or people who look like that are in B," says Short.

"For the AI to learn what the classifications look like, when it's looking at a person, this labelling is vital. However, getting your hands on that labelled data can be labour-intensive, because a human being has to make a decision in the first place".

Do you have the skills and capacity in house, or do you need support from an external company? The impact will vary depending on the scale of the project.



Gary Short

Cloud Solution Architect
(Advanced Analytics & AI)
at Microsoft

Q&A—Gary Short

AI and the customer experience

In a world with GDPR, where users are increasingly concerned about their privacy, it's important to know what you can and can't do with AI. Here we speak to Cloud Solutions Architect Gary Short about his views on disclosing the use of AI technology.

Q: Is there a legal requirement to tell people you're using AI?

A: Firstly, there's no legislation or legal requirement that requires businesses to tell customers that they are using AI, so they may make the decision voluntarily.

Q: By trying to improve the customer experience, is there potential to impact it in a negative way?

A: It comes down to the old physics problem that any system under observation behaves differently because of that observation. If you tell an end user that they're actually interacting with a piece of AI, they will approach that AI in a different way than they would if they believed they were interacting with a human being. And all the AI systems are calibrated to monitor and react to natural human responses, which would no longer be natural if you exposed the use of AI.

Q: So, should we tell people they are interacting with AI?

A: At Microsoft we advise to always be clear and transparent with customers, at all times there is a minor risk that people may adapt their approach knowing it is an AI application – but if done properly, the AI application should still deliver a rich and seamless experience.

Microsoft AI use-case

The telecom market in the UK is, according to an Ofcom 2017 Report, 98 percent saturated. So that basically means 98 percent of households that want broadband, internet, and a landline already have it.

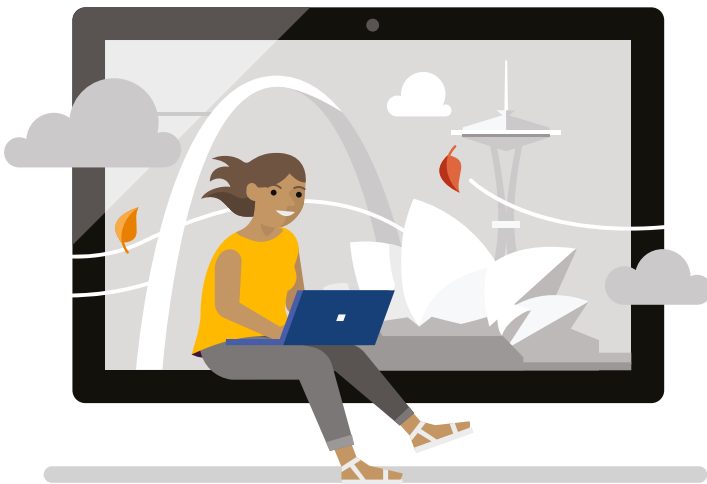
To grow your customer base, you have to either acquire them from your competitors or rely on the government to create more households by building new homes. House building in the UK has been in a decade-long decline now, so, in the very short term, you are growing your business by taking customers away from your competition. And, naturally, they're trying to take your customers.

Customer churn, then – the propensity to leave – is vital, and churn prediction and mitigation are very important for telecom companies. Microsoft helped a telecom company build a model that would predict customers who were going to leave and put in place several mitigating steps to save those customers.

AI was involved in predicting which customers were likely to leave over the next 30, 60, and 90 days. At that point, those customers were surfaced and passed on to the marketing department. Depending on their reasons for leaving, they were contacted by the retention team. It wasn't just a case of us identifying which customers were likely to leave, but also identifying the lead reason as well. By using AI, we not only identified a potential lost customer, but also their reason for leaving. Again, this information was passed on to the marketing department.

Then, using the champion/challenger model, A/B testing was undertaken to establish the most effective communication. Here AI was used to suggest tweaks to the challenger messaging, continually testing the challenger against the champion. If it was better, it was replaced.

This particular model had a 25x return on investment, which is one of highest returns on investments the company had seen.





What now?

To find out more about how you can adopt artificial intelligence visit <https://microsoft.com/en-gb/ai/>

